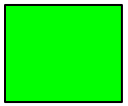
SCCCS' Scope and Sequence (A working, living document)

Yellow highlighting in the right column indicates where SCCCS' curriculum takes a <u>developmentally-appropriate</u> approach to learning and introduces a California Common Core standard in a later grade level.



Green highlighting in the right column marks where SCCCS' curriculum introduces a skill in an earlier grade level than that of the California Common Core standard.

White on the right indicates where standards are met in concert with our Public Waldorf Curriculum.

Sycamore Creek Community Charter School

Public Waldorf Inspired Curriculum Cross Articulation with California Aligned Common Core Standards and Next Generation Science Standards

TRANSITIONAL AND TRADITIONAL KINDERGARTEN

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	**California Aligned Common Core Standards and Next Generation Science Standards**
English Language Arts: *Foundations of Reading* S**trategies used to meet Common Core Standards for Foundations of Reading Include: (With prompting and support)** The foundations of reading are laid through the telling of fairy tales from around the world, singing, poetry, verses, and rhymes. Syllabication and phonemic awareness are further developed though finger plays, games and songs with an emphasis on the oral tradition.	**English Language Arts: *Reading Literature*** **Kindergarten: *Reading Literature (Kindergarten CC standard met in SCCCS Kindergarten)*** ***Key Ideas and Details*** RL 1. With prompting and support, ask and answer questions about key details in a text. ("text" orally delivered in K) RL 2. With prompting and support, retell familiar stories, including key details. (Re-tell And/or re-enact in K) RL 3. With prompting and support, identify characters, settings, and major events in a story. (In K, demonstrated through re-enactment, play)

The foundations of reading comprehension are developed as students re-tell and/or demonstrate understanding through dramatic re-enactment, puppetry and play. Students participate in Q & A time during/after storytelling, reviewing key details, identify characters, setting and major events.	
English Language Arts: *Foundations of Writing* S**trategies used to meet Common Core Standards of Writing Include: (With guidance and support from peers and adults)** Through language rich experiences included in fairy tales, singing, poetry and verses, students develop the foundation for later writing experiences. Students engage in oral/pictorial/enacted response when asked to recall information from experiences or from provided sources. example: Explain the sequence of proper hand-washing prior to handling food. Exploration of letter graphemes through artistic expression.	**English Language Arts: *Writing*** **Kindergarten: *Writing (Kindergarten CC standard met in SCCCS Kindergarten)*** ***Research to Build and Present Knowledge*** W 8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. [Sources provided orally or pictorially. Student response oral or pictorial or enacted (foundational to Writing)]
English Language Arts: *Speaking & Listening* (see 'Foundations of Reading' above) S**trategies used to meet Common Core Standards of Speaking & Listening Include: (With guidance and support from peers and adults)**	**English Language Arts: *Speaking & Listening*** **Kindergarten: *Comprehension and Collaboration (Kindergarten CC standard met in SCCCS Kindergarten)*** SL 1. Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups. SL 1a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). SL 1b. Continue a conversation through multiple exchanges.

● Through language rich experiences included in fairy tales, singing, poetry and verses, personal stories, and verbal explanation of drawings/visual displays students develop speaking and listening skills. ● During "Circle Time", students have a variety of ways to converse collaboratively in big or small groups. ● The rhythms of the day and expected behaviors are learned through repetition and modeling. ● Many standards in this section are met through the activities in Foundations of Writing.	SL 2. Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood. SL 2 a. Understand and follow one- and two- step oral directions. SL 3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood. ***Presentation of Knowledge and Ideas*** SL 4. Describe familiar people, places, things, and events and, with prompting and support, provide additional detail. SL 5. Add drawings or other visual displays to descriptions as desired to provide additional detail. SL 6. Speak audibly and express thoughts, feelings, and ideas clearly.
<u>English Language Arts: *Language*</u> S**trategies used to meet Common Core Standards of Language Include: (With guidance and support from peers and adults)** ● Students will be guided in correct grammar and usage during oral communication during class activities such as telling a story by heart or recounting and event. ● Attention is paid to use of: Frequently used nouns and verbs, regular/plural nouns, questions words, prepositions, production/expansion of complete sentences, and vocabulary.	**<u>English Language Arts: *Language*</u>** **<u>Kindergarten: *Conventions of Standard English (Kindergarten CC standard met in SCCCS Kindergarten)*</u>** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. (K—Oral only) L 1b. Use frequently occurring nouns and verbs. (K—when speaking) L 1c. Form regular plural nouns orally by adding /s/ or /es/ (e.g., dog, dogs; wish, wishes). (K—in speaking) L 1d. Understand and use question words (interrogatives) (e.g., who, what, where, when, why, how). (K—in speaking) L 1e. Use the most frequently occurring prepositions (e.g., to, from, in, out, on, off, for, of, by, with). (K—in speaking) L 1f. Produce and expand complete sentences in shared language activities. (In conversation) ***Vocabulary Acquisition and Use*** L 5. With guidance and support from adults, explore word relationships and nuances in word meanings. (Oral guidance and exploration) L 5a. Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent. L 6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts. (Oral guidance and exploration)
<u>Mathematics</u> ***Introduction***	**<u>Mathematics</u>**

The qualities of numbers from 1-30; sorting and ordering; rhythmic counting with movement and song; measuring and simple addition and subtraction often in baking, cooking; woodworking	
Mathematics: *Counting and Cardinality* S**trategies used to meet Common Core Standards of Counting and Cardinality Include:** ● Class activities such as following simple recipes, crafting, songs, rhythmic games, and groupings of objects provide opportunity for students to know number names, count sequence, count to know number of objects, and comparison of numbers.	**Mathematics: *Counting and Cardinality*** **Kindergarten: *Counting and Cardinality (Kindergarten CC standard met in Kindergarten)*** ***Know number names and the count sequence.*** CC 1. Count to 100 by ones and by tens. (Begins in K) CC 2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1). (Begins in K) ***Count to tell the number of objects.*** CC 4. Understand the relationship between numbers and quantities; connect counting to cardinality. CC 4a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. CC 4b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. CC 4c. Understand that each successive number name refers to a quantity that is one larger. ***Compare numbers.*** CC 6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Begins in K)
Mathematics: *Measurement and Data* S**trategies used to meet Common Core Standards of Measurement and Data Include:** ● Class activities such as following simple recipes, crafting, and groupings of objects provide opportunity for students to describe and compare measurable attributes (measuring cups, rulers, measuring tape), classify objects and count the number of objects in each category.	**Mathematics: *Measurement and Data*** **Kindergarten: *Measurement and Data (Kindergarten CC standard met in Kindergarten)*** ***Describe and compare measurable attributes.*** MD 1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (Experiential in K,) MD 2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. (Experiential in K,) ***Classify objects and count the number of objects in each category.*** MD 3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Begins in K)
Mathematics: *Geometry*	**Mathematics: *Geometry*** **Kindergarten: *Geometry (Kindergarten CC standard met in SCCCS Kindergarten)***

S**trategies used to meet Common Core Standards of Geometry Include:** ● Class activities such as crafting, groupings of objects, drawing, modeling and full body movement activities provide opportunity for students to identify and describe shapes.	***Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).*** G 2. Correctly name shapes regardless of their orientations or overall size. G 5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. G 6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"
Science Kindergarten students in SCCCS, a school Guided by the Core Principles of Public Waldorf Education, will be doing the hard work of learning the natural world around them through experience and rhythm. In complement with the natural rhythms like sleeping and waking, breathing in and out; children are able to practice rhythmically working with various main tasks and activities (nature walks, cooking, baking, gardening, painting, handwork) on certain days of the week as well as daily rhythms like circle times, songs, verses, housekeeping and even hand washing. Students develop a natural curiosity and understanding for the wonders of nature including interdependent relationships in Ecosystems: Animals, Plants, and their Environment, Weather and Climate, through nature stories, nature walks, observations and gardening. Furthermore, through both indoor and outdoor play designed to discover engineering basics, students are exposed to and develop an understanding of Interactions: Pushes and Pulls. With this understanding students use beeswax and other natural materials to demonstrate their understanding. Focus on the natural rhythms of life helps	**Science** **K-LS1-1.** **Use observations to describe patterns of what plants and animals (including humans) need to survive.** [Clarification Statement: Examples of patterns could include that animals need to take in food, but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.] **K-ESS2-2.** **Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.** [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.] **K-ESS3-1.** **Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.** [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas, and grasses need sunlight, so they often grow in meadows. Plants, animals, and their surroundings make up a system.] **K-ESS3-3.** **Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.*** [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.] **K-PS3-1.** **Make observations to determine the effect of sunlight on Earth's surface.** [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.] **K-PS3-2.** **Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*** [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.] **K-ESS2-1.** **Use and share observations of local weather conditions to describe patterns over time.** [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month.

young children in growing their confidence and sense of themselves and the world in which they live	Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.] **Students who demonstrate understanding can:** **K–2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.** **K–2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** **K–2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.** **K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*** [Clarification Statement: Emphasis is on local forms of severe weather.] Students who demonstrate understanding can: **K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.** [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.] **K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.*** [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.]

GRADE 1

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	California Aligned Common Core Standards and Next Generation Science Standards
English Language Arts: *Reading* The SCCCS approach to literacy, as with all our teaching, is to build from the known to the unknown. Rather than push a student to decode quickly, we concentrate on building a solid foundation for long-term writing and reading success. This foundation begins with what the child already knows—oral language. The average first grader has a working vocabulary of approximately 10,000 words. This number will be even higher at SCCCS since Transitional and traditional Kindergarten teachers consciously model and cultivates expansive vocabularies. Imitation of adult-led activities focused on stories, folktales, and fables, are a foundation of the curriculum. Repetition allows the young student to extract meaning from stories presented, promotes a child's ability to retell detailed stories, and allows the student to competently provide rich descriptions of the characters, settings, and events that occur therein. The first-grade child learns how to first write and then read what they have already learned to	**English Language Arts: *Reading*** **Kindergarten: *Reading Literature (Kindergarten CC standard met in SCCCS Grade 1)*** ***Key Ideas and Details*** RL 1. With prompting and support, ask and answer questions about key details in a text. RL 2. With prompting and support, retell familiar stories, including key details. RL 3. With prompting and support, identify characters, settings, and major events in a story. **Kindergarten: *Reading Foundational Skills (Kindergarten CC standard met in SCCCS Grade 1)*** ***Print Concepts*** RFS 1. Demonstrate understanding of the organization and basic features of print. RFS 1a. Follow words from left to right, top to bottom and page by page. RFFS 1b. Recognize that spoken words are represented in written language by specific sequences of letters. RFS 1c. Understand that words are separated by spaces in print. RFS 1d. Recognize and name all upper- and lowercase letters of the alphabet. ***Phonological Awareness*** RFS 2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes). RFS 2a. Recognize and produce rhyming words. RFS 2b. Count, pronounce, blend, and segment syllables in spoken words RFS 2c. Blend and segment onsets and rhymes of single-syllable spoken words. RFS 2d. Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words.1 (This does not include CVCs ending with /l/, /r/, or /x/.) RFS 2e. Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words. RFS 2f. Blend two or three phonemes into recognizable words. (Throughout Grades 1 & 2) ***Phonics and Word Recognition*** RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words (both in isolation and in text.) (Begins in grade 1, met in Gr. 2)

say. This builds upon their assets versus deficits. Over the course of the year, the teacher introduces the letters and sounds in	RFS 3a. Demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant. ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Print many upper- and lowercase letters.
imaginative ways. Students become increasingly capable of writing and reading sight words as the first-grade year progresses. The teacher presents the study of these words in the context of compelling and age-appropriate stories. The first-grade child is quite ready to undertake the tasks of literacy development, which comes clearly into focus through SCCCS's Language Arts curriculum. Teachers closely assess and monitor students so that the appropriate services are available at this crucial developmental period. Formal introduction to letters: Letter sounds, short/long vowels, word families, short vowels, silent e, blends in speech work, sight words: 0-100, phonetic spelling. Games that encourage visual tracking, concepts of print, matching oral and printed words, and phonemic awareness are introduced and assessed formatively to help guide instruction. Students become increasingly capable of writing and reading high frequency words as the first-grade year progresses. The teacher presents the study of these words in the context of compelling and age-appropriate stories.	**Grade 1: *Reading Literature (First Grade CC standard met in SCCCS Grade 1)*** ***Key Ideas and Details*** RL 1. Ask and answer questions about key details in a text. RL 2. Retell stories, including key details, and demonstrate understanding of their central message or lesson. RL 3. Describe characters, settings, and major events in a story, using key details. ***Integration of Knowledge and Ideas*** RL 7. Use illustrations and details in a story to describe its characters, setting, or events. ***Range of Reading and Level of Text Complexity*** RL 10. With prompting and support, read prose and poetry of appropriate complexity for Grade 1. (Begins with class writing) RL 10a. Activate prior knowledge related to the information and events in a text. RL 10b. Confirm predictions about what will happen next in a text. **Grade 1: *Reading Foundational Skills (First Grade CC standard met in SCCCS Grade 1)*** ***Print Concepts*** RFS 1. Demonstrate understanding of the organization and basic features of print. RFS 1a. Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation). RFS 1b. Recognize that spoken words are represented in written language by specific sequences of letters RFS 1c. Understand that words are separated by spaces in print. RFS 1d. Recognize and name all upper- and lowercase letters of the alphabet. ***Phonological Awareness*** RFS 2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes). RFS 2a. Distinguish long from short vowel sounds in spoken single-syllable words. (continues in Grade 2) RFS 2b. Orally produce single-syllable words by blending sounds (phonemes), including consonant blends. RFS 2c. Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words. RFS 2d. Segment spoken single-syllable words into their complete sequence of individual sounds

	(phonemes) ***Phonics and Word Recognition*** RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words both in isolation and in text. (Begins in Grade 1) RFS 3a. Know the spelling-sound correspondences for common consonant digraphs. RFS 3b. Decode regularly spelled one-syllable words. RFS 3c. Know final -e and common vowel team conventions for representing long vowel sounds. (Begins in Grade 1) RFS 3d. Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word. (Begins in Grade 1) RFS 3e. Decode two-syllable words following basic patterns by breaking the words into syllables. (Begins in Grade 1) RFS 3f. Read words with inflectional endings. (Begins in Grade 1) RFS 3g. Recognize and read grade-appropriate irregularly spelled words. (Begins in Grade 1) ***Fluency*** RFS 4. Read with sufficient accuracy and fluency to support comprehension. (Class-generated writing) RFS 4a. Read on-level text with purpose and understanding. (Begins in Grade 1) RFS 4b. Read on-level text orally with accuracy, appropriate rate, and expression on successive readings. (Begins in Grade 1) RFS 4c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary. (Begins in Grade 1)
English Language Arts: *Writing* Writing arises from drawing, and from both the kinesthetic extension and continued practice of the alphabet as a combination of the straight and curved lines. Much care is taken in the initial stage of writing to prepare the children for success. Penmanship, the spacing of letters, recognition and distinction of letters, words, and sentences are all emphasized. Students practice capital and lowercase letters, single sentences, and writing from experience. With teacher support, students write simple sentences phonetically through story and images.	**English Language Arts: *Writing*** **Grade 1: *Writing (First Grade CC standard met in SCCCS Grade 1)*** ***Research to Build and Present Knowledge*** W 8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

Many components of the Common Core standards are achieved in future grades, as fine motor skills and form drawing are a key component of the First Grade curriculum in a Waldorf classroom. Form drawings with embedded letters are prepared by students in conjunction with familiar stories that engage the imagination. Since a Waldorf classroom is a language-rich environment, there is consistent discussion about stories and events that lead to active recall of information. Repetition also allows for students to build solid mental representations of stories in order to answer comprehension questions.	
English Language Arts: *Speaking & Listening* Thematic instruction centers around storytelling (archetypal fairy tales being one of the primary foci) to develop the child's growing capacity for writing and reading. Listening and speaking is deepened by daily activities, which allow the child to retell stories, poems, and verses using basic story grammar and relating the sequence of story events by answering who, what, when, where, and how questions to increase comprehension. Imagination and forming mental images of stories is essential for children to identify key people, places, things and events. Students will produce visual representations of the story materials presented. SCCCS will foster strong	**English Language Arts: *Speaking & Listening*** **Kindergarten: *Speaking & Listening (Kindergarten CC standard met in SCCCS Grade 1)*** ***Comprehension and Collaboration*** SL 1. Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and larger groups. SL 1a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). SL 1b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. SL 1c. Ask questions to clear up any confusion about the topics and texts under discussion. SL 2. Ask and answer questions about key details in a text read aloud or information presented orally or through other media. SL 2a. Give, restate, and follow simple two-step directions. SL 3. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood. ***Presentation of Knowledge and Ideas*** SL 4. Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly. SL 4a. Memorize and recite poems, rhymes, and songs with expression.

imaginative skills through nurturing an understanding of feelings and the experiences of others. Given the importance of collaboration in tasks related to speaking and listening, SCCCS will nurture those skills throughout the presentation of early English Language Arts activities.	SL 5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings. SL 6. Produce complete sentences when appropriate to task and situation. (See grade 1 Language standards 1 and 3 for specific expectations.
English Language Arts: *Language* A strong foundation in oral language is the cornerstone of vocabulary development and learning the mechanics of the English language. SCCCS will ensure that students are skilled in listening and re-telling familiar stories using appropriate grammar, syntax, and vocabulary. Since a Waldorf classroom is a language-rich environment, there is consistent discussion about stories and events that lead to active recall of information. Repetition also allows for students to build solid mental representations of stories in order to answer comprehension questions. Early stories introduce consonant letters in preparation for writing. Children produce	**English Language Arts: *Language*** **Kindergarten: *Writing (Kindergarten CC standard met in SCCCS Grade 1)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Print many upper- and lowercase letters. L 1e. Use the most frequently occurring prepositions (e.g., to, from, in, out, on, off, for, of, by, with) L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. (beginning mastery with mastery occurring in second grade) L 2a. Capitalize the first word in a sentence and the pronoun I. L 2b. Recognize and name end punctuation. L 2c. Write a letter or letters for most consonant and short-vowel sounds (phonemes). L 2d. Spell simple words phonetically, drawing on knowledge of sound-letter relationships. ***Vocabulary Acquisition and Use*** L 5. With guidance and support from adults, explore word relationships and nuances in word meanings. L 5c. Identify real-life connections between words and their use (e.g., note places at school that are colorful). L 5d. Distinguish shades of meaning among verbs describing the same general action (e.g., walk, march, strut, prance) by acting out the meanings. L 6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts.
written letters in the context of illustrating stories in their lesson books. Vowels are taught with the intention of extracting feeling, mood, and meaning of main stories. Further, short and long vowel sound exploration is a foundation for phonics. Students will produce	**Grade 1: *Language (First Grade CC standard met in SCCCS Grade 1)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. (In speaking at Gr. 1) L 1a. Print all upper- and lowercase letters. (Lower case may be completed in Gr. 2) L 1b. Use common, proper, and possessive nouns. (Refined through Gr. 3) L 1c. Use singular and plural nouns with matching verbs in basic sentences (e.g., *He hops*; *We hop*). (Orally, refined through Gr. 3)

their own readers following their lessons on consonants and vowels. Students will produce sentences modeled by the teacher. Since the student is producing a reader, they will write new sentences daily that include nouns, verbs and pronouns. Sentences are written alongside student-produced illustrations for the story. Once students successfully produce a reader and can read the content, printing in small letters is practiced in preparation for producing the second reader. Readers are used by teacher and student to review printed words, both in and out of context. Word families are identified and reinforced through rhyming, writing a list, and creating illustrations in a lesson book.	L 1d. Use personal (subject, object), possessive, and indefinite pronouns (e.g., *I, me, my; they, them, their; anyone, everything*). **(**Refined through Gr. 3) L 1e. Use verbs to convey a sense of past, present, and future (e.g., Y*esterday I walked home; Today I walk home; Tomorrow I will walk home*). (Refined through Gr. 4) L 1f. Use frequently occurring adjectives. (Refined in Gr. 2) L 1g. Use frequently occurring conjunctions (e.g., *and, but, or, so, because*). (Refined in Gr. 2) L 1h. Use determiners (e.g., articles, demonstratives). (Refined in Gr. 2) L 1i. Use frequently occurring prepositions (e.g., *during, beyond, toward*). (Refined in Gr. 2) L 1j. Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to prompts. (Oral prompts, skills refined across grades) L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. (Introduced in grades 1 and 2, achieved increasingly) L 2a. Capitalize dates and names of people. (Consistently in grade 2) L 2b. Use end punctuation for sentences. L 2d. Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words. (Expanding through the early grades) L 2e. Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions. (Expanding through the early grades) ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 1 reading and content, choosing flexibly from an array of strategies. (Begins in Gr. 1) L 4a. Use sentence-level context as a clue to the meaning of a word or phrase. L 5. With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings. L 5a. Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent. L 5b. Define words by category and by one or more key attributes (e.g., a *duck* is a bird that swims; a *tiger* is a large cat with stripes). L 5c. Identify real-life connections between words and their use (e.g., note places at home that are *cozy*). L 5d. Distinguish shades of meaning among verbs differing in manner (e.g., *look, peek, glance, stare, glare, scowl*) and adjectives differing in intensity (e.g., *large, gigantic*) by defining or choosing them or by acting out the meanings. L 6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., because).
Mathematics	**Mathematics** **Kindergarten: *Counting and Cardinality (Kindergarten CC standard met in SCCCS Grade 1)***

SCCCS's integrated approach to mathematics in first grade builds critical thinking capacities, facilitates memory, and imparts an appreciation for the qualities of numbers and numeracy up to 120.Counting, and Roman numerals. Math is taught from the whole to the part and is integrated into other parts of the curriculum. Children take these skills into their emergent writing experiences by solving number sentences that express numerical relationships. Students begin to memorize their multiplication tables (twos, threes, fours, fives, and tens) through rhyme and movement. Additionally, they are introduced to the concept of the number line and recognizing patterns. Formative and summative assessments help to guide differentiated instruction.	***Know number names and the count sequence.*** CC 1. Count to 100 by ones and by tens. CC 3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). ***Count to tell the number of objects.*** CC 5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. ***Compare numbers.*** CC 6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. CC 7. Compare two numbers between 1 and 10 presented as written numerals.
Mathematics: Operations and Algebraic Thinking Stories, art, manipulatives, music, mental games, and movement are used to stimulate students to create a context for the understanding of numeric concepts. Formal introduction to the four operations of arithmetic (Addition, Subtraction, Multiplication, and Division) is embedded in oral stories. The four operations are tied to characters that exemplify social characteristics for understanding; gathering (addition), sharing with others (subtraction), observation and notation of recurrent patterns in nature (multiplication/division), and the equity and equanimity of the equal sign. Clapping,	**Mathematics: *Operations and Algebraic Thinking*** **Kindergarten: *Operations and Algebraic Thinking (Kindergarten CC standard met in SCCCS Grade 1)*** ***Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.*** OAT 1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. OAT 2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. OAT 3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). OAT 4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. OAT 5. Fluently add and subtract within 5. **First Grade: *Operations and Algebraic Thinking (First Grade CC standard met in SCCCS Grade 1)*** ***Represent and solve problems involving addition and subtraction.***

chanting, skipping, jumping rope, and stepping intervals assist with patterning and sorting quantities. Children take these skills into their emergent writing experiences by solving number sentences that express numerical relationships. Students begin to memorize their multiplication tables (twos, threes, fours, fives, and tens) through rhyme and movement. Additionally, they are introduced to the concept of the number line and recognizing patterns. Formative and summative assessments help to guide differentiated instruction.	OAT 1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. (Introduced at Gr. 1) OAT 2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. (Introduced at Gr. 1) ***Add and subtract within 20.*** OAT 5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). OAT 6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as ● counting on; ● making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); ● using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). ***Work with addition and subtraction equations.*** OAT 7. Understand the meaning of the equal sign and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.* OAT 8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = – 3, 6 + 6 = □.*
Mathematics: *Number and Operations in Base Ten* Manipulatives are used in early counting activities and are useful for math games. Once counting is mastered, games incorporate cards or dominos to complete addition and subtraction tasks to a base of 10 (for example, a card with a 1 and a 9 are a pair since they add to 10). Rhyming activities help students learn counting by tens.	**Mathematics: *Number and Operations in Base Ten*** **Kindergarten: *Number and Operations in Base Ten (Kindergarten CC standard met in SCCCS Grade 1)*** ***Work with numbers 11-19 to gain foundations for place value.*** NOBT 1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

	First Grade: *Number and Operations in Base Ten* ***Extend the counting sequence.*** NOBT 1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. (Incorporates K. CC.1) NOBT 2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: NOBT 2a. 10 can be thought of as a bundle of ten ones — called a "ten." NOBT 2b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. NOBT 2c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
Mathematics: *Measurement and Data* Students are guided to use natural objects for comparison on basic measurement concepts. Categorization is learned in the context of lessons, commonly in the student's illustrative work.	**Mathematics: *Measurement and Data*** **Kindergarten: *Measurement and Data (Kindergarten CC standard met in SCCCS Grade 1)*** ***Describe and compare measurable attributes.*** MD 1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. MD 2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/ "less of" the attribute and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. ***Classify objects and count the number of objects in each category.*** MD 3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. **First Grade: *Measurement and Data*** ***Measure lengths indirectly and by iterating length units.*** MD 1. Order three objects by length; compare the lengths of two objects indirectly by using a third object. 4. Organize, represent, and interpret data with up to three categories. Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
Mathematics: *Geometry* Form drawings are used in the understanding of early geometry. Students are taught to freehand simple geometric shapes, such as the circle, oval, the triangle, and the square. Direction and position are incorporated into kinesthetic experiences of shapes in preparation for freehand geometry.	**Mathematics: *Geometry*** **Kindergarten: *Geometry (Kindergarten CC standard met in SCCCS Grade 1)*** ***Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).*** G 1. Describe objects in the environment using names of shapes and describe the relative positions of these objects using terms such as above, below, besides, in front of, behind, and next to.

	G 2. Correctly name shapes regardless of their orientations or overall size. G 5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
Science Science standards are taught through observation and experience of our natural environment. Through nature stories and studies, seasonal changes, plants, beeswax modeling, and environmentally conscious practices, the children develop a sense of guardianship for the Earth and all of its inhabitants. For example, a nature story may narrate the adventure of a water droplet that traveled in the water cycle but told in such a way as to be appealing to a first grader. Although heating, cooling and atmospheric pressure are all elements of the story, the first grade student has the opportunity to take the information into their imaginations without it being overly technical. Through daily observations of the seasons, students understand that the weather changes from day to day and is predictable per season. They also know that weather can be observed, measured, and described. The senses become one of the keys to the observation of the natural world. First grade students will practice recall and analysis in their artistic work representing the nature stories and observations	**Science** Structure, Function, and Information Processing **1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.*** [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.] **1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.** [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).] ****NOTE: this standard will be met orally in 1st grade and further completed in 2nd grade and beyond **1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.** [Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.] [Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.] **Space Systems: Patterns and Cycles** **1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.** [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.] **1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.** [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] [Assessment Boundary: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.] Waves: Light and Sound **1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.** [Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can

Our place in the world, understanding directionality through observation. Gardening, and nature, observation, stories of nature teach students about their role in their environment and observation help instill independent thinking and sound judgment. Geography: Our place in the world, understanding directionality through observation.	make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.] **1-PS4-2. Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.** [Clarification Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.] **1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.** [Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.] **1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.*** [Clarification Statement: Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of drum beats.] [Assessment Boundary: Assessment does not include technological details for how communication devices work.] Engineering Design: **K–2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.** **K–2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** **K–2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.**

Sycamore Creek Community Charter School

Public Waldorf Inspired Curriculum Cross Articulation with California Aligned Common Core Standards and Next Generation Science Standards

GRADE 2

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	California Aligned Common Core Standards and Next Generation Science Standards
English Language Arts: *Reading Literature*	**English Language Arts: *Reading Literature***
Literature Aesop's Fables, Native American legends, American folklore, influential figures, inspirational stories, plays, poetry, nature stories, tales and animal fables from cultures around the world, reading (using context word recognition, reading out loud). **Stories-Shining Hearts** Kindness, courage, and generosity, the highest endeavors of human nature, are conveyed through the stories of heroes, who are revered	**Kindergarten: *Reading Literature (Kindergarten CC standard met in SCCCS Grade 2)*** ***Craft and Structure*** RL 4. Ask and answer questions about unknown words in a text. (See grade K Language standards 4-6 for additional expectations.) RL 6. With prompting and support, name the author and illustrator of a story and define the role of each in telling the story. ***Integration of Knowledge and Ideas*** RL 7. With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts.) ***Range of Reading and Level of Text Complexity*** RL 10. Actively engage in group reading activities with purpose and understanding.

as "Shining Hearts." Examples of these heroes and heroines are Mother Theresa, Gandhi, Abraham Lincoln, Martin Luther King Jr., and Jane Addams. The opposite tendencies of human nature such as greed, selfishness, and laziness are represented in the telling and re-enactment of Aesop's fables. The child sees light and dark, goodness and evil, mirrored in the examples from this core literature, which satisfies their developmental need to discern moral and ethical behavior from immoral and unethical acts.

Metaphor

In second grade, a greater understanding of word analysis and academic language is available to the child, and again storytelling and metaphor provide the framework for the Language Arts curriculum, as the teacher engages the students' avid interest through stories that support the social and emotional development of the 7-8-year-old child.

Reading

Reading Discovery is a highly organized reading program that pre-assesses and continuously re-assesses students for placement in flexible reading groups. Reading groups take place for 30 minutes a day, five days per week with ongoing evaluation and intervention. Each student is given book bags containing books at their reading level, which they take home

RL 10a. Activate prior knowledge related to the information and events in texts.
RL 10b. Use illustrations and context to make predictions about text.

Kindergarten: *Reading Informational Texts (Kindergarten CC standard met in SCCCS Grade 2)*

Craft and Structure

RI 5. Identify the front cover, back cover, and title page of a book.

Kindergarten: *Reading Foundational Skills (Kindergarten CC standard met in SCCCS Grade 2)*

Phonological Awareness

RFS 2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes).

RFS 2f. Blend two or three phonemes into recognizable words.

Phonics and Word Recognition

RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words (both in isolation and in text.)

RFS 3b. Associate the long and short sounds with the common spellings (graphemes) for the five major vowels. (Identify which letters represent the five major vowels (Aa, Ee, Ii, Oo, and Uu) and know the long and short sound of each vowel. More complex long vowel graphemes and spellings are targeted in the Grade 1 phonics standards.)

RFS 3c. Read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does).

RFS 3d. Distinguish between similarly spelled words by identifying the sounds of the letters that differ.

Fluency

RFS 4. Read emergent-reader texts with purpose and understanding.

Grade 1: *Reading Literature (First Grade CC standard met in SCCCS Grade 2)*

Key Ideas and Details

Monday through Thursday and read with an adult 20 minutes each evening. The adult fills out a simple information sheet to communicate with the teacher and on Friday the student brings the book bag back to school, so the teacher can read the parent notes and perform a weekly re-assessment of the student's reading level. Student fluency will increase with this regular practice of reading both aloud and silently every day. They gain a deeper understanding of word parts and syllabication with greater influence on phonics **Word Families, Phonics** Students also begin to read and respond to a variety of children's literature. Word families and phonemic awareness are further developed in second grade by strengthening the listening and speaking capacities of the child. The child recites weekly his or her birthday verse with the class and teacher as audience. Through daily reading practice, games and activities students gain understanding of antonyms and synonyms. They are asked to describe opposite and similar experiences with different words and details. **Whole Language Approach** Additionally, phonics is embedded in the whole language approach, where word analysis guides	RL 1. Ask and answer questions about key details in a text. (Begins at Gr. 1 with stories) ***Craft and Structure*** RL 4. Identify words and phrases in stories or poems that suggest feelings or appeal to the senses. *(See grade 2 Language standards 4-6 for additional expectations.)* *Integration of Knowledge and Ideas* RL 7. Use illustrations and details in a story to describe its characters, setting, or events. *Range of Reading and Level of Text Complexity* RL 10. With prompting and support, read prose and poetry of appropriate complexity for Grade 1. RL 10a. Activate prior knowledge related to the information and events in a text. RL 10b. Confirm predictions about what will happen next in a text. **Grade 1 ELA: *Reading Foundational Skills (First Grade CC standard met in SCCCS Grade 2)*** ***Phonological Awareness*** RFS 2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes). RFS 2a. Distinguish long from short vowel sounds in spoken single-syllable words. RFS 2d. Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes) ***Phonics and Word Recognition*** RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words *(*both in isolation and in text.) RFS 3c. Know final -e and common vowel team conventions for representing long vowel sounds. RFS 3d. Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word. RFS 3e. Decode two-syllable words following basic patterns by breaking the words into

children into decoding words before reconstructing them independently. The children gain a natural understanding and feeling experience of the English language through a personification of phonetic patterns	syllables. RFS 3f. Read words with inflectional endings. RFS 3g. Recognize and read grade-appropriate irregularly spelled words. ***Fluency*** RFS 4. Read with sufficient accuracy and fluency to support comprehension. RFS 4c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
and relationships. **Reading Fluency and Comprehension** By reading their own writing in their Main Lesson books, the children develop reading fluency and comprehension through recognition of and familiarity with their own hard work. Students gain a sense of purpose from further examination and clarification of the purpose of stories. They also practice comprehension by working to create alternate endings for some of the stories they work with. This becomes a gateway for further drama and written activity.	**ELA Grade 2: *Reading Literature (Second Grade CC standard met in SCCCS Grade 2)*** ***Key Ideas and Details*** RL 1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. RL 2. Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral. RL 3. Describe how characters in a story respond to major events and challenges. ***Craft and Structure*** RL 5. Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action. RL 6. Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud. **ELA Grade 2: *Reading Foundational Skills (Second Grade CC standard met in SCCCS Grade 2)*** RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words both in isolation and in text. CA RFS 3a. Distinguish long and short vowels when reading regularly spelled one-syllable words. RFS 3b. Know spelling-sound correspondences for additional common vowel teams.

	RFS 3c. Decode regularly spelled two-syllable words with long vowels.
English Language Arts Grade 2: *Writing* **Writing** Retelling in Main Lesson books, letters, narratives, observation recordings, teacher and self-generated paragraphs stories, and poetry. In second grade there is a focus on group generated summaries as models for writing. On a daily basis they will write a rough draft of the story they have heard. This is corrected and revised before they write the final version into their main lesson books. These narratives are accompanied by artistic descriptions of the	**ELA Grade 2: *Writing*** **Kindergarten: *Writing (Kindergarten CC standard met in SCCCS Grade 2)*** ***Text Types and Purposes*** W 2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. W 3. Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened. **Grade 1: *Writing (First Grade CC standard met in SCCCS Grade 2)*** W 3. Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. (Begins in Gr. 2, Met in Gr. 3)
story setting. Students are able to practice letter writing as it comes up in times of context to a particular holiday or celebration (letters to mom or grandma before Mother's Day, thank you notes after a birthday). Formal writing processes are learned in third grade; where students will gain the jargon for further development and growth in writing. All letters and writing activities arise out of a context that makes sense to a second grader. Students are able to print in both upper and lower case. By the end of second grade students will have begun cursive writing. This careful and hard work enables students to	**Grade 2: *Writing (Second Grade CC standard met in SCCCS Grade 2)*** ***Text Types and Purposes*** W 3. Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure. ***Production and Distribution of Writing*** W 5. With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.

produce legible, rewarding and beautiful work in their self-created main lesson books. **Grammar** Students also begin to identify and use elements of grammatical mechanics such as capitalization and punctuation. Reading instruction emphasizes writing as a gateway to unlocking the meaning and the sound-symbol relationships within words.	
English Language Arts: *Speaking & Listening* Students learn structural features when writing their own titles, chapters, and content. As stated above formal writing processes are learned in third grade; where students will gain the jargon for further development and growth in writing. Through daily reading practice, regular reflection and recitation students will gain understanding of how different words may sound the same but have different meanings. This year students also learn of secondary meanings of vocabulary. The teacher will help this by creating stories with these types of words. As questions arise students are introduced to available resources such as the dictionary and thesaurus as well as other resources designed to assist them as they practice writing and characterization of the stories they learn	**English Language Arts: *Speaking & Listening*** **English Language Arts Grade 2: *Speaking & Listening (Second Grade CC standard met in SCCCS Grade 2)*** ***Comprehension and Collaboration*** SL 1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups. SL 1a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). SL 1b. Build on others' talk in conversations by linking their comments to the remarks of others. SL 1c. Ask for clarification and further explanation as needed about the topics and texts under discussion. SL 2. Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

	SL 2a. Give and follow three- and four-step oral directions. CA SL 3. Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue. ***Presentation of Knowledge and Ideas*** SL 4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences. SL 5. Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (Audio recordings at Grade 7) SL 6. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 2 Language Standards 1 and 3 for specific expectations.)
English Language Arts: *Language*	**English Language Arts: *Language*** **Kindergarten: *Language (Kindergarten CC standard met in SCCCS Grade 2)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1c. Form regular plural nouns orally by adding /s/ or /es/ (e.g., dog, dogs; wish, wishes). L 1d. Understand and use question words (interrogatives) (e.g., who, what, where, when, why, how). L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. (Introduced in Grades 1 and 2, achieved increasingly) ***Vocabulary Acquisition and Use***

	L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on kindergarten reading and content. L 4a. Identify new meanings for familiar words and apply them accurately (e.g., knowing duck is a bird and learning the verb to duck). L 4b. Use the most frequently occurring inflections and affixes (e.g., -ed, -s, re-, un-, pre-, -ful, -less) as a clue to the meaning of an unknown word. L 5b. Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms). **Grade 1: *Language (First Grade CC standard met in SCCCS Grade 2)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Print all upper- and lowercase letters. (Lower case may be completed in Gr. 2) L 1f. Use frequently occurring adjectives. L 1g. Use frequently occurring conjunctions (e.g., *and, but, or, so, because*). L 1h. Use determiners (e.g., articles, demonstratives). L 1i. Use frequently occurring prepositions (e.g., *during, beyond, toward*). L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. (Introduced in grades 1 and 2, achieved increasingly) L 2a. Capitalize dates and names of people. L 2c. Use commas in dates and to separate single words in a series. L 2d. Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words. L 2e. Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions.

	Vocabulary Acquisition and Use L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 1 reading and content, choosing flexibly from an array of strategies. L 4b. Use frequently occurring affixes as a clue to the meaning of a word. L 4c. Identify frequently occurring root words (e.g., *look*) and their inflectional forms (e.g., *looks*, *looked*, *looking*).
	Grade 2: *Language (Second Grade CC standard met in SCCCS Grade 2)* ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. (Use in Gr. 2 and Identify in Gr. 3) L 1a. Use collective nouns (e.g., group). L 1b. Form and use frequently occurring irregular plural nouns (e.g., feet, children, teeth, mice, fish). L 1c. Use reflexive pronouns (e.g., myself, ourselves). L 1d. Form and use the past tense of frequently occurring irregular verbs (e.g., sat, hid, told). L 1e. Use adjectives and adverbs and choose between them depending on what is to be modified. L 1g. Create readable documents with legible print. L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2a. Capitalize holidays, product names, and geographic names. L 2b. Use commas in greetings and closings of letters. L 2c. Use an apostrophe to form contractions and frequently occurring possessives. (Introduced in Gr. 2)

	Knowledge of Language L 3. Use knowledge of language and its conventions when writing, speaking, reading, or listening. ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies. L 4a. Use sentence-level context as a clue to the meaning of a word or phrase. L 4b. Determine the meaning of the new word formed when a known prefix is added to a known word (e.g., happy/unhappy, tell/retell). L 4c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., addition, additional). L 4d. Use knowledge of the meaning of individual words to predict the meaning of compound words (e.g., birdhouse, lighthouse, housefly; bookshelf, notebook, bookmark). L 5. Demonstrate understanding of word relationships and nuances in word meanings. L 5a. Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy). L 5b. Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny). L 6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy that makes me happy).

Mathematics ***Introduction*** *Mathematics instruction in the second grade is an interwoven balance between daily oral math review and movement activities, direct instruction imbued with narrative, and informal and formal assessments. Students continue with the four operations of arithmetic, story problems, counting by 2,3, 4, 5, and 10, beginning multiplication tables, graphs and tables, place value to 100,000, mental math, regrouping, and estimation.*	**Mathematics**
Multiplication Table In games and practice, skip counting (by 2's, 3's, 4's, 5's, 10's to 100 forward and backward) strengthens basic multiplication and student's multiplication memorization. As they learn multiplication tables 1-5, and later 6-12 and their counterparts in division, students will connect to the subject kinesthetically by bouncing balls to create rhythm. They may also use step movements, clap or pass bean bags. Bean bags or other manipulatives will also be utilized to practice division. They will utilize rhythmic memory, product first, as they recite multiplication tables 1-5 Opportunities for mathematical practice arise in image rich stories that deepen the sense of	**Mathematics: *Counting and Cardinality*** **Kindergarten: *Counting and Cardinality (Kindergarten CC standard met in SCCCS Grade 2)*** ***Know number names and the count sequence.*** CC 2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1). (Begins in K; met in G2. 2)

numbers and how they relate to one another. These stories allow children to make a personal connection with the learning objectives and access a higher-level understanding and memorization of the concepts. A solid foundation of abstract and concrete measurement begins as children learn to answer questions related to data representation and comparisons.	
Place Value, Four Processes, Estimation, Probability Estimation and probability, place value and the four processes, as well as solving multi-digit number equations with carrying and borrowing, are all embedded in the thematic instruction incorporating hands-on manipulatives, movement, and graphic organizers in their Main Lesson books. Students will group and regroup numbers according to place value. Column addition and subtraction is introduced with regrouping from adjacent columns. Students will write vertical representations of problems. Students will be able to recognize numbers in expanded form (45 = 4 tens +5). Students are introduced to statements of equality and ordering. Students are told story problems imbedded with arithmetic operations. They will apply place value, column addition, subtraction as deemed necessary by the thematic stories. This	**Mathematics: *Operations and Algebraic Thinking*** **Grade 1: *Operations and Algebraic Thinking (First Grade CC standard met in SCCCS Grade 2)*** ***Represent and solve problems involving addition and subtraction.*** OAT 1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. OAT 2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. ***Understand and apply properties of operations and the relationship between addition and subtraction*** OAT 3. Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)* OAT 4. Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.* ***Work with addition and subtraction equations.*** OAT 7. Understand the meaning of the equal sign and determine if equations involving addition and

enables an affective component into arithmetic and places operations in context for a second grader. They will work mental arithmetic daily; demonstrating varied strategies including number grouping and regrouping, multiple additions, times tables, etc. As they gain confidence they will be asked to look out for patterns in arithmetic processes; and in regard to multiplication tables to notice quantities around them (pairs). Students increasingly demonstrate ability to	subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.* *OAT 7.1 Write and solve number sentences from problem situations that express relationships involving addition and subtraction within 20.* OAT 8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the* *equations 8 + ? = 11, 5 = □ – 3, 6 + 6 = □.*
work vertical addition and subtraction problems with double digit figures. Students carry digits in single and double digit addition. They will learn commutative laws and be able to check accuracy of addition. Students will write accurate vertical representations of dictated problems in addition, subtraction and multiplication. They will copy division problems with proper placement of divisor and dividend digits. Students will practice fractions in the context of nature and animal stories (bees dividing a field by the types of flowers each will gather from). They will practice money problems in the context of nature and hero stories. The symbols of the dollars and sense are employed. Students will practice with play money or manipulatives.	**Grade 2:** ***Operations and Algebraic Thinking (Second Grade CC standard met in SCCCS Grade 2)*** ***Represent and solve problems involving addition and subtraction.*** OAT 1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. ***Add and subtract within 20.*** OAT 2. Fluently add and subtract within 20 using mental strategies.[12] By end of Grade 2, know from memory all sums of two one-digit numbers. ***Work with equal groups of objects to gain foundations for multiplication.*** OAT 3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends. OAT 4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

1

This recollection of story problems and rote practice students will help students develop sequential memory skills. They will increasingly be able to solve problems using sequential order of operations.	
As described above students will be able to use commutative law to compose and decompose numbers. They will be able to use manipulatives in practice before illustrating this in their main lesson books. They will be able to demonstrate place value understanding. Students will be able to add and subtract in three digit columns and in mixed three, two and single digit columns. Students are told story problems imbedded with arithmetic operations. They will apply place value, column addition, subtraction as deemed necessary by the thematic stories. This enables an affective component into arithmetic and places operations in context for a second grader. They will work mental arithmetic daily; demonstrating varied strategies including number grouping and regrouping, multiple additions, times tables, etc. Through stories, illustrations and activities students will learn to identify odd and even	**Mathematics: *Number and Operations in Base Ten*** **Kindergarten: *Number and Operations in Base Ten (Kindergarten CC standard met in SCCCS Grade 2)*** ***Work with numbers 11-19 to gain foundations for place value.*** NOBT 1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. **Grade 1: *Number Operations in Base Ten (First Grade CC standard met in SCCCS Grade 2)*** ***Understand place value.*** NOBT 2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: NOBT 2a. 10 can be thought of as a bundle of ten ones — called a “ten.” NOBT 2b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. NOBT 2c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). NOBT 3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. (Introduced at Gr. 2, Met at Gr. 3) ***Use place value understanding and properties of operations to add and subtract.***

integers, number patterns and groups of numbers in categories.	NOBT 4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (Introduced at Gr. 2) Relate the strategy to a written method and explain the reasoning used. (Understanding place value, introduced at Gr. 2, Met in Gr. 3) Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. (Met in Gr. 2) NOBT 6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written method and explain the reasoning used. (Introduced at Gr. 2, met in Gr. 3) ***Use place value understanding and properties of operations to add and subtract.*** NOBT 5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (Begins at Gr. 2, met at Gr. 3) NOBT 6. Add up to four two-digit numbers using strategies based on place value and properties of operations. (Begins at Gr. 2, met at Gr. 3) NOBT 7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. NOBT 7.1 Use estimation strategies to make reasonable estimates in problem solving. (Begins at Gr. 2, met at Gr. 3) NOBT 8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. NOBT 9. Explain why addition and subtraction strategies work, using place value and the properties of operations.
Students handle objects in science and interpret the content of stories to learn	**Mathematics: *Measurement and Data***

measurements. When handling objects, students weigh, measure length, etc. From stories, students calculate variables as described. Students study time and its measurements. They become familiar with their own weekly and monthly class calendars. Students practice categorizing, quantifying and generalizing drawings of natural objects. They will sort objects via self-created taxonomies, tracking characteristics, and sketching a simple estimating fraction (pie chart or histogram) of the whole.	*Continue study began in Grade 1 ***Relate addition and subtraction to length.*** MD 6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.
In order to connect the kinesthetic aspect of learning, grade two students are often asked to physically draw or illustrate numbers, letter and shapes. Grade two students will use their bodies to experience circles, rectangles, triangles, etc. Students will also practice these shapes extensively in form drawing. They will work with manipulatives to understand how forms fit together. From this they will learn to order objects by length, size, and volume. Students will be able to draw symmetrical forms.	**Mathematics: *Geometry*** **Kindergarten: *Geometry (Kindergarten CC standard met in SCCCS Grade 2)*** ***Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).*** G 3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). (Begins in K) ***Analyze, compare, create, and compose shapes.*** G 6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?" (Begins in Gr. 1, Experiential through form drawing, Grade 2; Met in Grade 4) **Grade 1: *Geometry (Grade 1 CC standard met in SCCCS Grade 2)*** G 1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); (CC Standards introduced in Grade 1 through movement, manipulatives, art, form drawing, modeling, and concrete reasoning.) Build and draw shapes to possess defining attributes. G 2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape and compose new shapes from the composite

	shape. *(Students do not need to learn formal names such as "right rectangular prism.")* (CC Standards introduced in Grade 1 through movement, manipulatives, art, form drawing, modeling, and concrete reasoning.)
Science	**Science**
Science Second grade students will observe nature studies, life cycles presented through experience and story, observation and inquiry. Natural Cycles: The life and earth sciences are observed and studied through weekly nature walks and visits to the on-site gardens, all of which highlight the predictability of the different cycles and patterns in living things from plants and soils to animals and fossils. Nature Stories will present accurate information in an appealing way for the young student. The class Nature Table will represent a microcosm of fossils, plants, rocks and minerals for the students to handle and examine. They will practice considering the origins and physical similarities and differences.	
Environment Nature Studies, gardening, stories with themes of transformation teach the	Students who demonstrate understanding can: **2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.** [Clarification Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which

concept of evolution in an imaginative way to lay a foundation of metaphor for forces of nature to be scientifically examined later. Students will create artistic representations based upon the Nature Stories thematically introducing the lives of various animals, their behaviors, habitats and environments. Through imaginative play of the processes from the context of Nature Stories students will learn of erosion, weathering and the rock cycles of the Earth. Students will gain knowledge of the basic terminology of geography. They will practice artistic renderings of these elements in their Main Lesson books	occurs slowly.] [Assessment Boundary: Assessment does not include quantitative measurements of timescales.] **2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.*** [Clarification Statement: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.] **2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.** [Assessment Boundary: Assessment does not include quantitative scaling in models.] **2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.**
Movement, Spatial Dynamics The science curriculum standards in second grade begins with daily movement activities that incorporate the use of objects such as beanbags and balls. Spatial dynamics are explored through the observation and experience of the pushing and pulling forces, and how an object's motion can change through space and time.	**2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.** [Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.] **2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.*** [Clarification Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency.] [Assessment Boundary: Assessment of quantitative measurements is limited to length.]

	2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. [Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.] **2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.** [Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]
Investigation and Experimentation The second-grade nature table and garden plot are a space for seasonal experimentation and investigation of the students' interests. The children have the opportunity to help guide class inquiries with deeper scientific studies throughout the year. Here they will be able to draw, sort and measure objects. Students will grow plants and learn what happens when proper care is provided versus restricted. They will learn about light, gravity, touch, and environmental stress; and their effects on germination, growth and development. They will be able to identify changes and sequence them. The teacher will help students take note of other recurring and predictable patterns, such as the seasons	**2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.** [Assessment Boundary: Assessment is limited to testing one variable at a time.] **2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.*** Students who demonstrate understanding can: **2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.** [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.] **K–2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.** **K–2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** **K–2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.**

Reference: "Alliance for Public Waldorf Education Recommended Grade Level Placements of Common Core Standards In a Waldorf-Inspired Public School Program"

Revised: 9/4/2018

Sycamore Creek Community Charter School

Public Waldorf Inspired Curriculum Cross Articulation with California Aligned Common Core Standards and Next Generation Science Standards

GRADE 3

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	**California Aligned Common Core Standards and Next Generation Science Standards**
English Language Arts: *Reading* ***Introduction*** *In the third grade, the Language Arts curriculum is taught thematically through practical living and Hebrew Legends. Farming and practical skills are at the forefront, and thus class-wide literature reflects and supports this theme.* *Students engage in daily word games during dictation. Students spend time reviewing and building phonics skills as well as decoding/encoding text. Grammar, word choice and pacing are developed during the act of story retelling. During 3rd grade, choral and partner reading is introduced. Common Core Standards for Reading are embedded in the curriculum and assignments as they are created, implemented and refined through reflection.* S**trategies used to meet Common Core Standards for Reading Include: (With guidance and support from peers and adults)** Students read a variety of text type (e.g., poetry, plays, information text) and content. - Focus areas of study are Hebrew legends, Indigenous Americans, creation myths from around the world, literature on farming and pioneer life.	**English Language Arts: *Reading*** **Kindergarten: *Reading Literature (Kindergarten CC standard met in SCCCS Grade 3)*** ***Craft and Structure*** RL 5. Recognize common types of texts (e.g., storybooks, poems, fantasy, realistic text) **Kindergarten: *Reading Informational Texts (Kindergarten CC standard met in SCCCS Grade 3)*** ***Key Ideas and Details*** RI 1. With prompting and support, ask and answer questions about key details in a text. RI 2. With prompting and support, identify the main topic and retell key details of a text. RI 3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. ***Craft and Structure*** RI 4. With prompting and support, ask and answer questions about unknown words in a text. (See grade K Language standards 4-6 for additional expectations) RI 6. Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text. ***Integration of Knowledge and Ideas*** RI 7. With prompting and support, describe the relationships between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts.) *Range of Reading and Level of Text Complexity* RI 10. Actively engage in group reading activities with purpose and understanding. RI 10a. Activate prior knowledge related to the information and events in texts. RI 10b. Use illustrations and context to make predictions about text. **Grade 1: *Reading Literature (First Grade CC standard met in SCCCS Grade 3)*** ***Craft and Structure*** RL 4. Identify words and phrases in stories or poems that suggest feelings or appeal to the senses. *(See grade 2 Language standards 4-6 for additional expectations.)* (Note: Begins in Gr. 2.) RL 5. Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types. RL 6. Identify who is telling a story at various points in a text.

- Reading for different purposes is taught along with recitation. - Students use a large variety of children's literature in order to explore their newfound reading skills. - Students become familiar with the use of dictionaries to support their vocabulary studies. Sight words: 301-500 - Expectations move clearly from encoding to decoding independently by transferring the semantics and syntax found in their Main Lesson book writing and daily oral language to reading and comprehending grade level appropriate literature. - Ways of distinguishing the actions of text, and genre conventions (poetry, fiction, nonfiction) become recognizable to the children. Other activities used to meet Common Core Standards in all areas of Reading include: - Individual/group classwork - home practice - class /group discussions - individual/group/class projects based on reading material - Small reading groups - Creation of their main lesson book (which include illustrations and summaries of writing, reflective writing/illustrations)	**Grade 1: *Reading Informational Texts (First Grade CC standard met in SCCCS Grade 3)*** ***Key Ideas and Details*** RI 1. Ask and answer questions about key details in a text. RI 2. Identify the main topic and retell key details of a text. RI 3. Describe the connection between two individuals, events, ideas, or pieces of information in a text. ***Craft and Structure*** RI 4. Ask and answer questions to help determine or clarify the meaning of words or phrases in a text. *(See grade 1 Language standards 4-6 for additional expectations)* RI 6. Distinguish between information provided by pictures or other illustrations and information provided by the words in a text. ***Integration of Knowledge and Ideas*** RI 7. Use the illustrations and details in a text to describe its key ideas. *RI 9. Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).* ***Range of Reading and Level of Text Complexity*** RI 10. With prompting and support, read informational texts appropriately complex for grade 1. RI 10a. Activate prior knowledge related to the information and events in a text. RI 10 b. Confirm predictions about what will happen next in a text. **Grade 1: *Reading Foundational Skills (First Grade CC standard met in SCCCS Grade 3)*** ***Fluency*** RFS 4. Read with sufficient accuracy and fluency to support comprehension. RFS 4a. Read on-level text with purpose and understanding. RFS 4b. Read on-level text orally with accuracy, appropriate rate, and expression on successive readings. RFS 4c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary. (Note RFS 4a, 4b and 4c begin in Gr. 1). **Grade 2: *Reading Literature (Second Grade CC standard met in SCCCS Grade 3)*** ***Craft and Structure*** RL 4. Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song. (See grade 2 Language standards 4-6 for additional expectations.) ***Integration of Knowledge and Ideas*** RL 7. Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot. ***Range of Reading and Level of Text Complexity***

- Reading Logs - Book Reports (written and oral) provide opportunities for students to refine and master key standards from earlier grades and for their grade level.	RL 10. By the end of the year, read and comprehend literature, including stories and poetry, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range. **Grade 2: *Reading Informational Texts (Second Grade CC standard met in SCCCS Grade 3)*** ***Craft and Structure*** RI 4. Determine the meaning of words and phrases in a text relevant to a *grade 2 topic or subject area*. (See grade 2 Language standards 4-6 for additional expectations.) **Grade 2: *Reading Foundational Skills (Second Grade CC standard met in SCCCS Grade 3)*** ***Phonics and Word Recognition*** RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words both in isolation and in text. RFS 3d. Decode words with common prefixes and suffixes. RFS 3e. Identify words with inconsistent but common spelling-sound correspondences. RFS 3f. Recognize and read grade-appropriate irregularly spelled words. ***Fluency*** RFS 4. Read with sufficient accuracy and fluency to support comprehension. RFS 4a. Read on-level text with purpose and understanding. RFS 4b. Read on-level text orally with accuracy, appropriate rate, and expression on successive readings. RFS 4c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
	Grade 3: *Reading Literature (Third Grade CC standard met in SCCCS Grade 3)* ***Key Ideas and Details*** RL 1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. RL 2. Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text. RL 3. Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events. ***Craft and Structure*** RL 4. Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language. (See grade 3 Language standards 4-6 for additional expectations.) RL 5. Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections. (Note: RL 4 and RL 5 Met in Gr. 5) RL 6. Distinguish their own point of view from that of the narrator or those of the characters. (Note: Met in Gr. 4)

	Integration of Knowledge and Ideas RL 7. Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting). RL 8. (Not applicable to literature) RL 9. Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series). (Note: Met in Gr. 4) ***Range of Reading and Level of Text Complexity*** RL 10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2–3 text complexity band independently and proficiently. **Grade 3:** ***Reading Informational Texts (Third Grade CC standard met in SCCCS Grade 3)*** ***Key Ideas and Details*** RI 1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. RI 2. Determine the main idea of a text; recount the key details and explain how they support the main idea. (Note: RI 1 and RI 2 Met in Gr. 4, Introduced in Gr. 3) RI 3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (Note: Met in Gr. 6. Introduced in Gr. 3) ***Craft and Structure*** RI 4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 3 topic or subject area.* (See grade 3 Language standards 4-6 for additional expectations.) (Met in Gr 4. Introduced in Gr. 3) RI 5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently. (Met in Gr. 7. Text features Introduced in Gr. 4) RI 6. Distinguish their own point of view from that of the author of a text. (Note: Met in Gr. 4) ***Integration of Knowledge and Ideas*** RI 7. Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). RI 8. Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). RI 9. Compare and contrast the most important points and key details presented in two texts on the same topic. (Note: RI 8 and RI 9 met in Gr. 6) ***Range of Reading and Level of Text Complexity*** RI 10. By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently. (Note: Met in Gr. 4. Introduced in Gr. 3)

	Grade 3: *Reading Foundational Skills (Third Grade CC standard met in SCCCS Grade 3)* ***Print Concepts*** RFS1. Not in CC at Grade 3 ***Phonological Awareness*** RFS 2. Not in CC at Grade 3 ***Phonics and Word Recognition*** RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words both in isolation and in text. RFS 3a. Identify and know the meaning of the most common prefixes and derivational suffixes. RFS 3b. Decode words with common Latin suffixes. (Note: RFS 3a and 3b met in Gr. 4) RFS *3*c. Decode multi-syllable words. RFS 3d. Read grade-appropriate irregularly spelled words. ***Fluency*** RFS 4. Read with sufficient accuracy and fluency to support comprehension. RFS 4a. Read on-level text with purpose and understanding. RFS 4b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings. RFS 4c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
English Language Arts: *Writing* *Students in Grade 3 write every day. Students are required to copy writing correctly from the chalkboard, to write from dictation and to write on their own. A rough draft is written in their main lesson book. They receive support from their teacher during the revision process. The resulting work becomes their Main Lesson Book. Students place writing within decorative borders and write evenly on unlined pages in their main lesson books. The standards for neatness, clarity and content is high for assessment of the finished product. The students complete main lesson*	**English Language Arts: *Writing*** **Kindergarten: *Writing (Kindergarten CC standard met in SCCCS Grade 3)*** ***Text Types and Purposes*** W 1. Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is…). ***Production and Distribution of Writing*** W 5. With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed. ***Research to Build and Present Knowledge*** W 7. Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). **Grade 1: *Writing (First Grade CC standard met in SCCCS Grade 3)*** ***Text Types and Purposes*** W 1. Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.

books written in their own hand for every main lesson topic, (e.g.: Hebrew stories, Farming, American Indian Nations, Shelters, Clothing, Measurements of Time, Weight, Volume, and Spatial, etc.) These books not only allow the students to focus on their composition skills, but also on the practice of cursive writing and printing. Students write their own compositions and keep a weekly journal with emphasis placed on sentence structure, grammar, punctuation, capitalization and	W 2. Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure. W 3. Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. (Begins in Gr. 2.) ***Production and Distribution of Writing*** W 5. With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed. **Grade 2: Writing *(Second Grade CC standard met in SCCCS Grade 3)*** ***Text Types and Purposes*** W 2. Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section. ***Research to Build and Present Knowledge*** W 8. Recall information from experiences or gather information from provided sources to answer a question.
spelling skills. After oral presentations, many compositions describe and explain the stories that were recited. **Strategies used to meet Common Core Standards for Writing Include: (With guidance and support from peers and adults)** - Spelling, cursive writing and dictation - Capitalize geographical names, holidays, historical periods, and special events correctly. - Spell correctly one-syllable words that have blends, contractions, compounds, orthographic patterns (e.g., qu, consonant doubling, changing the ending of a word from -y to -ies when forming the plural), and common	**Grade 3: Writing *(Third Grade CC standard met in SCCCS Grade 3)*** ***Text Types and Purposes*** W 1. Write opinion pieces on topics or texts, supporting a point of view with reasons. W 1a. Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons. W 1b. Provide reasons that support the opinion. W 1c. Use linking words and phrases (e.g., *because, therefore, since, for example*) to connect opinion and reasons. W 1d. Provide a concluding statement or section. (Note: W 1, W 1a-1d met in Gr. 6. Introduced in Gr. 5) W 2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. W 2a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension. W 2b. Develop the topic with facts, definitions, and details. W 2c. Use linking words and phrases (e.g., *also, another, and, more, but*) to connect ideas within categories of information. W 2d. Provide a concluding statement or section. (Note: W 2, W 2a-2d all with guidance.) W 3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. W 3a. Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally. W 3b. Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences

homophones (e.g., hair-hare). - Arrange words in alphabetical order. Class activities such as blackboard - games and dictation, develop simple spelling skills for sight words, basic reading vocabulary words and word families. - Students keep a "spelling word" book where spelling and phonics are practiced. - Review blends, long vowel patterns, homophones, digraphs, prefixes, consonant +le, R-controlled, suffixes, diphthongs, ed, ing, plurals, comparatives, contractions. - Study of the elements of grammar, verbs(red), nouns (blue), adjectives (green) and adverbs (orange), spelling rules, vocabulary, synonyms, antonyms, compound words, and contractions - Fluency in sentence structure - Fluidity of writing (limited correction interruptions to enhance writing creativity) - Independent writing and development of paragraphs: including topic sentences, developed body with facts and details, reasons that support topic sentence, linking words, ending with a concluding sentence. - Stages of the writing process (e.g., prewriting, drafting, revising, editing successive versions).	and events or show the response of characters to situations. (Note: Met in Gr. 4) W 3c. Use temporal words and phrases to signal event order. W 3d. Provide a sense of closure. ***Production and Distribution of Writing*** W 4. With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.) W 5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 3.) (Met in Gr. 4. Introduced in Gr. 3) W 6. With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others. (Met in Gr. 7) ***Research to Build and Present Knowledge*** W 7. Conduct short research projects that build knowledge about a topic. W 8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. *(Met in Gr. 4. Digital at Gr. 7)* W 9. (Begins in grade 4) ***Range of Writing*** W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. *(Grade 4 Extended time; Grade 3 Shorter time.)*

- Report writing - Personal narratives - Compositions - Consideration of audience and purpose - Use of personal experience or new informational sourced to provide an answer to a question. - Write opinion pieces, with supporting facts, linking words and proper structure. - Write informative/explanatory texts, including illustrations - Generate simple letter using appropriate opening and closures: Include the date, proper salutation, body, closing, and signature. - Conduct short research projects that build on prior knowledge. - Write over short time frames for a range of subjects, purposes and audiences. - Oral Storytelling skills: write synopsis or assist in the writing of a synopsis	
English Language Arts: *Speaking & Listening* *Students participate in individual and group storytelling, poetry or other creative writing projects. These activities encourage individual expression and enjoyment. The ability to recall*	**English Language Arts: *Speaking & Listening*** **Grade 2: *Speaking and Listening (Second Grade CC standard met in SCCCS Grade 3)*** ***Presentation of Knowledge and Ideas*** SL 4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences. SL 4a. Plan and deliver a narrative presentation that: recounts a well-elaborated event, includes details, reflects a logical sequence, and provides a conclusion.
oral presentation both verbally and in writing is another focus area. Editing and technical expertise are not the main objectives but are	**Grade 3: *Speaking and Listening (Third Grade CC standard met in SCCCS Grade 3)*** ***Comprehension and Collaboration*** SL 1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own

learned through the revision process and peer and adult support. **Strategies used to meet Common Core Standards for Speaking and Listening Include:** - Given selected passages, students individually and chorally recite text with good articulation, meter, intonation and expression. Selected poems and passages are presented before audiences at assemblies. - Oral class reports are presented on content in the social studies and science curriculum, [e.g., farming, gardening, building, trades, Native Americans, local history etc.). - Given tongue twisters and sequences designed to pronounce specific sounds, students individually, and in small groups, perform exercises with clear diction and intonation. Students identify and isolate specific sounds. - Stories for the year include presentations from the Hebrew Bible and stories about farming, gardening, building, trades, and measurement. - Given an oral story, students independently and collaboratively write a synopsis of all, or part, of a story. Attention is paid to the inclusion of	clearly. SL 1a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. SL 1b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). SL 1c. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. SL 1d. Explain their own ideas and understanding in light of the discussion. SL 2. Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally. SL 3. Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. ***Presentation of Knowledge and Ideas*** SL 4. Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. SL 4a. Plan and deliver an informative/ explanatory presentation on a topic that: organizes ideas around major points of information, follows a logical sequence, includes supporting details, uses clear and specific vocabulary, and provides a strong conclusion. CA (Note: Met in Gr. 4) SL 5. Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. (Met in Gr. 7) SL 6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 3 Language standards 1 and 3 for specific expectations.)

correct sequence of action and support with appropriate details. - Given oral practice and stage directions, students perform plays before an audience (one per year). - Following oral presentations, students recall the main sequence and details of the story. This is continued and expanded into the areas of expository, narrative and letter writing. - Clarify and enhance oral presentations through the use of appropriate props (e.g., objects, pictures, charts). - Students are introduced to verbal dictations. Students are able to construct, orally dictated sentences with grade appropriate accuracy. These contain sight vocabulary as well as appropriate phonetically based spelling with word encoding tasks. - Make brief narrative presentations or report on a topic or text including the following guidelines: provide appropriate facts, descriptive details, context and is presented clearly with well-structured sentences. - Plan and present dramatic interpretations of experiences, stories, poems, or plays with elaboration, logical sequence, clear diction, pitch, tempo,	

and tone. - Engage in diverse, regular Collaborative Discussions (one-on-one, groups, teacher-led) which follow consistent guidelines: focused on grade level text/topics, build on others' ideas, clear self-expression, preparedness for participation, follow rules for discussions, asking of questions, focus, linking their comments to those of others, post-discussion reflection. - Respond to clarify question or details in complete sentences.	
English Language Arts: *Language* *Students will write and speak with a command of standard English conventions appropriate to this grade level. Students actively participate in class discussions in a respectful manner, honing their social skills. They will demonstrate their verbal skills and understanding by using clear, specific language to communicate ideas concerning the material being covered. Examples of topics: house building, farming and gardening. Students use appropriate grammar, word choice and phrasing while retelling the story. Through oral recitation of poetry, verses and regular practice of play performances, students develop diction, vocal clarity and spoken expression. Students*	**English Language Arts: *Language*** **Grade 1: *Language (First Grade CC standard met in SCCCS Grade 3)*** ***Conventions of Standard English*** L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2c. Use commas in dates and to separate single words in a series. (Introduced in Gr. 2). **ELA Grade 2: *Language (Second Grade CC standard met in SCCCS Grade 3)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. (Use in Gr. 2. Identify in Gr. 3.) L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2d. Generalize learned spelling patterns when writing words (e.g., cage → badge; boy → boil). L 2e. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings. ***Knowledge of Language*** L 3. Use knowledge of language and its conventions when writing, speaking, reading, or listening. L 3a. Compare formal and informal uses of English. ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based

perform the verses and plays at informal recitals for other classes and formal presentations (e.g., assemblies,	on *grade 2 reading and content*, choosing flexibly from an array of strategies. L 4e. Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases in all content areas. (Gr. 7 digital.)
festivals, class play] throughout the year. Students will recall and retell oral presentations or stories by highlighting the main sequence and details of the story on successive days. Stories are told every two to three days and are 15- to 20- minutes in length. Stories told daily are concluded in 2-3 day intervals. **Strategies used to meet Common Core Standards for Language Include:** Students learn and gain mastery of the English language and its conventions when writing, speaking, reading, or listening through: - Group and individual activities (e.g., storytelling and retelling) - Practice writing with peer and adult support. - Games and dictation in large and small groups - Individual and group performances (e.g., plays, poetry, recitals, formal presentations) - Creative writing projects - Students use a "spelling word" book where spelling and phonics are practiced. - Students will consult reference	**ELA Grade 3: *Language (Third Grade CC standard met in SCCCS Grades 2-3)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences. L 1b. Form and use regular and irregular plural nouns. L 1c. Use abstract nouns (e.g., *childhood*). L 1d. Form and use regular and irregular verbs. L 1e. Form and use the simple (e.g., *I walked; I walk; I will walk*) verb tenses. L 1f. Ensure subject-verb and pronoun- antecedent agreement. L 1g. Form and use comparative and superlative adjectives and adverbs and choose between them depending on what is to be modified. L 1h. Use coordinating and subordinating conjunctions. L 1i. Produce simple, compound, and complex sentences. (Note: L 1, L 1a-L1i Met in Gr. 4. Introduced and developed in Grades 2 and 3.) L 1j. Write legibly in cursive or joined italics, allowing margins and correct spacing between letters in a word and words in a sentence. L 1k. Use reciprocal pronouns correctly. L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2a. Capitalize appropriate words in titles. L 2b. Use commas in addresses. L 2c. Use commas and quotation marks in dialogue. L 2d. Form and use possessives. (L 2b-L 2d met in Gr. 4) L 2e. Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., *sitting, smiled, cries, happiness*). L 2f. Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words. L 2g. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings. ***Knowledge of Language*** L.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening, L 3a. Choose words and phrases for effect.

materials, including beginning glossaries and dictionaries, as needed to check and correct spellings and determine the meaning of unknown words/multiple-meaning words and phrases. - Critical Listening Skills and Response Skills continually challenged and improved during oral presentations. - Students will speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.	L 3b. Recognize and observe differences between the conventions of spoken and written standard English. ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. L 4a. Use sentence-level context as a clue to the meaning of a word or phrase. L 4b. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., *agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat*). L 4c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., *company, companion*). (Met in Gr. 4. Introduced at Gr. 3) L 4d. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases *in all content areas*. (Digital at Gr. 7) L 5. Demonstrate understanding of word relationships and nuances in word meanings. L 5a. Distinguish the literal and non-literal meanings of words and phrases in context (e.g., *take steps*). L 5b. Identify real-life connections between words and their use (e.g., describe people who are *friendly* or *helpful*). L 5c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., *knew, believed, suspected, heard, wondered*). (Met in Gr. 4) L 6. Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., *After dinner that night we went looking for them*).
Mathematics ***Introduction*** *Students practice mental arithmetic daily for 5 to 10 minutes at the start of the day. They practice arithmetical operations 3 days a week,*	**Mathematics: *Operations and Algebraic Thinking*** **Grade 2: *Operations and Algebraic Thinking (Grade 2 CC standard met in SCCCS Grade 3)*** ***Represent and solve problems involving addition and subtraction.*** OAT 1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (Begins at Gr. 2.)

50 minutes each day. An example of Math main lesson blocks is one focused on Measurement which is broken into to 5 weeks intensive study, 2 hrs. per day, 5 days per week. All mathematical topics are fully integrated with applications in science and history. *Direct instruction creates a bridge between hands-on practical activities and mastery of Main Lesson book objectives based upon the state standards. Students learn multi-digit multiplication, and practice higher multiplication tables through twelve, long division with remainders, and the commutative and associative properties of multiplication and division. Students are also introduced to weight; measure; length; volume; money; time; and place value.* Third grade mathematics concepts are further supported through whole-body movement activities, music, storytelling, and use of adopted state curriculum resources. Students deepen their understanding of place value and estimation and begin to use generalization and probability to understand real-world numerical puzzles. **Strategies used to meet Common Core Standards for Operations and Algebraic Thinking Include:** - Word problems involving addition, subtraction, multiplication and division.	**Grade 3: *Operations and Algebraic Thinking (Grade 3 CC standard met in SCCCS Grade 2)*** ***Represent and solve problems involving multiplication and division.*** OAT 1. Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as* 5 × 7. OAT 2. Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56÷8.* OAT 3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. OAT 4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = □ ÷ 3, 6 × 6 = ?. ***Understand properties of multiplication and the relationship between multiplication and division.*** OAT 5. Apply properties of operations as strategies to multiply and divide. *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)* OAT 6. Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.* ***Multiply and divide within 100.*** OAT 7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. ***Solve problems involving the four operations and identify and explain patterns in arithmetic.*** OAT 8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. OAT 9. Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

- Whole-body movement. - Hands-on project based learning - Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationships. - Students will record learning and graph as appropriate in their Main Lesson Books. Students will explain in writing and orally the relationships between different operations	
Strategies used to meet Common Core Standards for Number and Operations in Base Ten Include: - Students will demonstrate ability to copy or write orally dictated problems, place numbers in proper alignment, and proper placement of process signs. - Problem-solving activities and word problems where students must show they understand the place value of whole number and relationship between place values in the base ten systems. - Whole Numbers: Count, read, write compare and order whole numbers - Identify the place value for each digit in numbers - Round off numbers to 10,000 to the	**Mathematics: *Number and Operations in Base Ten*** **Grade 1: *Number and Operations in Base Ten (Grade 1 CC standard met in SCCCS Grade 3)*** ***Understand place value.*** NOBT 3. Compare two two-digit numbers based on meanings of the tens and one's digits, recording the results of comparisons with the symbols >, =, and <. (Introduced at Gr. 2) ***Use place value understanding and properties of operations to add and subtract.*** NOBT 4. Relate the strategy to a written method and explain the reasoning used. NOBT 6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written method and explain the reasoning used. (Introduced at Gr. 2.) **Grade 2: *Number and Operations in Base Ten (Grade 2 CC standard met in SCCCS Grade 3)*** ***Use place value understanding and properties of operations to add and subtract.*** NOBT 5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. NOBT 6. Add up to four two-digit numbers using strategies based on place value and properties of operations. NOBT 7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

nearest ten, hundred, and thousand	NOBT 7.1 Use estimation strategies to make reasonable estimates in problem solving. (NOBT 5, NOBT 6 and NOBT 7 Begin at Gr. 2.)
- Use expanded notation to represent numbers. - Students calculate and solve problems involving borrowing, carrying (regrouping) addition, subtraction, multiplication, and division. - Multiplication table memorize to automaticity (grade level). - Use the inverse relationship of multiplication and division to compute and check results. - Students practice multiplication with double and triple digit operations; and long division with single-digit divisors, double- and triple-digit dividends and remainders. - Students memorize multiplication tables for numbers 2 through 12 and they use “skip counting" to recite rhythmically the "tables". - Students learn to check their own and other students' solutions by using inverse processes (e.g. checking addition with subtraction, or checking division with multiplication, or vice versa). - Students will show understanding of the relationship between whole numbers,	**Grade 3: *Number and Operations in Base Ten (Grade 3 CC standard met in SCCCS Grade 3)*** ***Use place value understanding and properties of operations to perform multi-digit arithmetic.*** NOBT 1. Use place value understanding to round whole numbers to the nearest 10 or 100. NOBT 2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. NOBT 3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. **Grade 3: *Number and Operations—Fractions (Grade 3 CC standard met in SCCCS Grade 3)*** ***Develop understanding of fractions as numbers.*** NOF 1. Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*. NOF 2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. NOF 2a. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. NOF 2b. Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line. NOF 3. Explain equivalence of fractions in special cases and compare fractions by reasoning about their size. NOF 3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. NOF 3b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. NOF 3c. Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram. NOF 3d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. (NOF 1-NOF 3d are all met in Gr. 4)

simple fractions, and decimals through completion of class activities and problem-solving work. - Students will represent fractions on number lines through illustrations in their Main Lesson Book. - Students apply simple fractions and decimals to practical real-life situations (house building, time-telling, recipe cooking, bake sales). - Students will compare fractions represented by drawings or concrete materials to show lemonade stands, handcrafts). - Students will add and subtract simple fractions in context by solving money problems. - Students will use rulers and tape measures to assist with fractions and decimal measurements. - Explain in writing and orally that fractions and decimals are two different representations of the same concept.	
In the main lesson block World of Measure, students learn English and metric units of measure and apply this knowledge to solve oral and written measurement problems. **Strategies used to meet Common Core Standards for Measurement and Data Include:**	**Mathematics: *Measurement and Data*** **Grade 1: *Measurement and Data (Grade 1 CC standard met in SCCCS Grade 3)*** ***Measure lengths indirectly and by iterating length units.*** MD 2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; Understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

- In practice, students weigh and measure many objects; they determine perimeters, and find the volumes of liquids held in various containers, etc. - Students learn the history of measurement of time. They make devices such as a sundial, water clock, or sand timer. - Students will master the ability to tell and write time using both analog and digital clocks and solve word problems related to these concepts. - The origins of other measurements techniques are presented orally and practically.	MD 3. Tell and write time in hours and half-hours using analog and digital clocks. MD 4. Organize, represent, and interpret data with up to three categories. Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. (Introduced in Grade 1 with manipulatives.) **Grade 2: *Measurement and Data (Grade 2 CC standard met in SCCCS Grade 3)*** ***Measure and estimate lengths in standard units.*** MD 1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. MD 2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. MD 3. Estimate lengths using units of inches, feet, centimeters, and meters. MD 4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard-length unit ***Work with time and money.*** MD 7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. **Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). CA** MD 8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*
- Students will study and perform tasks and word problems related to money and money problems. - In a study of farming and housing, students are required to cost the price of a garden or building project using unit prices, subtotal, and final tally - of all expenses expressed in dollars and cents. This simple functional exercise applies all of arithmetic skills. - Students choose and use appropriate units (focusing on U.S. measurements at this grade) and measurement tools to quantify the properties of objects. - Students will have activities where they	**Grade 3: *Measurement and Data (Grade 3 CC standard met in SCCCS Grade 3)*** ***Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.*** MD 1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. MD 2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (Met in Gr. 5. In grade 3, using standard American measures; the metric system studied in grade 5) ***Represent and interpret data.*** MD 3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.* MD 4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

must estimate and measure the length, liquid volume, weight/mass, and area of given objects. - Students will estimate or determine the area and volume of solid figures by covering them with squares or by counting the number of cubes that would fill them. - Carry out simple unit conversions within a system of measurement (e.g., centimeters and meters, hours and minutes). - Drawings/illustrations/graphs related to standards will be completed in their Main Lesson Books.	***Geometric measurement: understand concepts of area and relate area to multiplication and to addition.*** MD 5. Recognize area as an attribute of plane figures and understand concepts of area measurement. a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units. (Met in Gr. 4. Introduced in Gr. 3) MD 6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). MD 7. Relate area to the operations of multiplication and addition. MD 7a. Find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths. MD 7b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning. MD 7c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning. MD 7d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. (MD 6, MD 7-MD7d met in Gr. 4) ***Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.*** MD 8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. (Met in Gr. 8)
Students' study of geometry is integrated with science as students design and plant a garden or build a shed. **Strategies used to meet Common Core Standards for Geometry Include:** - Integration of Geometry with Science as students design and plant a garden or build a shed. - Angles, shapes and 2-and three-	**Mathematics: *Geometry*** **Kindergarten: *Geometry (Kindergarten CC standard met in SCCCS Grade 3)*** ***Analyze, compare, create, and compose shapes.*** G 4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). (Begins in Gr.1). **Grade 2: *Geometry (Grade 2 CC standard met in SCCCS Grade 3)*** ***Reason with shapes and their attributes.*** G 2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

dimensional shapes are discussed in a context of construction of both shed/garden, garden layout, and measurable planters. - Variable angles are found in relation to the daily and seasonal arcs of sun and moon. - Students identify many angles they can make with their bodies. - Plane geometric figures are identified in architectural structures (e.g. triangles in the pitch and framing of roofs, rectangles in walls, pyramids in roofs, rectangular solids in construction materials, etc.). - This inquiry is elaborated as students identify more unusual shapes in the design of buildings. - Origami is also used to describe and see geometric relationships.	**Grade 3: *Geometry (Grade 3 CC standard met in SCCCS Grade 3)*** ***Reason with shapes and their attributes.*** G 1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. (Note: Met in Gr. 5) G. 2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape. (Met in Gr. 4)
Science ***Introduction*** *The content of the third-grade science curriculum lends itself to internalizing the natural processes of the physical and life sciences within the children's environment. A primary topic is the transformation of energy and matter in naturally occurring cycles. Farming/gardening, ecosystems, fibers, building,*	**Science**

soil, compost, earthworms, silkworms, cotton, wool, seeds, the Moon and Sun.	
Solar/Lunar Cycles, Water Cycle, Weather Patterns Students study and understand the solar and lunar cycles with respect to their gardening, as well as water cycles and weather patterns. Sunlight is transferred into warmth, the effect of its absence. They learn of the changes of state; such as condensation/evaporation, freezing/melting, sublimation/deposition. Through their study of the building of primitive structures they learn how weather effects produce needs for resistant roofs etc. Students will get to build sundials and study shadow and light as well as the historical context of their use. Students will also learn about solar and lunar calendars. Through gardening and outdoor exploration students will observe color, light and shadow. Through watercolor paintings and shaded drawings, they will experience it. Students will also take note of seasonal changes and the altitude of the sun and its shadows during nature walks. In regard to farming, students learn of astrological phenomena (rotation of the earth to time, moon cycle on water, solstice and equinoctial). They learn that the orbit and tit of the sun creates our seasons. From this knowledge of seasonal cycles they will plan their gardening accordingly.	**3-ESS2-1.** **Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.** [Clarification Statement: Examples of data could include average temperature, precipitation, and wind direction.] [Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change.] **3-ESS2-2.** **Obtain and combine information to describe climates in different regions of the world.** **3-ESS3-1.** **Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.*** [Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lighting rods.]

Through their study of the building of primitive structures they learn how weather effects produce needs for resistant roofs etc.	
Gardening/Botanical Experiments By creating and comparing botanical experiments in the school garden and class kitchens, the importance of asking meaningful questions is explored and they are given opportunities to give back to their school community. They learn that the cyclical processes observed in the weather and in their gardening work are also at play inside them. Students learn about their metabolisms, the fuel that is best for them and more about their sleep needs. They learn how food has energy stored but though digestion they are able to utilize that energy for their needs. The teacher would lead a discussion about soil composting to one of the composition of matter, gaining introduction to atoms, the chemical elements, and molecules.	**3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles, but all have in common birth, growth, reproduction, and death.** [Clarification Statement: Changes organisms go through during their life form a pattern.] [Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.] **3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.** [Clarification Statement: Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.] [Assessment Boundary: Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.] **3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.** [Clarification Statement: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight.]
Heat Energy, Weight and Volume, Solids, Liquids, Gases Their hard work and careful investigations are rewarded with produce and meals to enjoy and share with others while offering students a deep understanding of energy and fuel from a nutritional standpoint. Regular cooking as part of the practical arts curriculum offers students a chance to measure, weigh, and observe the qualities of ingredients (melting, liquid, solid). Students are also able to benefit from the observation of the transformation of cooked and baked foods. Furthermore, through the	**3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.** [Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.] [Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.] **3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.** [Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.] [Assessment Boundary: Assessment does not include technical terms such as period and frequency.]

development of models of structures and/or actual dwellings the students learn about and investigate the effects of balancing forces use of magnetic force through focusing on design problems through the process. Students will make predictions for their plants, sundial shadows as well as practice data collection.	**3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.** [Clarification Statement: Examples of an electric force could include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.] [Assessment Boundary: Assessment is limited to forces produced by objects that can be manipulated by students, and electrical interactions are limited to static electricity.] **3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.*** [Clarification Statement: Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.]
Dwellings and Farming Life Students will study the cultural history of food, farming methods and dwellings worldwide. They will expand their knowledge of the primary environments that give cause for variation of plant, animals and dwellings. They will learn of the former inhabitants as well. Students learn through working together how to create primitive dwellings. Drawing, models, and experiential activities give the students a deeper understanding of materials, time and/or cost for design problems. At least one field trip is taken to a local farm, where the children participate in the activities of farm life from weeding to harvesting and caring for the farm animals. An emphasis on learning about sustainability and	**Students who demonstrate understanding can:** **3–5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.** **3–5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.** **3–5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.**

different farming methods such as aquaponics is part of the curriculum. Students will study the cultural history of food, farming methods and dwellings worldwide. They will expand their knowledge of the primary environments that give cause for variation of plant, animals and dwellings. They will learn of the former inhabitants as well.	
Environment Observations on school grounds through walks or nature walks (if available), gardening, stewardship, primitive skills, shelter building, creation myths from different cultures about the origins of the earth and human beings prime the mind of the children to think of the whole world as a single holistic environment. Nature stories, Gardening and farming curriculum reinforces lessons about nature and the seasons. Students will learn about relationships among plants and adaptation in relationship to the various environments and changes around the world. Students will learn about environmental stresses and what they can do to convalesce it.	**3-LS2-1. Construct an argument that some animals form groups that help members survive.** **3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.** [Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.] **3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.** [Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.] **3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.** [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.] **3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.*** [Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.] [Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.]

Sycamore Creek Community Charter School

Public Waldorf Inspired Curriculum Cross Articulation with California Aligned Common Core Standards and Next Generation Science Standards

GRADE 4

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	California Aligned Common Core Standards and Next Generation Science Standards
English Language Arts: *Reading* ***Introduction*** *The fourth-grade focus on citizenship, perseverance, problem solving, industry, and craftsmanship guides the literacy and language arts emphasizes. Students move from the law-driven culture of the Hebrews to the coarse rough-and-ready world of the Norse myths. Along with the enrichment of the core literature of the Norse myths, written reports begin.* *The selections of literature in all grades illustrate the quality and complexity of the materials to be read by students. In addition to their regular school reading, students read one half million words annually, including a good representation of grade-level appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information)*	**English Language Arts: *Reading*** **Kindergarten: *Reading Literature (Kindergarten CC standard met in SCCCS Grade 4)*** ***Integration of Knowledge and Ideas*** RL 9. With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories. **Kindergarten: Reading Informational Texts *(Kindergarten CC standard met in SCCCS Grade 4)*** ***Integration of Knowledge and Ideas*** RI 8. With prompting and support, identify the reasons an author gives to support points in a text. RI 9. With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures). **Grade 1: *Reading Literature (Grade 1 CC standard met in SCCCS Grade 4)*** ***Integration of Knowledge and Ideas*** RL 9. Compare and contrast the adventures and experiences of characters in stories. **Grade 1: Reading Informational Texts *(Grade 1 CC standard met in SCCCS Grade 4)*** ***Craft and Structure*** RI 5. Know and use various text structures (e.g., sequence) and text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.

Strategies used to meet Common Core Standards for Reading Include: (With guidance and support from peers and adults)	***Integration of Knowledge and Ideas*** RI 8. Identify the reasons an author gives to support points in a text. **Grade 2: Reading Literature *(Grade 2 CC standard met in SCCCS Grade 4)*** ***Integration of Knowledge and Ideas*** RL 9. Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures. **Grade 2: Reading Informational Texts *(Grade 2 CC standard met in SCCCS Grade 4)*** ***Key Ideas and Details*** RI 1. Ask and answer such questions as *who, what, where, when, why,* and *how* to demonstrate understanding of key details in a text. RI 2. Identify the main topic of a multi-paragraph text as well as the focus of specific paragraphs within the text RI 3. Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. ***Craft and Structure*** RI 5. Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently. RI 6. Identify the main purpose of a text, including what the author wants to answer, explain, or describe. ***Integration of Knowledge and Ideas*** RI 7. Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text. ***Range of Reading and Level of Text Complexity*** RI 10. By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range. **Grade 3: *Reading Literature (Grade 3 CC standard met in SCCCS Grade 4)*** ***Craft and Structure*** RL 6. Distinguish their own point of view from that of the narrator or those of the characters. RL 9. Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series). **Grade 3: *Reading Informational Texts (Grade 3 CC standard met in SCCCS Grade 4)*** ***Key Ideas and Details*** RI 1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. RI 2. Determine the main idea of a text; recount the key details and explain how they support the main idea. (Note: RI 1 and RI 2 Introduced in Gr. 3.)
- Students study Norse Mythology, historical fiction based on California history, animal poems and stories and poetry. - Activities that accompany these readings include: Individual and group speech/presentations, play reading, fluency work with class readers. - Reading comprehension is further developed through reading core literature books in differentiated reading groups that align with our blocks of Norse myths, California history, and animal/man. - Regular reading literary responses and analysis through book reports and reading assignments relevant to the curriculum are assigned and assessed via rubrics and authentic assessment of oral presentation throughout the year. - These assignments are the beginning of literary fluency, response and analysis, which encourages understanding of the structural features of literature and the narrative analysis of grade-level-appropriate text. - Oral and choral reading for development of: word recognition skills, word attack skills, comprehension, fluency, intonation and expression. This work is evaluated in specific written exercises. - Students review phonetic sounds for letter combinations and word attack skills.	

- Students increasingly memorize sight words. Vocabulary is developed through an interdisciplinary approach in all subject areas. - Through riddles and games, students are made aware of homographs and homophones and learn to discriminate their usage. - Student assignments focus on their increasing ability to decode and encode more complex word structures and apply phonics-based rules. - Vocabulary is taught in a holistic context. Explanations and clarifications of words take place orally and in writing. Students are required	***Craft and Structure*** RI 4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 3 topic or subject area.* (See grade 3 Language standards 4-6 for additional expectations.) (RI 4 Introduced in Gr. 3.) RI 6. Distinguish their own point of view from that of the author of a text. ***Range of Reading and Level of Text Complexity*** RI 10. By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently. (RI 10 Introduced in Gr. 3.) **Grade 3: *Reading Foundational Skills (Grade 3 CC standard met in SCCCS Grade 4)*** ***Phonics and Word Recognition*** RFS 3a. Identify and know the meaning of the most common prefixes and derivational suffixes. RFS 3b. Decode words with common Latin suffixes.
- to indicate understanding of vocabulary words through written and oral exercises. - Students display consistent recall of words previously learned and these words provide information for contextual cues for comprehension of materials and accurate "guessing" and decoding skills in deciphering further linked reading material. - Students are familiarized with synonyms and antonyms and are introduced to the Thesaurus. - Assignments/activities work toward student demonstration of reading fluency, enthusiasm for story and genre, search for word correspondences, attention to the written word, and visual tracking skills necessary for information gathering. - Students read and understand grade-level-	**Grade 4: Reading Literature *(Grade 4 CC standard met in SCCCS Grade 4)*** ***Key Ideas and Details*** RL 1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. RL 2. Determine a theme of a story, drama, or poem from details in the text; summarize the text. RL 3. Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions). ***Craft and Structure*** RL 4. Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean). (See grade 4 Language standards 4-6 for additional expectations.) ***Integration of Knowledge and Ideas*** RL 5. Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text. (K RL 9) (1 RL 9) RL 6. Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations. (2 RL 9) RL 7. Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text. (e.g., in books in a series). (3 RL 9)

appropriate material. They draw upon a variety of comprehension strategies as needed (e.g., generating and responding to essential questions, making predictions, comparing information from several sources). - Book reports are completed from books that are read in a group or individually. Children are asked to re-create part of the story, give opinions and create a desire to read/not read this book. - Recreational reading is required and encouraged through book reports and in silent reading times during school hours. Teacher-guided discussions with individual students about their books take place. Juvenile novels are the focus of this reading, giving students some choice in their reading material with guidance from the teacher. - In reading assignments/reports students are required to Identify structural patterns found in informational text (e.g., compare and contrast, cause and effect, sequential or chronological order, proposition and support) to strengthen comprehension. - Students will engage in the following activities: Evaluate new information and hypotheses by testing them against known information and ideas, compare and contrast information on the same topic after reading several passages and distinguish between cause and effect and between fact and opinion in expository text. - Students skills developed through these activities	***Range of Reading and Level of Text Complexity*** RL 8. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. (4 RL 10) RL 9. Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures. (RL 7 and RL 9 met in Gr. 6) RL 10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. **Grade 4: *Reading Informational Texts (Grade 4 CC standard met in SCCCS Grade 4)*** ***Key Ideas and Details*** RI 1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. RI 2. Determine the main idea of a text and explain how it is supported by key details; summarize the text. RI 3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. ***Craft and Structure*** RI 4. Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area*. (See grade 4 Language standards 4-6 for additional expectations.) CA RI 5. Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text. RI 6. Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided. (RI 5 and RI 6 met in Gr. 6) ***Integration of Knowledge and Ideas*** RI 7. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears. (Not in electronic or digital formats.) RI 8. Explain how an author uses reasons and evidence to support particular points in a text. (RI 7 and RI 8 met in Gr. 6) RI 9. Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably. ***Range of Reading and Level of Text Complexity*** RI 10. By the end of year, read and comprehend informational texts, including history/social

include: appropriate strategies when reading for different purposes (e.g., full comprehension, location of information, personal enjoyment). - Assignments will require students to follow multiple step instruction provided from print media, such as how to follow a recipe, or build a model or playhouse. - Prediction skills are practiced through evaluation of the text itself, including illustrations, titles, topic sentences, important words, and foreshadowing clues. - Students read and respond to a wide variety of significant works of children's With the richness of the literary material (e.g. Beowulf, the Kalevala, and literature. They distinguish between the structural features of the text and the Norse Mythology) students come to recognize literary archetypes and literary terms or elements (e.g., theme, plot, setting, characters). - Students select reading material and silently read for a sustained length of time (30+ minutes). - Assignments will require students to describe the structural differences of various imaginative forms of literature, including fantasies, fables, myths, legends, and fairy tales. - Students recreate story plot by dramatization and illustration. - Students study both figurative language and metaphors. motivations to determine the causes for that character's actions.	studies, science, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. **Grade 4: *Reading Foundational Skills (Grade 4 CC standard met in SCCCS Grade 4)*** ***Print Concepts*** RFS1. Not in CC at Grade 4 ***Phonological Awareness*** RFS 2. Not in CC at Grade 4 ***Phonics and Word Recognition*** RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words. RFS 3a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context. ***Fluency*** RFS 4. Read with sufficient accuracy and fluency to support comprehension. RFS 4a. Read on-level text with purpose and understanding. RFS 4b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings. RFS 4c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

- Students will compare and contrast tales from different cultures by tracing the exploits of one character type and develop theories to account for similar tales in diverse cultures (e.g., trickster tales). - Students will define figurative language (e.g., simile, metaphor, hyperbole, personification) and identify its use in literary works.	
English Language Arts: *Writing* *Students in 4th grade are writing every day. Students write in their main lesson book that is revised with help from the teacher. This progresses through the stages of the writing process (e.g., prewriting, drafting, and revisions, which are neatly completed in their main lesson book). Main lesson books are judged upon neatness as well as content. The students complete main lesson books written in their own hand for every main lesson topic (e.g., Local and California History and Geography; the study of the Animal Kingdom; Beowulf, Norse Mythology, Kalevala, etc.) These books not only focus on the student's composition skills, but much attention is given to the practice of cursive writing as well as printing. Students place written materials within borders and write horizontally on an unlined page as in the main lesson book.* *The teacher poses topics for composition in a variety of ways (e.g., chronological ordering of events, the causes for the arising of a situation, comparison and contrast, summarization, answer an implicit question, creative writing, etc.)..Fluidity of writing at this stage is stressed more so than technical expertise. Students are*	**English Language Arts: *Writing*** **Grade 1: *Writing (Grade 1 CC standard met in SCCCS Grade 4)*** ***Research to Build and Present Knowledge*** W 7. Participate in shared research and writing projects (e.g., explore a number of "how-to" books on a given topic and use them to write a sequence of instructions). **Grade 2: *Writing (Grade 2 CC standard met in SCCCS Grade 4)*** ***Text Types and Purposes*** W 1. Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., *because, and, also*) to connect opinion and reasons, and provide a concluding statement or section. ***Production and Distribution of Writing*** W 4. With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.) W 7. Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). *(Note: Experience-based in Gr. 3 Text-based in Gr. 4)* ***Range of Writing*** W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. (For CC, Begins in Grade 3. Begins in Grade 2—CA) **Grade 3: *Writing (Grade 3 CC standard met in SCCCS Grade 4)*** ***Text Types and Purposes*** W 3b. Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.

encouraged to write, and correction is provided in a manner designed not to interrupt the creative activity. *In science, students complete library research. They present, both verbally and through expository writing, a report of a particular animal and its habitat.*	W 5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 3.) (W 5 Introduced in Gr. 3.) W 8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (Digital at Gr. 7.) W 9. (Begins in grade 4) ***Range of Writing*** W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. (Grade 4 Extended time, Grade 3 Shorter time.)
Students are involved in dramatization of animal tales and participate in creative writing concerning the animal kingdom and California history. *Writing skills are further developed through activities which address: grammar, spelling, sentence and paragraph structure, use of dictionaries, reading comprehension, vocabulary, and punctuation. Students will see an increase in rigor and length of writing assignments such as book reports and research writing.* **Strategies used to meet Common Core Standards for Writing Include:** Examples: - Multi-paragraph narrative/descriptive essays - Dictation - Book reports - Creative writing (e.g. poems and stories) - Cursive writing - Research writing - Opinion Pieces - Informative/Explanatory texts - Write information reports: a)	**Grade 4: *Writing (Grade 4 CC standard met in SCCCS Grade 4)*** W 1. Write opinion pieces on topics or texts, supporting a point of view with reasons and information. W 1a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose. W 1b. Provide reasons that are supported by facts and details. W 1c. Link opinion and reasons using words and phrases (e.g., *for instance, in order to, in addition*). W 1 d. Provide a concluding statement or section related to the opinion presented. (W 1, W 1a, W 1b, W 1c, W 1 d met in Gr. 6 and introduced in Gr. 5) W 2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. W 2a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. W 2b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. W 2c. Link ideas within categories of information using words and phrases (e.g., *another, for example, also, because*). W 2d. Use precise language and domain-specific vocabulary to inform about or explain the topic. W 2e. Provide a concluding statement or section related to the information or explanation presented. W 3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. W 3a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.

Frame a central question about an issue or situation. b) Include facts and details for focus. c) Draw from more than one source of information (e.g., speakers, books, newspapers, other media sources). - Reading literary responses and analysis - Written presentations - Narrative writing - Summary writing that contains: main ideas and significant details. - Written Presentations - Writing activities in main lesson books and other assignments support student acquisition of grammar and spelling, using a dictionary, reading comprehension, vocabulary, punctuation. - Students proofread written material and self-edit for spelling, punctuation and capitalization errors. Students then rewrite material for a final copy. - Students are able to self-edit in order to add details to support clarity and rewrite for clearer meaning or efficiency. - Work is assigned and assessed via rubrics and authentic assessment of oral presentation throughout the year. Rubrics assess clarity , content, paragraph organization, appropriate to task, purpose, audience, variety of sources, citing of sources and other areas as needed. - Planning, revising and editing processes are built into assignments.	W 3b. Use dialogue and description to develop experiences and events or show the responses of characters to situations. W 3c. Use a variety of transitional words and phrases to manage the sequence of events. W 3d. Use concrete words and phrases and sensory details to convey experiences and events precisely. W 3e. Provide a conclusion that follows from the narrated experiences or events ***Production and Distribution of Writing*** W4. Produce clear and coherent writing (including multiple-paragraph texts) in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) W 5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 4.) W 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting. (W 6 met in Gr. 8, and introduced in Gr. 7) ***Research to Build and Present Knowledge*** W 7. Conduct short research projects that build knowledge through investigation of different aspects of a topic. W 8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources. **(**Digital sources in Grade 7) W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. W 9a. Apply *grade 4 Reading standards* to literature (e.g., "Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character's thoughts, words, or actions]."). (W 9a met in Gr. 5. Developed throughout the earlier grades.) W 9b. Apply grade 4 Reading standards to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text"). (W 9b met in Gr. 6) ***Range of Writing*** W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

- Use of evaluation and revision skills is used to further develop the writing strategies of research, organization, penmanship, and daily practice of spelling and grammar. - Students write summaries of their learning on a daily basis across content areas. They are guided to use concrete sensory details in the narrative. Students are also encouraged to relay ideas through their own pictures (e.g., they write and illustrate topics such as "California culture and biography"). - Students expand written expression through the use of declarative, interrogative, exclamatory and imperative sentences. - Students use traditional structures for conveying information (e.g., chronological order, cause and effect, similarity and difference, and posing and answering a question). - Written and Oral Conventions: Written and oral conventions of language (sentence structure, paragraph structure, punctuation, capitalization, and spelling) are practiced regularly in student writing. - Additional development of spelling through word analysis, word recognition, and fluency, along with systematic vocabulary development, is done through skits, language experiences, and weekly dictation and assigned spelling lists. - Students develop the ability to generate writing with sequential organization, organized ideas, and complete thoughts with appropriate verbal syntactic structures.	

- Create multiple-paragraph compositions: a) Introductory paragraph b) Establish and support a central idea with a topic sentence at or near the beginning of the first paragraph. c) Include supporting paragraphs with simple facts, details, and explanations. d) Conclude with a paragraph that summarizes the points. e) Use correct indentation. - Through daily writing, students exhibit increased ease in executing cursive writing using upper and lower case letters with appropriate consistency. - Given an oral story, students help the teacher compose a synopsis of all, or part, of a story on the board. This is then copied into their Main Lesson Book. - Students generate simple letters, using appropriate openings and closures. - Students give a written presentation and are required to: identify and outline main ideas and supporting details, select a focus, an organizational structure, and a point of view based upon purpose, audience, length, and format requirements. - These assignments are the beginning of literary response and analysis, which encourages understanding of the structural features of literature and the narrative analysis of grade-level-appropriate text. - Research writing begins during the study of animals and humans in zoology, and report-	

writing skills are developed during the exposure to California history. - Skills learned and refined through research writing include: a) Quote or paraphrase information sources b) Cite sources appropriately c) Locate information in reference texts by using organizational features (e.g., prefaces, appendices). d) Use various reference materials (e.g., dictionary, thesaurus, card catalog, encyclopedia, online information) as an aid to writing. e) Understand the organization of almanacs, newspapers, and periodicals and how to use those print materials.	
English Language Arts: *Speaking & Listening* **Public Speaking** *Further development of listening skills and emerging public speaking skills are developed by students creating narrative and informational presentations a part of the*	**English Language Arts: *Speaking & Listening*** **Grade 3: *Speaking and Listening (Grade 3 CC standard met in SCCCS Grade 4)*** ***Presentation of Knowledge and Ideas*** SL 4a. Plan and deliver an informative/ explanatory presentation on a topic that: organizes ideas around major points of information, follows a logical sequence, includes supporting details, uses clear and specific vocabulary, and provides a strong conclusion.
curriculum. Critical listening skills, appropriate response and speaking comprehension is furthered by the regular study of poetry and the regular memorization and recitation of the poetry. Students are taught to speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation. This aids in the organization and delivery of oral communication by developing strong public speaking and presentation skills.	**Grade 4: *Speaking and Listening (Grade 4 CC standard met in SCCCS Grade 4)*** ***Comprehension and Collaboration*** SL 1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly. SL 1a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. SL 1b. Follow agreed-upon rules for discussions and carry out assigned roles. SL 1c. Pose and respond to specific questions to clarify or follow up on information

Strategies used to meet Common Core Standards for Speaking and Listening Include: Activities which require students to: - Ask thoughtful questions and respond to relevant questions with appropriate elaboration during class question and answer sessions and in verbal reporting of reading. - Read with inflection, sentence closures, commas, questions, etc. - Use volume, pitch, phrasing, pace, modulation, and gestures appropriately to enhance meaning. - Present effective introductions and conclusions that guide and inform the listener's understanding of important ideas and evidence. - Use traditional structures for conveying information (e.g., cause and effect, similarity and difference, and posing and answering a question). - Emphasize points in ways that help the listener or viewer to follow important ideas and concepts. - Use details, examples, anecdotes, or experiences to explain or clarify information. - Be prepared for discussions, follow rules, be engaged in the entire process. - Differentiate appropriate styles of English (formal/informal) depending on speaking situation (presentations/group discussions) - Summarize major ideas, context, facts, descriptive details, and supporting evidence when giving oral presentations on stories/text/experiences	and make comments that contribute to the discussion and link to the remarks of others. SL 1d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion. SL 2. Paraphrase portions of a text read aloud, or information presented in diverse media and formats, including visually, quantitatively, and orally. (Non-electronic media) SL 3. Identify the reasons and evidence a speaker or media source provides to support particular points. (SL 3 met in Gr. 6) ***Presentation of Knowledge and Ideas*** SL 4. Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. SL 4a. Plan and deliver a narrative presentation that: relates ideas, observations, or recollections; provides a clear context; and includes clear insight into why the event or experience is memorable. SL 5. Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes. (SL 5 met in Gr. 7. Visual displays in Gr. 4. Use of electronic media in Gr. 7.) SL 6. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation. (See grade 4 Language standards 1 and 3 for specific expectations.)

presented to students within a 24 hour period. These presentations are 20 minutes or longer and visual displays must be included in presentations - Paraphrase text read aloud, or other types of information presented in diverse formats. - Identify how language usages (e.g., sayings, expressions) reflect regions and cultures. - Give precise directions and instructions. - Regularly engage in verbal dictation. - Students follow up to six sequential orally given instructions. Some of these instructions are concrete images (e.g., take out your main lesson books) and some are spatial-visual (place your name on the upper right hand side of the paper). - Given oral practice and stage directions, students perform plays before an audience (at least one per year - Individually or in small groups, students will identify and isolate specific sounds with clear diction and intonation when reciting tongue twisters or other sequences designed to produce specific sounds. - Given selected passages, students individually and chorally recite text with good dictation, meter, intonation and expression. - Selected poems and passages are presented before audiences at assemblies. - Oral class reports are presented during author's circle.	

-	

English Language Arts: *Language*
 	
In 4th grade students are capable of identifying misspelled words and are developing editing skills. Students refer to dictionary, peers or adults for guidance. Students will generate at least three sequential paragraphs using appropriate structure (initial sentence, supporting material, closure and transition phrases or information.) Students have a working knowledge of the parts of speech including nouns, pronouns, verbs, adjectives, adverbs, prepositions, prepositional phrases, articles, conjunctions and interjections and use these in oral responses, and written work. Students are evaluated on use of and knowledge of the conventions of the English language in all areas of communication.
 	
Strategies used to meet Common Core Standards for Language Include:
 	
- Edit and revise oral and written work in the following ways:
  - Adverb choice in a variety of sentences (simple/compound)
  - Produce/expand/rearrange complete simple and compound sentences.
  - Write letters with proper punctuation in greetings and closings.
  - Use apostrophes correctly.
	English Language Arts: *Language*
	Grade 2: *Language (Grade 2 CC standard met in SCCCS Grade 4)*
	Conventions of Standard English
	L 1e. Use adjectives and adverbs and choose between them depending on what is to be modified. (Use in Gr. 3, Choose in Gr. 4.)
	L 1f. Produce, expand, and rearrange complete simple and compound sentences (e.g., *The boy watched the movie; The little boy watched the movie; The action movie was watched by the little boy*).
	L 2b. Use commas in greetings and closings of letters.
	L 2c. Use an apostrophe to form contractions and frequently occurring possessives. (L 2b and L 2c Introduced in Gr. 2.)
	Grade 3: *Language (Grade 3 CC standard met in SCCCS Grade 4)*
	Conventions of Standard English
	L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
	L 1a. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.
	L 1b. Form and use regular and irregular plural nouns.
	L 1c. Use abstract nouns (e.g., *childhood*).
	L 1d. Form and use regular and irregular verbs.
	L 1e. Form and use the simple (e.g., *I walked; I walk; I will walk*) verb tenses.
	L 1f. Ensure subject-verb and pronoun- antecedent agreement.
	L 1g. Form and use comparative and superlative adjectives and adverbs and choose between them depending on what is to be modified.
	L 1h. Use coordinating and subordinating conjunctions.
	L 1i. Produce simple, compound, and complex sentences. (L 1, L 1a-i all Introduced and developed in Grades 2 and 3.)
	L 2b. Use commas in addresses.
	L 2c. Use commas and quotation marks in dialogue.
	L 2d. Form and use possessives.
	Vocabulary Acquisition and Use
	L 4c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., *company, companion*). (Introduced in Gr. 3).
	L 5c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., *knew, believed, suspected, heard, wondered*).

- Show understanding and proper use of nouns, pronouns, verbs, adjectives and adverbs (abstract/regular/irregular forms/comparative/superlative), conjunctions, commas, quotations marks, possessives, root words, shades of meaning, progressives, and use of frequently confused words. - Daily writing in Main Lesson Books ensures students are working on fluidity and legibility of writing in print/cursive. - Writing is expected to free of errors in standard English capitalization, punctuation and spelling. - All forms of student communication (writing, speaking, reading, or listening) is expected to show knowledge of language and vocabulary acquisition and use (e.g., context, figurative language, word relationships, nuances, similes, metaphors, idioms, adages, proverbs, antonyms, and synonyms) Class and individual oral and written activities assist students in the acquisition and use of academic and domain-specific words and phrases.	**Grade 4: *Language (Grade 4 CC standard met in SCCCS Grade 4)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Use interrogative, relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why.) L 1b. Form and use the progressive (*e.g., I was walking; I am walking; I will be walking*) verb tenses. L 1c. Use modal auxiliaries (e.g., *can, may, must*) to convey various conditions. L 1d. Order adjective within sentences according to conventional patterns (e.g., *a small red bag* rather than *a red small bag*). L 1e. Form and use prepositional phrases. L 1f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons. (Note: L 1a, L 1c, L 1f met in Gr 6, introduced in Gr. 4) L 1g. Correctly use frequently confused words (e.g., *to, too, two; there, their*). L 1h. Write fluidly and legibly in cursive or joined italics. L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2a. Use correct capitalization. L 2b. Use commas and quotation marks to mark direct speech and quotations from a text. L 2c. Use a comma before a coordinating conjunction in a compound sentence. L 2d. Spell grade-appropriate words correctly, consulting references as needed. ***Knowledge of Language*** L 3. Use knowledge of language and its conventions when writing, speaking, reading, or listening. L 3a. Choose words and phrases to convey ideas precisely. L 3b. Choose punctuation for effect. L 3c. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion). ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 4 reading and content,* choosing flexibly from a range of strategies. L4 a. Use context (e.g., definitions, examples, or restatements in text) as a clue to the

	meaning of a word or phrase. L 4b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., *telegraph, photograph, autograph*). (Note: L 4b. Greek met in Gr. 5, Latin met in Gr. 6) L 4c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases and to identify alternate word choices in all content areas. L 5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. L 5a. Explain the meaning of simple similes and metaphors (e.g., *as pretty as a picture*) in context. L 5b. Recognize and explain the meaning of common idioms, adages, and proverbs. L 5c. Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms). L 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., *quizzed, whined, stammered*) and that are basic to a particular topic (e.g., *wildlife, conservation,* and *endangered* when discussing animal preservation).
Mathematics ***Introduction*** *Students work with higher multiplication tables, four-digit multiplication, long division, factoring, four processes with fractions, prime numbers, mental math, measurement, conversion, freehand drawing and identification of lines and angles, classification of shapes by properties of their lines and angles.* **Strategies used to meet Common Core Standards for Operations and Algebraic Thinking Include:** - Word Problems: Daily problem solving skills are developed, practiced, and strengthened through word problems, mathematical reasoning problems, stories, math games, paper pencil work and hands-on activities. Students are also	**Mathematics: *Operations and Algebraic Thinking*** **Grade 4: Operations and Algebraic Thinking *(Fourth Grade CC standard met in SCCCS Grade 4)*** ***Use the four operations with whole numbers to solve problems.*** OAT 1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. OAT 2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.1 OAT 3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. ***Gain familiarity with factors and multiples.*** OAT 4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the

engaged in learning and utilizing strategies for checking their own work. - Given appropriate curriculum story problems, students choose, write and analyze, and explain a formula representation of the mathematical aspects of the story. This process applies to generating shape patterns that follow a given rule as well.	range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite. ***Generate and analyze patterns.*** OAT 5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*
Mathematics: *Number and Operations in Base Ten* *In 4th grade, number sense as well as written conventions are emphasized. A complete working understanding of interpretations of fractions (parts of a whole, parts of a set, and the division of whole numbers by whole numbers, number lines) is studied in depth. Equivalent fractions and concrete fraction work (addition and subtraction of fractions, including like and unlike denominators and comparisons are taught. Student work later in the year continues toward multiplying and dividing fractions as well as the study of mixed fractions. The least common multiple and greatest common divisor of whole numbers are introduced as concepts and then used to solve equations. Instruction includes: place value for multi-digit numbers (apply four processes), reading and writing multi-digit whole numbers, comparison of whole-numbers, and the ability to find whole-number quotients and remainders. Students collect, represent, and analyze data to answer questions.* *Students independently use pencil and paper to complete accurate mathematical calculations. Understanding and capacity is measured by daily participation.*	**Mathematics: *Number and Operations in Base Ten*** **Grade 3: *Number and Operations—Fractions (Third Grade CC standard met in SCCCS Grade 4)*** ***Develop understanding of fractions as numbers.*** NOF 1. Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*. NOF 2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. NOF 2a. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. NOF 2b. Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line. NOF 3. Explain equivalence of fractions in special cases and compare fractions by reasoning about their size. NOF 3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. NOF 3b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. NOF 3c. Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram. NOF 3d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Strategies used to meet Common Core Standards for Mathematics: Number and Operations in Base Ten Include: - Through curriculum stories, anecdotes and practical examples, students are instructed in all areas covered by the standards as well as continued mastery of the four processes. - Students demonstrate understanding through oral response, board work and written exercises. - Negative numbers are approached from financial deficit, elevations below sea-level (as at Death Valley) and sub-zero temperatures. - The concept of greater and lesser is emphasized through the use of experiential anecdotes and manipulatives. Students demonstrate an understanding of "greater" and "lesser" numbers. - Given appropriate review and practice, students show mastery of the four processes. - An emphasis is placed on review and practice of long division with an introduction to using estimation and rounding off.	**Grade 4:** ***Number and Operations in Base Ten (Fourth Grade CC standard met in SCCCS Grade 4)*** ***Generalize place value understanding for multi-digit whole numbers.*** NOBT 1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.* NOBT 2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. NOBT 3. Use place value understanding to round multi-digit whole numbers to any place. ***Use place value understanding and properties of operations to perform multi-digit arithmetic.*** NOBT 4. Fluently add and subtract multi-digit whole numbers using the standard algorithm. NOBT 5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. NOBT 6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Mathematics: *Number and Operations—Fractions*	**Mathematics: *Number and Operations—Fractions***
Strategies used to meet Common Core Standards for Mathematics: Number and Operations- Fractions - Through curriculum stories, anecdotes and practical examples, students are instructed in all areas covered by the standards. Students demonstrate understanding through oral response, board work and written exercises. - Fractions are studied beginning with the whole of one to many of the fractional parts that comprise the whole of one. Fractions are represented by drawing parts of a figure and then fractions are represented by using drawings. - Activities as mentioned address the continued extension of study in fraction equivalence and ordering, building fractions from unit fractions, operations of whole numbers, decimal notations for fractions , comparison of decimal fractions, and fraction equivalence and ordering. - Continued practice of the four operations in a variety of formats using higher place value numbers keeps mathematical reasoning sharp and basic computational facts fresh, as well as giving depth to the understanding of numbers above one million. Place value, multiplication, and division are reviewed and expanded with understanding of larger numbers.	**Grade 4: *Number and Operations—Fractions (Fourth Grade CC standard met in SCCCS Grade 4)*** ***Extend understanding of fraction equivalence and ordering.*** NOF 1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. NOF 2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. ***Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.*** NOF 3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. NOF 3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. NOF 3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.* NOF 3c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. (NOF 3c Met in Gr. 5). NOF 3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. NOF 4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. NOF 4a. Understand a fraction a/b as a multiple of $1/b$. *For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).* NOF 4b. Understand a multiple of a/b as a multiple of $1/b$ and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)* (NOF 4b met in Gr. 5).

NOF 4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

Understand decimal notation for fractions and compare decimal fractions.

NOF 5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100 and use this technique to add two fractions with respective denominators 10 and 100. *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100*

NOF 6. Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*

NOF 7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. (NOF 5, NOF 6 and NOF 7 met in Gr. 5).

Extend understanding of fraction equivalence and ordering.

(Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)

NOF 1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

NOF 2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

NOF 3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.

NOF 3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

NOF 3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.*

NOF 3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual

	fraction models and equations to represent the problem. NOF 4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. NOF 4a. Understand a fraction *a*/*b* as a multiple of 1/*b*. *For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).* NOF 4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
Mathematics: *Measurement and Data* **Strategies used to meet Common Core Standards for Mathematics: Measurement and Data** - Students complete work (drawings, equations)in their Main Lesson Books that show mastery of the relationship of addition/subtraction to length. - Area and perimeter will be reinforced during practice periods by the use of graph paper (also used in the study of missions in California History and Mapping). Simple symbolic representations, as outlined in the State Standards, provide for puzzles and the basis of story problems. - Students understand perimeter and area: Addition, multiplication, area as an attribute of plane figures, and measurement. - Students measure the area of squares, planes and rectangular shapes by using appropriate units. - Through curriculum-appropriate stories, examples and practice, the concepts of area and perimeter are introduced. Students measure close and familiar objects and places surrounding them.	**Mathematics: *Measurement and Data*** **Grade 2: *Measurement and Data (Second Grade CC standard met in SCCCS Grade 4)*** ***Relate addition and subtraction to length.*** MD 5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. (Begins at Gr. 3) **Grade 3: *Measurement and Data (Third Grade CC standard met in SCCCS Grade 4)*** ***Geometric measurement: understand concepts of area and relate area to multiplication and to addition.*** MD 5. Recognize area as an attribute of plane figures and understand concepts of area measurement. a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units. *(Introduced in Gr. 3)* MD 6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). MD 7. Relate area to the operations of multiplication and addition. MD 7a. Find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths. MD 7b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning. MD 7d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping

	parts, applying this technique to solve real world problems.
- Then students review and practice specific problems of measurement of linear rule, liquid, weight, time and money. Gradually this expands to more abstract forms and areas. - Students participate in class group activities involving measurement of length, volume, time, weight, mass and capacity. - Students solve problems using different sizes of measurement units, and conversion of measurements from larger to smaller units. - Students are able to work word problems involving measurements: time, linear, liquid, weight and money. - Students are given word problems to help them develop a working knowledge of linear measurements and finding area and perimeter of a given location. - Students use two-dimensional coordinate grids to represent points and graph lines and simple - Students draw the points corresponding to linear relationships on graph paper (e.g., draw 10 points on the graph of the equation y = 3 x and connect them by using a straight line). - Students also learn to make intricate weaving form drawing patterns. - Students study and measure angles and their different rules and properties. - Students represent and interpret data in the Main Lesson Book	**Grade 4: *Measurement and Data (Fourth Grade CC standard met in SCCCS Grade 4)*** ***Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.*** MD 1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb., oz.; l, ml; hr., min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...* (Met in Gr. 5. Standards American measures, Gr. 3, Metric measures, Gr. 5.) MD 2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. (Decimal solutions at Gr. 5.) MD 3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.* ***Represent and interpret data.*** MD 4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection* ***Geometric measurement: understand concepts of angle and measure angles.*** MD 5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a “one-degree angle,” and can be used to measure angles. b. An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees (Met in Gr. 5). MD 6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. (Note: met in Gr. 4. Forms drawn freehand at Gr. 4, at Gr. 6 with protractor.)

	MD 7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure. (Met in Gr. 6).
Mathematics: *Geometry* **Strategies used to meet Common Core Standards for Mathematics: Geometry** - As noted, Some CCSS are met at different grades in the Public Waldorf curriculum. - Through curriculum stories, anecdotes, practical examples, multi-step word problems, and Main Lesson work students are instructed in a variety of Geometric strategies and processes. - Students analyze, compare, create and compose shapes. - Understand and use formulas to solve problems involving perimeters and areas of rectangles and squares. Use those formulas to find the areas of more complex figures by dividing the figures into basic shapes. - Students participate in class group activities involving measurement of length, volume, time,	**Mathematics: *Geometry*** **Kindergarten: *Geometry (Kindergarten CC standard met in SCCCS Grade 4*** ***Analyze, compare, create, and compose shapes.*** G 6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?" (Begins in Gr. 1, Experiential through form drawing, Grade 2.) **Grade 1: Geometry *(First Grade CC standard met in SCCCS Grade 4)*** G 3. Partition circles and rectangles into two and four equal shares, Describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. (Introduced at Grade 3.) **Grade 2: *Geometry (Second Grade CC standard met in SCCCS Grade 4)*** ***Reason with shapes and their attributes.*** G 3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words *halves*, *thirds*, *half of*, *a third of*, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape. **Grade 3: *Geometry (Third Grade CC standard met in SCCCS Grade 4)*** ***Reason with shapes and their attributes.*** G. 2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.
- weight, mass and capacity. - Students memorize definitions for angles and shapes. - Students are able to work word problems involving measurements: time, linear, liquid, weight and money. - Students have a working knowledge of linear	**Grade 4: *Geometry (Fourth Grade CC standard met in SCCCS Grade 4)*** ***Draw and identify lines and angles and classify shapes by properties of their lines and angles.*** G 1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. G. 2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category and identify right triangles. (Two dimensional shapes should include special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals, e.g., rhombus, square, rectangle, parallelogram, trapezoid.)

measurements and finding area and perimeter of a given location. - Students learn much of their angles and shapes from intricate weaving during handwork and freehand drawing. - Students partition circles and rectangles into two, three and four equal shares. They understand and describe them halves, thirds, etc.... - Students finalize their best work into their Main Lesson Book. - Through curriculum-appropriate stories, examples and practice, students draw and identify lines, segments, rays and angles, classify shapes by properties of their lines and angles, and standards related line of symmetry for a two-dimensional figure.	G 3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. (G 1, G 2, G 3 mastered in Gr. 6).
Science ***Introduction*** *Zoology, habitats, the web of life/food chain, Geology, Geography, Land and Water Formations, Weather, Water Cycle, Weather Patterns, Electricity*	**Science**
Environment Gardening, Stewardship, Awareness of Local Environment with a Focus on Local Wildlife, and special focus on the human interaction with the animal kingdom.	
Zoology In the fourth grade, life science is emphasized through the beginning study of zoology. With guidelines supported by the content standards, the relationship of humans to animals is explored in depth. The various species of animals are studied, drawn in detail, and written about. Students learn how to observe and describe similarities and differences in the appearance	

and behavior of animals. Students know how to identify anatomical features of animals and learn to infer what animals eat by the shapes of their teeth. While comparing and contrasting certain animal with human beings, students will end with a clear understanding of the differences between humans and animals. Although they will also know of the archetypal animals which humans tend to endow with representation of specific physiological human traits/systems. From simple to complex species, this study of animals encompasses physiology such as respiratory, digestive and circulatory systems. As well as their parasitic and sympathetic relationships	
Natural History Deep instruction regarding the structures of animals with respect to growth, survival, and reproduction is studied in 4th grade. Students will also study the background of California's weathering from wind, water, erosion, the sea, ice, weather systems, etc.	**From Molecules to Organisms: Structures and Processes** **4-LS1-1.** **Construct an argument that plants, and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.** [Clarification Statement: Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin. ****Each structure has specific functions within its associated system.**] [Assessment Boundary: Assessment is limited to macroscopic structures within plant and animal systems.] **4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.** [Clarification Statement: Emphasis is on systems of information transfer.] [Assessment Boundary: Assessment does not include the mechanisms by which the brain stores and recalls information or the mechanisms of how sensory receptors function.]
Food Chains and Webs Having extensively studied the ecosystem and its living and nonliving components in the third grade farming block, fourth grade students also study the food chain, food web, pollination, and natural history of microorganisms. Students know plants are the primary source of matter and energy entering most food chains, and deepen their	**Earth's Systems** **4-ESS2-1.** **Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.** [Clarification Statement: Examples of variables to test could include angle of slope in the downhill movement of water, amount of vegetation, speed of wind, relative rate of deposition, cycles of freezing and thawing of water, cycles of heating and cooling, and volume of water flow.]

understanding of the roles of producers and consumers, herbivores, carnivores, omnivores, and decomposers in food chains and food webs, and how these roles may compete with each other for resources in an eco-system. The interdependence of living organisms and their roles in the environment for survival are studied.	[Assessment Boundary: Assessment is limited to a single form of weathering or erosion.] **4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.** [Clarification Statement: Maps can include topographic maps of Earth's land and ocean floor, as well as maps of the locations of mountains, continental boundaries, volcanoes, and earthquakes.]
Animal Research Report In addition to their previous experience in a more verbally comprehensive way, fourth grade students are able to more fully express, through expository writing Students will prepare a formal research report complete with citation of sources on an animal they have studied in great detail. They will utilize their observations from nature walks, any applicable field trips, and library research. They will learn about various physiology and specialized traits of animals as well as their habitats. They will have the opportunity to display their mastery through expository writing, as well as by creating illustrations of their subjects	
Other Embedded Fourth Grade California Content Standards Build and use a simple compass. Studymagnetic polarity, electromagnets and their role in motors, doorbells etc., Students will gain knowledge of the phenomena of the Aurora Borealis in the context of discussion of literature and mythology. In conjunction with zoology they will also learn that some animals are sensitive to electromagnetic fields. While students will study electrical energy and its effects of heat, motion and light they will move onto building simple circuits in ensuing years. Fourth graders will examine rock types (sedimentary, igneous, metamorphic, volcanic), practice identification of rock forming minerals, and study earth forces such as erosion	**Earth's Place in the Universe** **4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock formations and fossils in rock layers for changes in a landscape over time to support an explanation for changes in a landscape over time.** [Clarification Statement: Examples of evidence from patterns could include rock layers with shell fossils above rock layers with plant fossils and no shells, indicating a change from land to water over time; and, a canyon with different rock layers in the walls and a river in the bottom, indicating that over time a river cut through the rock.] [Assessment Boundary: Assessment does not include specific knowledge of the mechanism of rock formation or memorization of specific rock formations and layers. Assessment is limited to relative time.] **Energy** **4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object. [**Clarification Statement: Examples of evidence relating speed and energy could include change of shape on impact or other results of collisions.]** [Assessment Boundary: Assessment does not include quantitative measures of changes in the speed of an object or on any precise or quantitative definition of energy.]

and water movement, landforms, scientific investigation, and method and engineering design,.	**4-PS3-2.** **Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.** [Assessment Boundary: Assessment does not include quantitative measurements of energy.] **4-PS3-3.** **Ask questions and predict outcomes about the changes in energy that occur when objects collide.** [Clarification Statement: Emphasis is on the change in the energy due to the change in speed, not on the forces, as objects interact.] [Assessment Boundary: Assessment does not include quantitative measurements of energy.] **4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.*** [Clarification Statement: Examples of devices could include electric circuits that convert electrical energy into motion energy of a vehicle, light, or sound; and, a passive solar heater that converts light into heat. Examples of constraints could include the materials, cost, or time to design the device.] [Assessment Boundary: Devices should be limited to those that convert motion energy to electric energy or use stored energy to cause motion or produce light or sound.] **Waves and their Applications in Technologies for Information Transfer** **4-PS4-1.** **Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.** [Clarification Statement: Examples of models could include diagrams, analogies, and physical models using wire to illustrate wavelength and amplitude of waves.] [Assessment Boundary: Assessment does not include interference effects, electromagnetic waves, non-periodic waves, or quantitative models of amplitude and wavelength.] **4-PS4-2.** **Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.** [Assessment Boundary: Assessment does not include knowledge of specific colors reflected and seen, the cellular mechanisms of vision, or how the retina works.] **4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.*** [Clarification Statement: Examples of solutions could include drums sending coded information through sound waves, using a grid of 1's and 0's representing black and white to send information about a picture, and using Morse code to send text.] **Engineering Design** **3–5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.** **3–5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.**

	3–5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
California The fourth grader is industrious and busy, full of an energy easily directed to the making of maps of the state of California and its' landforms, rivers, and native people. The following of natural water resources from initial source to where towns have developed is an important expansion out into the world beyond the student's personal home. This also leads to the understanding of the importance of agriculture to the economy of California. The exploration of the history of California from before man to how the native people lived is reinforced by at least one-day trip to a historical site. Emphasis is placed on the multicultural role of many people in the history of California. Students begin to explain the economic, social, and political life in California during the time of the Spanish ranchos and missions, and discover the importance of early trappers and trailblazers to the establishment of the Bear Flag Republic through the Mexican-American War, the Gold Rush, and the granting of statehood. From said studies students will be learn about the differences between igneous, sedimentary and gold bearing rocks and minerals.	**Earth and Human Activity** **4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. [Clarification Statement: Examples of renewable energy resources could include wind energy, water behind dams, and sunlight; non-renewable energy resources are fossil fuels and fissile materials. Examples of environmental effects could include loss of habitat due to dams, loss of habitat due to surface mining, and air pollution from burning of fossil fuels.]** **4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.* [Clarification Statement: Examples of solutions could include designing an earthquake resistant building and improving monitoring of volcanic activity.] [Assessment Boundary: Assessment is limited to earthquakes, floods, tsunamis, and volcanic eruptions.]**
Geography Local surroundings mapmaking, classroom, bedroom, route to school. Students will gain a working understanding of California's geographical regions and the impact of geography on plant and animal distribution.	

Sycamore Creek Community Charter School

Public Waldorf Inspired Curriculum Cross Articulation with California Aligned Common Core Standards and Next Generation Science Standards

GRADE 5

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	California Aligned Common Core Standards and Next Generation Science Standards
English Language Arts: *Reading* ***Introduction*** *The fifth-grade child is at a point of balance in the curriculum. The children have one foot in true childhood, and are about to take a step into the world of adolescence. Before childhood is left behind, students are offered a meaningful experience through exposure to and study of the development of Western Civilization. The mythologies and historical epics such as the Ramayana, the*	**English Language Arts: *Reading*** **Grade 3: *Reading Literature (Third Grade CC standard met in SCCCS Grade 5)*** ***Craft and Structure*** RL 4. Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language. (See grade 3 Language standards 4-6 for additional expectations.) RL 5. Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections. **Grade 4: *Reading Literature (Fourth Grade CC standard met in SCCCS Grade 5)*** ***Craft and Structure*** RL 4. Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean). (See grade 4 Language standards 4-6 for additional expectations.)

Mahabharata, the Epic of Gilgamesh, the Iliad and the Odyssey offer students a chance to experience civilizations very different from their own. Elements of grammar, cursive, punctuation, independent clauses, synonyms, and syntax are addressed at each main lesson. Vocabulary development, spelling, fluency and composition are also practiced in each main lesson block. . In each main lesson the previous day's lesson is reviewed; followed by an extension of the material. **Literature** Students are instructed to read at times: aloud, silently and at home. Students are able to self select from appropriate choices alongside ascribed texts. The Main Lesson teacher also reads select passages aloud to the class. Through this and an expectation of completing at least one recreational book per month students will increase their fluency. Main topics for fifth grade include Fiction and myths from ancient civilizations, the Lewis and Clark expedition and after effect, nonfiction, and recitations. **Historical Research** Historical research, reading projects, and book reports deepen the fifth grader's reading	**Grade 5: *Reading Literature (Fifth Grade CC standard met in SCCCS Grade 5)*** ***Key Ideas and Details*** RL 1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from **the text.** RL 2. Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text. RL 3. Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact). ***Craft and Structure*** RL 4. Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes. (See grade 5 Language standards 4-6 for additional expectations. ***Range of Reading and Level of Text Complexity*** RL 10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently. **Grade 5: *Reading Informational Texts (Fifth Grade CC standard met in SCCCS Grade 5)*** ***Key Ideas and Details*** RI 1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. RI 2. Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. ***Craft and Structure***

comprehension, literary response and analysis. By reading a wide array of texts students will practice integrating knowledge and ideas as well as widening their experiential range and level of text complexity. Students will then be able to demonstrate reading-for-information skills such as extracting information from charts and graphs, find and recall facts and events, predict outcomes and infer and extrapolate meanings. **Reading Comprehension** Comprehension is further developed through reading core literature books in differentiated reading groups that align with fifth grade instructional blocks. To supplement their understanding and analysis of grade-appropriate texts, the students continue to deepen their knowledge of story structure, genre, and reading comprehension. **Reading Discussion Groups for key ideas and details** Students begin a deeper analysis of character, genre, and setting as they discuss books from core literature selections of historical fiction correlated with this area of study. In groups, students will also be able to examine the craft and structure of texts.	RI 4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. (See grade 5 Language standards 4-6 for additional expectations.) ***Integration of Knowledge and Ideas*** RI 7. Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (Digital sources in Gr. 7) RI 8. Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s). RI 9. Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. ***Range of Reading and Level of Text Complexity*** RI 10. By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently. **Grade 5:** ***Reading Foundational Skills (Fifth Grade CC standard met in SCCCS Grade 5) Phonics and Word Recognition*** RFS 3. Know and apply grade-level phonics and word analysis skills in decoding words. RFS 3a. Use combined knowledge of all letter- sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context. ***Fluency*** RFS 4. Read with sufficient accuracy and fluency to support comprehension. RFS 4a. Read on-level text with purpose and understanding. RFS 4b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings.

Latin and Greek Roots The students are exposed to botany as part of the science curriculum.Deep study of plant life encourages students to increase their vocabulary by exploring the Latin and Greek roots used in scientific classification. Word origins related to Greek roots are an important part of the study of the ancient myths and will connect to the Roman studies in sixth grade. Students use sight words and contextual clues to deduce the meanings of obscure reading materials. They learn to write clear and concise descriptions of plant species.	RFS 4c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary. _____ _____ _____
English Language Arts: *Writing* **Beauty and Power of the Written Word** The curriculum in fifth grade pays special attention to the depth and beauty of literature creating an expansive vocabulary and developing and understanding of complex concepts within text and oral presentations.	**English Language Arts: *Writing*** **Grade 4: *Writing (Fourth Grade CC standard met in SCCCS Grade 5)*** ***Research to Build and Present Knowledge*** W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. W 9a. Apply *grade 4 Reading standards* to literature (e.g., "Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character's thoughts, words, or actions]."). Developed throughout the earlier grades
Fifth graders bring their emergent writing skills to the public realm via peer editing and participation in public writing projects so that they may see the written articulation of their thoughts and ideas as a contribution to the community. **Writing**	**Grade 5: *Writing (Fifth Grade CC standard met in SCCCS Grade 5)*** ***Text Types and Purposes*** W 2. Write informative/explanatory texts to examine a topic and convey ideas and information clea W 2a. Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.

Students will take part in journaling, writing essays of all genres, content related dictation, compositions, Greek myths, and report writing. As the writing genre will be suited to the lesson studied; multiple paragraph narrative compositions would likely be employed for history and mythology student responses. Student retellings, practicing description of settings, atmosphere, plot and character, help them to organize their compositions **Written Analysis** Further, students incorporate the stories studied in this grade into a greater understanding of archetypal characters. Writing deepens with analysis directed toward the myths studied and to the biographies of significant persons from the aforementioned ancient cultures. **Writing Projects** Written projects are incorporated throughout the fifth grade, building upon the skills of prior grades and developing proficiency in writing strategies, writing applications, and conventions. Students will write in their main lesson books nearly every school day; developing outlines that accent main ideas and supporting details. Teachers build reading comprehension with composition skills. The students are able comfortably write	W 2b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. W 2c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially). W 2d. Use precise language and domain-specific vocabulary to inform about or explain the topic. W 2e. Provide a concluding statement or section related to the information or explanation presente W 3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. W 3a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. W 3b. Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations. W 3c. Use a variety of transitional words, phrases, and clauses to manage the sequence of events. W 3d. Use concrete words and phrases and sensory details to convey experiences and events precisely. W 3e. Provide a conclusion that follows from the narrated experiences or events. ***Production and Distribution of Writing*** W 4. Produce clear and coherent writing (including multiple-paragraph texts) in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) W 5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 5.) ***Research to Build and Present Knowledge*** W 7. Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

compositions demonstrating sequential paragraphs, with organized structure of 250 word or longer. They will write simple and compound sentences using appropriate structure, conjunctions and transitional phrases. Students learn how to develop compositions from topic sentences, while offering subordinated supporting information. The teacher will provide critical evaluation of the student writings and provide strategies for editing and improvement. Students will also proofread and self edit written material. Through this revision process students will practice regrouping sentences, adding detail, clarifying ideas, and correcting spelling, capitalization and punctuation. Followed by students creating a final copy of re-written edited material. **Essay Conventions** Essay conventions are taught and students explore this form in depth, including distinguishing between and practice of the modes of writing (narrative, expository, persuasive, descriptive writing). Students will practice writing their own creative ideas in essay form. They will also write poems mimicking literary styles, history reports, narrative summaries, biographical sketches, descriptions of characters and settings, stories and opinions from personal experience, and	W 8. Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. **(**Digital sources Introduced in Gr. 7 W 9a. Apply grade 5 Reading standards to literature (e.g., "Compare and contrast two or more characters, settings, or events in a story or a drama, drawing on specific details in the text [e.g., how characters interact]"). ***Range of Writing*** W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

both friendship and business letters using appropriate formats.	
English Language Arts: *Speaking & Listening* **Public Speaking** Speaking is an important part of the curriculum. Daily recitation of passages relevant to the main lesson block of study, retelling of stories, discussion of relevant details and comparison with modern life, offering opinions and supporting points with reason and explanation, while identifying fallacies or persuasive rhetorical techniques all help students in their growing confidence and effectiveness in verbal dictation. The study of ancient cultures provides an apt landscape for articulate written reports and public speaking via presentations and drama. Students will have the ability to practice grammar regularly. Weekly lessons including grammar, the 8 basic parts of speech, the 8 basic parts of sentence, irregular verbs and perfect forms of tense will help students' ability to demonstrate functional knowledge.	**English Language Arts: *Speaking & Listening*** **Grade 5: *Speaking and Listening (Grade 5 CC standard met in SCCCS Grade 5)*** ***Comprehension and Collaboration*** SL 1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly. SL 1a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. SL 1b. Follow agreed-upon rules for discussions and carry out assigned roles. SL 1c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. SL 1d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions. SL 2. Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally. ***Presentation of Knowledge and Ideas*** SL 4. Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. **(**Topic or text at Gr. 5, opinion at Gr. 6)

	SL 4b. Memorize and recite a poem or section of a speech or historical document using rate, expression, and gestures appropriate to the selection. SL 6. Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation. (See grade 5 Language standards 1 and 3 for specific expectations.)
English Language Arts: *Language* Students will perform in choral and individual speaking. They will recite poetry, prose, story summaries and oral reports. From this practice they will gain improved diction, meter and cadence, syntax, volume and rate, as well as artistic expression. The teacher will help students develop the ability and convention of sustained attention toward the primary speaker as well as following 6 sequential directions without continuous need for repeated commands.	**English Language Arts: *Language*** **Grade 5: *Language: (Grade 5 CC standard met in SCCCS Grade 5)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1c. Use verb tense to convey various times, sequences, states, and conditions. L 1d. Recognize and correct inappropriate shifts in verb tense. L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2a. Use punctuation to separate items in a series. L 2b. Use a comma to separate an introductory element from the rest of the sentence. L 2c. Use a comma to set off the words yes and no (e.g., Yes, thank you), to set off a tag question from the rest of the sentence (e.g., It's true, isn't it?), and to indicate direct address (e.g., Is that you, Steve?). L 2d. Use underlining, quotation marks, or italics to indicate titles of works. L 2e. Spell grade-appropriate words correctly, consulting references as needed. ***Knowledge of Language*** L 3. Use knowledge of language and its conventions when writing, speaking, reading, or listening. L 3a. Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.

	Vocabulary Acquisition and Use L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies. L 4a. Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase. L 4b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis). **(**Gr. 6 Greek in Gr. 5; Latin in Gr. 6) L 4c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases and to identify alternate word choices in all content areas. **(**Digital in Gr. 7) L 5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. (Met in Gr. 8; Developed throughout the grades) L 5b. Recognize and explain the meaning of common idioms, adages, and proverbs. L 5c. Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words. L 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).

Mathematics

Introduction

Fifth grade mathematics honors the student's capacity for and interest in data gathering, computation, and reasoning. Having learned the four operations well enough to apply them to more sophisticated conceptualizations, the fifth grader now moves to working with very large and very small numbers (exponents, fractions, decimals), and examining in depth the relationship between decimals, fractions, and percent.

Strategies that Support Number and Operational Understanding in Base Ten

Multi digit multiplication and division and negative number lines are practiced and reviewed. Students will practice arithmetic by working story problems selected to apply procedures learned by rote. Students will exhibit mastery of the 4 basic operations. They will be able to use negative and positive integers, fractions, decimals, multiple digit multiplication and long division, estimation, rounding, and multi-column adding and subtracting. Their mastery will include the following specifics:

- addition if multi-digit whole number columns with carrying
- addition of simple fractions with CD

Mathematics

Mathematics: *Operations and Algebraic Thinking*

Grade 5: *Operations and Algebraic Thinking (Fifth Grade CC standard met in SCCCS Grade 5)*

Write and interpret numerical expressions.

OAT 2.1. Express a whole number in the range 2–50 as a product of its prime factors.
For example, find the prime factors of 24 and express 24 as 2x2x2x3.

Analyze patterns and relationships.

OAT 3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.
For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

Mathematics*: Number and Operations in Base Ten*

Grade 5: *Number and Operations in Base Ten (Fifth Grade CC standard met in SCCCS Grade 5)*

Understand the place value system.

NOBT 1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
NOBT 2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
NOBT 3. Read, write, and compare decimals to thousandths.
a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.
b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
NOBT 4. Use place value understanding to round multi-digit whole numbers to any place.

***Perform operations with multi-digit whole numbers and with decimals to hundredths*.**

NOBT 5. Fluently multiply multi-digit whole numbers using the standard algorithm.
NOBT 6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
NOBT 7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

● addition of mixed numbers/fractions with unlike denominators ● addition of decimals ● addition using expanded notation ● subtraction of multi-digit whole number using borrowing ● subtraction of simple fractions using CD ● subtraction of mixed numbers containing fractions with unlike denominators ● subtraction of decimals ● all multiplication tables are memorized out of sequential order ● multiplication tables oral and written ● multiplication of multi-digit whole numbers ● multiplication of simple fractions with like denominators ● multiplication of fractions with unlike denominators ● expansion of fractions ● comparison of fractions through multiplication processes ● finding CD using multiplication ● changing mixed numbers to improper fractions ● multiplication of decimal while moving decimal points correctly ● identification of reciprocals ● division of simple fractions using reciprocals	**Mathematics: *Number and Operations—Fractions*** **Grade 4: *Number and Operations—Fractions (Fourth Grade CC standard met in SCCCS Grade 5)*** ***Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.*** NOF 3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. NOF 3c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. NOF 4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. NOF 4b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)* ***Understand decimal notation for fractions, and compare decimal fractions.*** NOF 5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100* NOF 6. Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.* NOF 7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. **Grade 5: *Number and Operations—Fractions (Fifth Grade CC standard met in SCCCS Grade 5)*** ***Use equivalent fractions as a strategy to add and subtract fractions.***

- conversion of mixed numbers
- division of mixed numbers
- reduction of fractions to lowest terms
- division of decimals with decimal point dividend
- division of fractions with decimal in divisor and dividend
- conversion of decimals to percentage and percentages to decimals

ordering of decimals, fractions and mixed numbers

Orienteering, Graphical Representations

Students learn to analyze and interpret mathematical relationships in graphic representations. Additionally, students work with the skills of compass reading; bearing, orienteering, and mapping skills all add dimension and intrigue to the mathematics curriculum.

Algebra

5th grade continues the articulation of simple algebraic formulas, and equations. The use of letters in place of numbers is introduced and practiced. Students will practice solving for unknown variables vias story problems. Pictorial thinking will be utilized as the students will be able to illustrate the distance traveled at a constant rate of speed and the relationship of the increase distanced to the proportion of time passed. Similarly students

NOF 1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)
NOF 2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
NOF 3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?
NOF 4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

NOF 4a. a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.
For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.).
NOF 4b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

NOF 5. Interpret multiplication as scaling (resizing), by:

NOF 5a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
NOF 5b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n\ b)$ to the effect of multiplying a/b by 1.

NOF 6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

will be introduced to linear coefficients in the illustration of a sloping hill and calculate a hiker's ascent at different times. Students will practice expanding and reducing fractions. They will be able to recognize prime numbers, as well as calculate lowest common denominators by the least exponent of prime factors. ***Research to Build and Present Knowledge*** **Statistics** Basic statistics, data analysis and probability, and mathematical reasoning are all in clear focus at this point of the child's educational experience. Students will be able to extract data and pertinent information from word problems in order to mentally calculate answers. They will be taught more elaborate number patterns and designs. Ordered pairs are introduced in the context of 2 dimensional number patterns. Students will practice organizing and displaying data from their study of Botany. They'll use fractions and percentages to compare sets of data from field and garden observations. They will be able to find averages and display data in freehand pie charts and histograms.	NOF 7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. NOF 7a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3. NOF 7b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4. NOF 7c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins? **NOF 5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.* NOF 6. Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.* NOF 7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using the number line or another visual model. CA **Mathematics: *Measurement and Data*** **Grade 3: *Measurement and Data (Third Grade CC standard met in SCCCS Grade 5)*** ***Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.*** MD 2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. In grade 3, using standard American measures; the metric system studied in grade 5. ***Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.***

Students will practice interpreting large numbers in the context of their study of ancient histories. For example while studying the pyramids structures of ancient Egypt students will estimate the large numbers of stones used and workers needed to move them, Students will learn how to achieve a reasonable accuracy in this type of interpretation.	MD 8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. **Grade 4: *Measurement and Data (Fourth Grade CC standard met in SCCCS Grade 5)*** ***Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.*** MD 1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), …* Standards American measures, Gr. 3, Metric measures, Gr. 5. ***Geometric measurement: understand concepts of angle and measure angles.*** MD 5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a “one-degree angle,” and can be used to measure angles. b. An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.
	Grade 5: *Measurement and Data (Fifth Grade CC standard met in SCCCS Grade 5)* ***Convert like measurement units within a given measurement system.*** MD 1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. ***Represent and interpret data.*** MD 2. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally*

Mathematics: *Geometry*	**Mathematics: *Geometry***
Students will have knowledge of linear measurements, simple areas, and perimeters. Euclidean Geometry and the history of the respect developed by Pythagoras for numbers will lead the way for students studies of geometric principles. The pythagorean theorem will be interpreted in relationship to Ancient Greece as the sum of cut areas of squares of paper. Students will learn the g Geometric principles of perimeter and area, grid coordinates, angles, radius, diameter, as well as prime factoring in relation of the Sieve of Eratosthenes. Freehand drawing of simple plane geometric objects as well as cutting and folding paper constructions (squares/cubes, square & isosceles triangles/pyramid, equilateral triangles.tetrahedron) will aid students ability to fully conceive of the	**Grade 1: *Geometry (First Grade CC standard met in SCCCS Grade 5)*** G 1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); Build and draw shapes to possess defining attributes. G 2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. *(Students do not need to learn formal names such as "right rectangular prism.")* For both G 1 and G 2; CC Standards introduced in Grade 1 through movement, manipulatives, art, form drawing, modeling, and concrete reasoning. **Grade 2: *Geometry (Second Grade CC standard met in SCCCS Grade 5)*** ***Reason with shapes and their attributes.*** G 1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. **Grade 3: *Geometry (Third Grade CC standard met in SCCCS Grade 5)*** ***Reason with shapes and their attributes.*** G 1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
principles of geometry; degree measurements of angles, properties of triangles, areas of plane figures, and how plane figures can be manipulated into solid figures. Students will work in groups to practice with length, volume, time, wright, mass and capacity. Students will then be able to consider the dimensions of the pyramids; volume, area of base and sides.	**Grade 5: *Geometry (Fifth Grade CC standard met in SCCCS Grade 5)*** ***Classify two-dimensional figures into categories based on their properties.*** G 3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.* G 4. Classify two-dimensional figures in a hierarchy based on properties.

Science	**Science**
Introduction *Fifth grade marks the beginning of state testing of science standards. SCCCS fifth grade primary uses the study of botany and plant science to deliver the science standards. As the 5th grade students studies the ancient histories of India and the Middle East through Greece they also take up the knowledge of their technological developments. Students will learn of the progression from Neolithic stone hammers to Babylonian batteries; alongside advances in metallurgy, alloy and armament, to Greek speculations of the four states of matter and arguments about the existence of vacuums, and Democritus' theory of atomic structure and molecular bonding.* **Plant Science- Botany** Plant science provides a thematic foundation from which the state standards in physical and life science are met. Focus on investigation of individual plant parts and basic conditions of plant life, different types of soil, and plant communities and botanical adaptations. In step with the students' study of chemistry they will learn about the role of oxygen, carbon dioxide exchange, photosynthesis, and carbohydrate and sugar formation in plants.	**From Molecules to Organisms: Structures and Processes** **5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.** [Clarification Statement: Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.] **Ecosystems: Interactions, Energy, and Dynamics** **5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.** [Clarification Statement: Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth.] [Assessment Boundary: Assessment does not include molecular explanations.] Matter and Its Interactions: **5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.** [Clarification Statement: Examples of evidence supporting a model could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water.] [Assessment Boundary: Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles.] **5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.** [Clarification Statement: Examples of reactions or changes could include phase changes, dissolving, and mixing that forms new substances.] [Assessment Boundary: Assessment does not include distinguishing mass and weight.] **5-PS1-3. Make observations and measurements to identify materials based on their properties.** [Clarification Statement: Examples of materials to be identified could include baking soda and other powders, metals, minerals, and liquids.

Chemistry

Furthering the students' knowledge of physical science includes the study of theThe periodic table of elements, basic elements and basic chemical reactions. Through the students' study of ancient cultures they will be introduced to the concepts and language of molecules and atoms. They will be able to compare the ancient models of atomic and molecular structure with their seminal ideas.

Evolution and Adaptation

Further, the evolution of lower plants to the higher plants, classification of plants, plant growth, and the relationship of plants and insects are all studied in depth. Students will examine the vast hierarchy of plant life from fungi, algae, lichens and mosses through conifers, monocotyledons into the variety of dicotyledons.

Sun and Water Cycles, Photosynthesis

The fifth grader will learn to understand the interactions between animals, the sun and the water cycle influences on plant growth, using charts and tabular information as well as illustrations from field guides and other credible informational materials.

Building on the student's knowledge of Earth Science as learned in prior grades of the water

Examples of properties could include color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, and solubility; density is not intended as an identifiable property.] [Assessment Boundary: Assessment does not include density or distinguishing mass and weight.]

5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances. [Clarification Statement: Examples of combinations that do not produce new substances could include sand and water. Examples of combinations that do produce new substances could include baking soda and vinegar or milk and vinegar.]**

Motion and Stability: Forces and Interactions

5-PS2-1 Support an argument that the gravitational force exerted by Earth on objects is directed down. [Clarification Statement: "Down" is a local description of the direction that points toward the center of the spherical Earth.] [Assessment Boundary: Assessment does not include mathematical representation of gravitational force.]

Energy

5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. [Clarification Statement: Examples of models could include diagrams, and flow charts.]

Earth's Systems

5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. [Clarification Statement: ****The geosphere, hydrosphere (including ice), atmosphere, and biosphere are each a system and each system is a part of the whole Earth System.** Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of

cycle, and geography, the 5th grade student will further examine California watershed. Attention will be paid to local community watershed and sources as well as an expansion to the entire North American continent. They will study North American climatology and learn how major ocean currents influence weather patterns. **Ecological Principles** They learn how the complete environment determines the physical qualities and growth characteristics of any plant, flower or tree, and study the ecological role of human beings in relationship to the environment. Plants environments (desert, tundra, rainforest, etc.) are investigated, as plants grow from the poles to the equator. Individual plants are compared and contrasted in detail. **Scientific Writing, Investigation, and Experimentation** The focus of 5th grade science in on botany, measurements, experiments, observations ad classifications centered on plants and insects. Thus student participation in gardening is included in time spent toward these goals. Students will learn of the early understandings of base and noble metals as described by	mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system.] [Assessment Boundary: Assessment is limited to the interactions of two systems at a time.] **5-ESS2-2. Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.** [Assessment Boundary: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere **5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.**

Aristotle's writings as well as the correlation to the naming of the days of the week and the 7 corresponding elements. They will contrast the modern and ancient understandings. Their history studies will exhibit the attitudes that underlie the modern scientific method. Students learn how to accurately observe and describe in scientific writing, and drawing plants that are in their habitat or environment, using skills of interpretation, observation, details, and examples. Students have the opportunity to deliver a scientific reports, choosing a plant and describing it in its environment, including factors that affect the healthy development of the plant. Through investigation and experimentation, they learn how the complete environment determines the physical qualities and growth characteristics of any plant or flower or tree, and they also ponder the role of human beings in relationship to the environment.	
Studies of Greek mythology and this/then becomes a basis for identifying constellations by naked eye observation. Many circumpolar constellations are directly connected to the Perseus myth. Observation and identification become a springboard for studying astronomical phenomena.	**Earth's Place in the Universe** **5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. [**Clarification Statement: Absolute brightness of stars is the result of a variety of factors. Relative distance from Earth is one factor that affects apparent brightness and is the one selected to be addressed by the performance expectation.]** [Assessment Boundary: Assessment is limited to

	relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, stage).] **5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.** [Clarification Statement: Examples of patterns could include the position and motion of Earth with respect to the sun and selected stars that are visible only in particular months.] [Assessment Boundary: Assessment does not include causes of seasons.]
History & Social Studies ***Introduction*** *An integrative part of the Literacy and Language Arts study, the focus on the ancient cultures of India, Mesopotamia, Egypt, Phoenicia, and Greece as the birth of western civilization supports the history and social science component of the curriculum for fifth grade. Students study the development of the nation up to 1850, with an emphasis on the people who were already here, when and from where others arrived, and why they came. Students gain an understanding of the colonial government and its founding principles and the ideals of the Enlightenment. As well, cultural universals and differences, early explorers and the Americas are part of the curriculum.*	**History & Social Studies** STANDARDS ALIGNMENT TO BE CREATED BY INAUGURAL TEACHERS

India, Mesopotamia, Egypt, Phoenicia, Greece Students receive integrative instruction as part of Literacy and Language Arts, with the focus on the ancient cultures of India, Mesopotamia, Egypt, Phoenicia, and Greece as the birth of western civilization supports the history and social science component of the curriculum for this grade.	
Colonial Era Students are educated in the political, religious, social, and economic institutions that evolved in the colonial era. The cause, course, and consequences of the early explorations through the War for Independence and western expansion is studied, and the aim is for student understanding of the colonization, immigration, and settlement patterns of early America.	
U.S. Geography, Maps Our place based education and geography also widens its scope from California in the fifth grade to include the other 49 states and their capitals. The study of geometry assists the children in mapmaking and provides an opportunity for the children to observe and study the natural treasures of our country and note them accurately and geographically by	**Engineering Design** **3–5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.** **3–5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.**

region, natural resources, and population centers. Compass-Latitude-Longitude: Students read about and study the characteristics of early explorers and the technological developments that made sea exploration by latitude and longitude possible, supplementing this instruction with their own developing use of the design, use, and understanding of a compass.	**3–5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.**

Sycamore Creek Community Charter School

Public Waldorf Inspired Curriculum Cross Articulation with California Aligned Common Core Standards and Next Generation Science Standards

GRADE 6

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	California Aligned Common Core Standards and Next Generation Science Standards
English Language Arts: *Reading* ***Introduction*** *In sixth grade the student has crossed the threshold into adolescence. As such, their ability to understand language at a deep level is recognized and utilized to further their understanding of literature.* **Literature** Historical fiction, verses and poems, mythology, tribal lore, Roman and Greek	**English Language Arts: *Reading*** **Grade 4: *Reading Literature (Fourth Grade CC standard met in SCCCS Grade 6)*** ***Craft and Structure*** RL 5. Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text. RL 6. Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations. RL 7. Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.

myths, stories of knighthood and chivalry, biographies. Students will keep individual lists of books read throughout the year. Several texts will be read aloud as class readers. The teacher will read texts and passages in the main lesson. Students will practice narrative analysis of Roman literature, tales of the Middle Ages, themes of chivalry and romances, legends of Robin Hood and King Arthur, ballads and folklore.	RL 9. Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures. **Grade 5: *Reading Literature (Fifth Grade CC standard met in SCCCS Grade 6)*** ***Craft and Structure*** RL 5. Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem. RL 6. Describe how a narrator's or speaker's point of view influences how events are described. RL 9. Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.
Discussion of reading occurs everyday. Teachers help students recognize plot development, foreshadowing, conflict, characterization, an arguments strength or weakness, affective and persuasive prose, fallacy, etc. As supported by historical readings students will be able to identify defining character traits. Historical period themes are introduced to students in juxtaposition with literary device. Themes from Ancient cultures are often seen as myths controlling a culture, in history the worldview of a culture of defines its themes. Differentiated Reading Strategies: *Flexible Grouping* *Tiered Texts*	**Grade 6: *Reading Literature (Sixth Grade CC standard met in SCCCS Grade 6)*** ***Key Ideas and Details*** RL 1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. (Met in Gr. 7 Introduced in Gr. 6) RL 2. Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments. RL 3. Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution. ***Craft and Structure*** RL 4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone. (See grade 6 Language standards 4–6 for additional expectations.) CA RL 5. Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot. RL 6. Explain how an author develops the point of view of the narrator or speaker in a text.

Flexible Use of Strategy/Skill *Annotation and Focused Note-taking* Vocabulary is developed in a class reading program. Students are required to read at least 9 books; 6 are assigned and 3 are self-selected. The assigned books are accompanied by comprehension questions. While the self selected books are accompanied by artistic representations. Students shall relay significant details and events from readings in class sessions, contests/quizzes, and short homework reports. Assessment of their resulting level of comprehension and and recall skills will be an aid to the teacher moving forward to strengthen each students ELA abilities. Vocabulary, spelling, fluency and composition skills are further developed throughout the year in every block. Every new topic of integrated curriculum brings additional vocabulary words. As many as 15 new vocabulary words are introduced each week. While lists are made of new words introduced in each subject. Students show working knowledge of alphabetization by checking spelling and definitions through dictionary usage. They do this to independently edit first drafts.	***Integration of Knowledge and Ideas*** RL 7. Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including contrasting what they "see" and "hear" when reading the text to what they perceive when they listen or watch. (Note**: met in** Gr. 7 but introduced in Gr. 6 through comparison with a "live version" of the text.) RL 8. (Not applicable to literature) RL 9. Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics. ***Range of Reading and Level of Text Complexity*** RL 10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Word etymology is studied through the context of Rome-Latin language root words. Students show reliable recall of words and are able to analyze new words by context. **Other Common Core Sixth Grade ELA Standards** Use of technology to aid in research, critique literary works, and expository compositions.	
English Language Arts: *Reading Informational Text* An out-of-class research project accompanies each of 10 main lesson blocks. Students will gather information from various resources such as newspapers, encyclopedias, magazines, source texts, appropriate grade level novels, etc. Students will demonstrate reading for information skills by scanning visual information such as charts and graphs, recalling data or events, collecting data and following sequential operations. Students will show improved comprehension, speed and word recognition with ongoing use of reference materials, and reading and oral recall of reports. They will be able to demonstrate understanding and comprehension skills of main ideas and supporting details by exhibiting an increased	**English Language Arts: *Reading Informational Text*** **Grade 2: *Reading Informational Text (Second Grade CC standard met in SCCCS Grade 6)*** ***Integration of Knowledge and Ideas*** RI 8. Describe how reasons support specific points the author makes in a text. RI 9. Compare and contrast the most important points presented by two texts on the same topic. **Grade 3: *Reading Informational Text (Third Grade CC standard met in SCCCS Grade 6)*** ***Key Ideas and Details*** RI 3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (Introduced in Gr. 3, Met in Gr. 6) ***Integration of Knowledge and Ideas*** RI 8. Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). RI 9. Compare and contrast the most important points and key details presented in two texts on the same topic. **Grade 4: *Reading Informational Text (Fourth Grade CC standard met in SCCCS Grade 6)***

ability to verbally synopsize as well as critically evaluate reading materials in their research projects.	***Craft and Structure*** RI 5. Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text. RI 6. Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided. ***Integration of Knowledge and Ideas*** RI 7. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears. RI 8. Explain how an author uses reasons and evidence to support particular points in a text. **Grade 5:** ***Reading Informational Text (Fifth Grade CC standard met in SCCCS Grade 6)*** ***Key Ideas and Details*** RI 3. Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text. RI 5. Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
	Grade 6: ***Reading Informational Text (Sixth Grade CC standard met in SCCCS Grade 6)*** ***Key Ideas and Details*** RI 1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. (Met in Gr. 7, but formal "analysis" Introduced in Gr. 6) RI 2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments. RI 3. Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes). ***Craft and Structure***

	RI 4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings. (See grade 6 Language standards 4–6 for additional expectations.) CA RI 5. Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas. RI 5a. Analyze the use of text features (e.g., graphics, headers, captions) in popular media. RI 6. Determine an author's point of view or purpose in a text and explain how it is conveyed in the text. ***Integration of Knowledge and Ideas*** RI 7. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. RI 9. Compare and contrast one author's presentation of events with that of another (e.g., a memoir written by and a biography on the same person). ***Range of Reading and Level of Text Complexity*** RI 10. By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.
English Language Arts: *Writing* **English/Grammar** Compound and complex sentences, prefixes and suffixes, punctuation, elements of grammar, spelling. Including subject and predicate, tenses, and a deepening understanding of the parts of speech. Students are taught transitive and intransitive verbs, adverbs, possessive and objective	**English Language Arts: *Writing*** **Grade 3: *Writing (Third Grade CC standard met in SCCCS Grade 6)*** ***Text Types and Purposes*** W 1. Write opinion pieces on topics or texts, supporting a point of view with reasons. (Introduced in Gr. 5, met in Gr. 6) W 1a. Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons. W 1b. Provide reasons that support the opinion. W 1c. Use linking words and phrases (e.g., *because, therefore, since, for example*) to connect

nouns, adverbial phrases and clauses, adjectives and subordinate conjunctions. **Writing** Multiple genres, emphasis on description, poetry, nature writing, word processing, biographies, business letters, essay writing, written reports, position papers with supporting claims and analysis, and research papers citing sources will further develop the child's ability to read and process information from expository text. Students practice developing sentence diagramming skills. Students will learn many forms of sentence structure such as: simple declarative, exclamatory and imperative, interrogative, compound sentences with coordinate conjunctions and semicolons, complex sentences with adjective phrases and clauses, as well as conditional sentences with subjunctive mood. terminology for a computer. They will practice basic keyboarding and formatting skills. **Technology** Students will learn the basic workings and For each out-of-class research project the students will create a multi paragraph exposition of complex topics. Students will	opinion and reasons. W 1d. Provide a concluding statement or section. **Grade 4: *Writing (Fourth Grade CC standard met in SCCCS Grade 6)*** ***Text Types and Purposes*** W 1. Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (Introduced in Gr. 5, met in Gr. 6) W 1a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose. W 1b. Provide reasons that are supported by facts and details. W 1c. Link opinion and reasons using words and phrases (e.g., *for instance, in order to, in addition*). W 1 d. Provide a concluding statement or section related to the opinion presented. ***Research to Build and Present Knowledge*** W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. W 9b. Apply grade 4 Reading standards to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text"). **Grade 5: *Writing (Fifth Grade CC standard met in SCCCS Grade 6)*** ***Text Types and Purposes*** W 1. Write opinion pieces on topics or texts, supporting a point of view with reasons and information. W 1a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose. W 1b. Provide logically ordered reasons that are supported by facts and details. W 1c. Link opinion and reasons using words, phrases, and clauses (e.g., *consequently, specifically*).

apply the skills acquired in each weekly English class. The teacher instructs students to use compositional patterns and formats found in class readings. This will take place via the	W 1 d. Provide a concluding statement or section related to the opinion presented. ***Research to Build and Present Knowledge*** W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. W 9b. Apply *grade 5 Reading standards* to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point[s]").
teacher identifying topic sentences and helping the students learn to outline their compositions utilizing topic sentences. In this way main ideas and subordinated information is demonstrated. The students will construct their compositions of ideas in at least six sequential steps. Students will practice creating rough drafts, present bibliographies, and quoting from sources. **Literary Devices** Students will write in various styles and apply various compositional strategies, such as use of dialogue, figurative language, personification, metaphor, simile, and irony are all studied and practiced. . While working in science students will often use expository and descriptive genre as required by the teacher. But poetic expression may be called upon to describe the six fold symmetry of a snowflake . While in history the narrative style would be typically required.	**Grade 6: *Writing (Sixth Grade CC standard met in SCCCS Grade 6)*** ***Text Types and Purposes*** W 1. Write arguments to support claims with clear reasons and relevant evidence. (introduced in Gr. 6 and met in Gr. 7) W 1a. Introduce claim(s) and organize the reasons and evidence clearly. W 1b. Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text. W 1c. Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons. W 1 d. Establish and maintain a formal style. W 1e. Provide a concluding statement or section that follows from the argument presented. W 2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. W 2a. Introduce a topic or thesis statement; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. (Topics, strategies, structural and formatting at Grade 6 Electronic graphics and formatting introduced at Grade 7)

However comparing and contrasting the Spartans and Athens or using persuasion while writing as if Caesar to the troops would also be **Word Origins** In Latin, the language of the Roman people under study from a historical perspective, is a natural avenue for teaching grammar skills to the sixth grader. Although Latin is not a considered a modern language, its influences on the English language are noted via a close study of prefixes and suffixes common to our language and unchanged from their Latin roots. **Book Reports** And reading assignments relevant to the curriculum are assigned and assessed throughout the year on a regular basis. **Quick Writes** Related to prompts from the Main Lesson will be integrated through the blocks **The Standard Writing Process** Students begin to apply to all formalized writing activities, reviewed and reinforced through each step of brainstorming, inquiry, research, rough draft, self and peer editing, second draft, teacher editing, and final copies	W 2b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. W 2c. Use appropriate transitions to clarify the relationships among ideas and concepts. W 2d. Use precise language and domain-specific vocabulary to inform about or explain the topic. W 2e. Establish and maintain a formal style. W 2f. Provide a concluding statement or section that follows from the information or explanation presented. W 3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. W 3a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. W 3b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. W 3c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. W 3d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. W 3e. Provide a conclusion that follows from the narrated experiences or events. ***Production and Distribution of Writing*** W 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade- specific expectations for writing types are defined in standards 1–3 above.) W 5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new

for both class and public reading. Elements of peer editing are furthered with the instruction of editing codes to enhance the quality of each other's writing. Students will create sequential paragraphs from organized ideas with complete thoughts, and appropriate syntactical structures. They will practice good structure including: initial sentence, supporting material, closure and transitional phrases or information. For each out-of-class research project the students will create a multi paragraph exposition of complex topics. Students will apply the skills acquired in each weekly English class. The teacher instructs students to use compositional patterns and formats found in class readings. This will take place via the teacher identifying topic sentences and helping the students learn to outline their compositions utilizing topic sentences. In this way main ideas and subordinated information is demonstrated. The students will construct their compositions of ideas in at least six sequential steps. Students will practice creating rough drafts, present bibliographies, and quoting from sources. Students will self edit to add details, improve clarity and regroup sentences. Students are able to identify misspelled words and practice their editing skills. They will independently edit all of their first drafts.They will proofread	approach. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 6.) ***Research to Build and Present Knowledge*** W 7. Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate. W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. W 9a. Apply grade 6 Reading standards to literature (e.g., "Compare and contrast texts in different forms or genres [e.g., stories and poems; historical novels and fantasy stories] in terms of their approaches to similar themes and topics"). W 9b. Apply grade 6 Reading standards to literary nonfiction (e.g., "Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not"). ***Range of Writing*** W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

written material for spelling, punctuation and capitalization errors. Then they will rewrite material for final copy. **Dictionary and Thesaurus skills** Students are familiar with rules for syllabication as well as spelling rules and further sight words. Students will meet or exceed grade level expectations for spelling. Written reports as well as spelling bees/quizzes/activities will show proficiency. Proficiency is increased through the writing process, and spelling, dictation, and recitation continue on higher levels with literary works of note strengthening the children's deepening aptitude for and appreciation of noted writers.	
English Language Arts: *Speaking & Listening* **Oral Reports** Presentation via spoken reports emphasizes student awareness of audience and auditory rhetorical communication techniques. Via these same presentations of speaking skill students will also have the opportunity to demonstrate listening skill when they constructively critique reports. Students will answer questions posed by the teacher. They will demonstrate ability to write dictations of	**English Language Arts: *Speaking & Listening*** **Grade 4: *Speaking and Listening (Fourth Grade CC standard met in SCCCS Grade 6)*** ***Comprehension and Collaboration*** SL 3. Identify the reasons and evidence a speaker or media source provides to support particular points. (Electronic media sources in Gr. 7) **Grade 5: *Speaking and Listening (Fifth Grade CC standard met in SCCCS Grade 6)*** ***Presentation of Knowledge and Ideas*** SL 4. Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. (Topic or text at Gr. 5, opinion at Gr. 6)

varying length and follow oral and written directions. Students will demonstrate fluency through oral reading; using appropriate inflections for	SL 4a. Plan and deliver an opinion speech that: states an opinion, logically sequences evidence to support the speaker's position, uses transition words to effectively link opinions and evidence (e.g., consequently and therefore), and provides a concluding statement related to the speaker's position.
sentence closures, commas, questions and exclamations. They will also demonstrate knowledge of listening skills through appropriate use of word choice, pitch, feeling, and tone as well as nonverbal signals like posture and gesture. Students will demonstrate good listening, verbal memory and comprehension skills via participation in class lesson recall. Typically a 24 hour period is allowed before recall is asked. Teachers will ask for factual content regarding science, math and grammar blocks. Students will analyze rhetoric from historical readings. While students will demonstrate full engagement and understanding of verbally told informations and stories by rendering depictions of material and their relationship to it. Students participate in choral recitations and individual recitations of poetry and prose dramatizations. Here students will show skill in sound discrimination, recognition of rhyming words, alliterative words and other word groupings.	**Grade 6: *Speaking and Listening (Sixth Grade CC standard met in SCCCS Grade 6)*** SL 1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. SL 1a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. SL 1b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. SL 1c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. SL 1d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing. SL 2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. (Digital Introduced in Gr. 7) ***Presentation of Knowledge and Ideas*** SL 4. Present claims and findings (e.g., argument, narrative, informative, response to literature presentations), sequencing ideas logically and using pertinent descriptions, facts, and details and nonverbal elements to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

	SL 4a. Plan and deliver an informative/explanatory presentation that: develops a topic with relevant facts, definitions, and concrete details; uses appropriate transitions to clarify relationships; uses precise language and domain specific vocabulary; and provides a strong conclusion. SL 5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information. (Digital Introduced in Gr. 7) SL 6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)
English Language Arts: *Language* Students will gain further ease with verbal and written dictation. They will construct sentences with grade appropriate accuracy. They will perform oral presentations of their readings and reports as well as submitting written compositions as described further above. These verbal and written sentences will contain grade appropriate sight words and vocabulary. Students will discuss and critique reports with grade appropriate English grammar. In the weekly English class students will practice English conventions in speaking and writing. They will be able to demonstrate grade level knowledge of grammar, vocabulary and English language conventions.	**English Language Arts: *Language*** **Grade 4: *Language (Fourth Grade CC standard met in SCCCS Grade 6)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Use interrogative, relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why.) L 1c. Use modal auxiliaries (e.g., *can, may, must*) to convey various conditions. L 1f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons. ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 4 reading and content,* choosing flexibly from a range of strategies. L 4b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., *telegraph, photograph, autograph*). (Greek in Gr. 5, Latin in Gr. 6) **Grade 5: *Language (Fifth Grade CC standard met in SCCCS Grade 6)*** ***Conventions of Standard English***

	L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences. L 1b. Form and use the perfect (e.g., I had walked; I have walked; I will have walked) verb tenses. L 1e. Use correlative conjunctions (e.g., either/or, neither/nor). L 3b. Compare and contrast the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems. L 4b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., *photograph, photosynthesis*). (Greek in Gr. 5, Latin in Gr. 6) L 5a. Interpret figurative language, including similes and metaphors, in context. (Developed throughout the grades)
	Grade 6: *Language (Sixth Grade CC standard met in SCCCS Grade 6)* ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L1 a. Ensure that pronouns are in the proper case (subjective, objective, possessive). L 1b. Use all pronouns, including intensive pronouns (e.g., myself, ourselves) correctly. L 1c. Recognize and correct inappropriate shifts in pronoun number and person. L 1d. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). L 1e. Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.

	L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements. L 2b. Spell correctly. ***Knowledge of Language*** L 3. Use knowledge of language and its conventions when writing, speaking, reading, or listening. L 3a. Vary sentence patterns for meaning, reader/ listener interest, and style. L 3b. Maintain consistency in style and tone. ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies. L 4a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. L 4b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible). L 4c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. (Digital Introduced in Gr. 7) L 4d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). L 5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

	L5 a. Interpret figures of speech (e.g., personification) in context. L 5b. Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words. L 5c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., stingy, scrimping, economical, unwasteful, thrifty). L 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
Mathematics ***Introduction*** *Sixth grade students continue to be supported to develop their specific needs, abilities, and aptitudes for the subject of math. Proficiency in number sense, beginning algebra, geometry, statistics, and reasoning are all stressed during this year of study. Ratios; percent; proportions; geometric drawing with instruments; business math; algebra; graphing (bar, circle, line); mean, median, and mode; geometric formulas with plane and solid shapes; positive and negative numbers. By the end of grade six, students can demonstrate mastery in the four arithmetic operations with whole numbers, positive fractions, positive decimals, and positive and negative integers. They can accurately explain, identify, compute, and solve complex problems.*	**Mathematics:** **Mathematics: *Measurement and Data*** **Grade 2: *Measurement and Data (Second Grade CC standard met in SCCCS Grade 6)*** ***Represent and interpret data.*** MD 9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units. (Introduced at Grade 3) MD 10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. (Introduced at Grade 3) **Grade 3: *Measurement and Data (Third Grade CC standard met in SCCCS Grade 6)*** ***Geometric measurement: understand concepts of area and relate area to multiplication and to addition.*** MD 7. Relate area to the operations of multiplication and addition. MD 7c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning. **Grade 4: *Measurement and Data (Fourth Grade CC standard met in SCCCS Grade 6)*** ***Geometric measurement: understand concepts of angle and measure angles.*** MD 6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified

Algebra Students will gain a working knowledge of simple equations such as formulae and ratios; which will be be further applied to linear equations in 7th grade. The concept of slope which was previously described as whole numbers will now be described with fractions. Perimeter and area problems will use several variables. Math sentences will be written in the context of business math where students can apply simple interest formulas. **Statistics and Probability** Students are able to apply this knowledge to their developing understanding of statistics and probability**,** including a conceptualization and practice of concepts of mean, median, mode range, outliers, central tendency, of data sets and population samples. They begin using theoretical and experimental probabilities to make predictions, and use a variety of methods to explain mathematical reasoning. **Ratios and Proportions** Students will learn to conceptually understand and work with percentage, cross multiplication, solve ratio problems, conversion of fractions to decimals and percentages then reverse. ratios and proportions, and learn to compute	measure. Forms drawn freehand at Gr. 4, at Gr. 6 with protractor MD 7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure. **Mathematics: *Ratios and Proportional Relationships*** **Grade 6: R*atios and Proportional Relationships (Sixth Grade CC standard met in SCCCS Grade 6)*** ***Understand ratio concepts and use ratio reasoning to solve problems.*** RPR 1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."* RPR 3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. Developed further in grades 7 and 8 RPR 3b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?* RPR 3c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. RPR 3d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. **Mathematics: *The Number System*** **Grade 6: *The Number System (Sixth Grade CC standard met in SCCCS Grade 6)*** ***Apply and extend previous understandings of multiplication and division to divide fractions by fractions.*** NS 1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get*

percentages. Students are able to reduce and expand fractions as well as use LCD to work problems.

Formulas and Business Math

Review of the basic formulas learned for area and perimeter of rectangles and squares leads to the use of more advanced formulas such as area and perimeter of a circle, including introduction of the concept of pi. The study of borrowing and lending supports the social science curriculum component bank development during medieval times. . They will analyze, use and gain understanding of bar graphs, pie charts, scatter plots, and bell curves.They will employ their knowledge of ratios and proportions to bookkeeping, margin, profit and loss, computing and compounding interest, dividends and principal on checking and savings accounts, bills of various types, simple interest and selling price.

Geometric Shapes and Ratios

Letters begin to substitute for numbers in formulas involving geometric shapes and in ratios to represent an unknown part of an expression. This culminates in students developing the ability to solve one-step linear equations. Students learn both pictorially and arithmetically computation and construction

if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?

Compute fluently with multi-digit numbers and find common factors and multiples.

NS 2. Fluently divide multi-digit numbers using the standard algorithm.

NS 3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

NS 4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor.

For example, express 36 + 8 as 4 (9 + 2).

Apply and extend previous understandings of numbers to the system of rational numbers.

NS 7. Understand ordering and absolute value of rational numbers.

NS 7d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*

Mathematics: *Geometry*

Grade 4: *Geometry (Fourth Grade CC standard met in SCCCS Grade 6)*

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

G 1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

G. 2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. (Two dimensional shapes should include special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals, e.g., rhombus, square, rectangle, parallelogram, trapezoid.)

G 3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Grade 5: *Geometry (Fifth Grade CC standard met in SCCCS Grade 6)*

Graph points on the coordinate plane to solve real-world and mathematical problems.

G 1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates.

Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the

of an area, circumference, radius, diameter, angles, arcs and chords of a circle. **Pythagorean Theorem** The concept of the Pythagorean Theorem is introduced to the sixth grader. **Compass** The compass as a mathematical instrument assists in the creation of accurate pie charts to graphically represent percentages. With an understanding of percentage and formulaic thinking. Students learn the square measure of an area both pictorially and arithmetically. They learn construction with a compass and a straight edge, of polygons, angles, perpendicular bisectors, parallel lines and complementary angles. **Geometry** Geometrical drawing is one of the cornerstones of sixth grade, with an emphasis on precision. For the first time students will use tools and instruments to create forms. The proper use of a compass, ruler, T-square, and straight edge will challenge the child's artistic abilities in finding new and beautiful patterns in five, six, twelve, and twenty-four, division representations of the circle and other geometric designs, , especially those found in nature (snowflakes, honeycombs, lilies). In the	convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate). G 2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. **Mathematics: *Statistics and Probability*** **Grade 6: *Statistics and Probability (Sixth Grade CC standard met in SCCCS Grade 6)*** ***Develop understanding of statistical variability.*** SP 1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

five fold division of the circle to re-create the structure of a rose phi is revealed to students. This then leads to study of Fibonacci numbers and their expression in many natural forms.Application of skills from mathematical constructs and formulas such as radius, diameter, and circumference are essential to creating these geometric forms. Also embedded in the work with geometrical drawings is the study of angles of a circle, line, and triangle. Properties of the six types of triangles (Right, Isosceles, Equilateral, Scalene, Obtuse, and Acute) are surveyed along with the ability to solve for a missing angle. The child's study of geography now takes him to nearby countries—Canada and Central and South America. Greater accuracy is developed in map making skills with the use of new drawing instruments and a developed understanding of longitude and latitude.	
Science ***Introduction*** *At this developmental juncture, the student needs an objective look at the world that dovetails with the magnitude of growth in intellectual capacities. The science curriculum thus lends itself to the study of physics as an introduction to laboratory science in the*	**Science**

classroom guided by the core principles of public Waldorf education.	
Electricity and Magnetism Positive and negative poles, attraction and repulsion, gravity, the magnetic fields of the Earth, types of magnets, magnetic force through various substances, and electromagnetism are introduced, and then pursued further in the upper grades. Students will study natural sounds, pitch, overtones, timbre, the Doppler effect, chladni's sound figures and the speed of sound through various media.	**Earth's Systems** **MS-ESS2-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.** [Clarification Statement: Emphasis is on the ways water changes its state as it moves through the multiple pathways of the hydrologic cycle. Examples of models can be conceptual or physical.] [Assessment Boundary: A quantitative understanding of the latent heats of vaporization and fusion is not assessed.] **MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.** [Clarification Statement: Emphasis is on how air masses flow from regions of high pressure to low pressure, causing weather (defined by temperature, pressure, humidity, precipitation, and wind) at a fixed location to change over time, and how sudden changes in weather can result when different air masses collide. Emphasis is on how weather can be predicted within probabilistic ranges. Examples of data can be provided to students (such as weather maps, diagrams, and visualizations) or obtained through laboratory experiments (such as with condensation).] [Assessment Boundary: Assessment does not include recalling the names of cloud types or weather symbols used on weather maps or the reported diagrams from weather stations.] **MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.** [Clarification Statement: Emphasis is on how patterns vary by latitude, altitude, and geographic land distribution. Emphasis of atmospheric circulation is on the sunlight-driven latitudinal banding, the Coriolis effect, and resulting prevailing winds; emphasis of ocean circulation is on the transfer of heat by the global ocean convection cycle, which is constrained by the Coriolis effect and the

	outlines of continents. Examples of models can be diagrams, maps and globes, or digital representations.] [Assessment Boundary: Assessment does not include the dynamics of the Coriolis effect.]
Physics- Sound Physics is introduced experientially through the continued use of musical instruments and the larynx, these are tools used to investigate the qualities of acoustics before scientific conclusions are drawn.	**Engineering Design** **MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.** **MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.** **MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.** **MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.**
Physics - Optics Students study the nature of light, reflection and refraction with the geometry of mirrors and the laws of lenses. They study how color comes into being in the atmosphere and then disperses via prisms, concave and convex lenses, afterimages. They will expermient with the invisibility of light unless it's reflected by a surface, and the geometry of shadows. They will make an artistic study of and observation of light, shade and contour, sclae of light and	**Engineering Design** **MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.** **MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.** **MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.**

darkness as well as experience primary, secondary and tertiary colors.	**MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.**
Physics- Heat Experiments with heat will allow students to observe and generate theories on the effects of heat on various substances of matter. They will learn about: ● sources and nature of heat energy ● heat and atmospheric expansion ● fahrenheit and centigrade thermometers ● energy transfer to the Earth ● changes of volume by heating solids, liquids and gases ● evaporation and condensation ● using the thermometer of the senses from touch to sight ● conduct experiments in expansion and contraction ● convection of magma in the context of plate tectonics ● meridians and parallels of latitude ● electromagnetic nature of heat the transfer and transmission of heat; radiation, conduction and convection	**Energy** **MS-PS3-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.*** [Clarification Statement: Examples of devices could include an insulated box, a solar cooker, and a Styrofoam cup.] [Assessment Boundary: Assessment does not include calculating the total amount of thermal energy transferred.] **MS-PS3-4. Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.** [Clarification Statement: Examples of experiments could include comparing final water temperatures after different masses of ice melted in the same volume of water with the same initial temperature, the temperature change of samples of different materials with the same mass as they cool or heat in the environment, or the same material with different masses when a specific amount of energy is added.] [Assessment Boundary: Assessment does not include calculating the total amount of thermal energy transferred.] **MS-PS3–5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.** [Clarification Statement: Examples of empirical evidence used in arguments could include an inventory or other representation of the energy before and after the transfer in the form of temperature changes or motion of object.] [Assessment Boundary: Assessment does not include calculations of energy.]
Scientific Reporting Students learn how to represent their experiences and observations in the format of a classical scientific report. Sixth grade students will develop scientific hypotheses.	

They will learn to utilize appropriate equipment to conduct experiments and scientific research. They will make classifications (for example using Mohs hardness scale). They will write reports, give oral presentations, work with maps, read tabulations and diagrams, and create drawings. From observations made during nature walks students will sketch, record, describe and interpret.	
Geology and Mineralogy The polarities of the mineral world are explored, from the fiery igneous rock to watery sedimentary rocks and the contrasts in formation from volcanoes and caverns, stalactites and stalagmites, and other geomorphic forms are studied. Biomes, Chaparral Ecology. Resources such as burnable fuels (oil, petroleum and coal), industrial manufacturing materials (limestone, chalk, marble, quartz, semiconductors, sand), metals (iron, copper, zinc, lead, etc.), and precious gemstones are investigated for source and use. Students will learn about the erosion and weathering of mountain ranges down to sandy beaches; how soil is formed and water is transported. They will learn about landforms such as glaciers, volcanoes and icebergs. Students will create free hand drawings of continents and bodies of water.	

Environment The study of geology braids with continued study of geography, and local geography, climate, and topography are concepts expanded for the sixth grader. Sit spots in nature, earth stewardship, nature journals, environmental movement, local flora and fauna, recycling, and composting. They will study and observe how the winds and weather arise through the interaction and convection currents of heat and cold air masses, ocean currents, rotation and tilt of the earth. Students will compare and contrast various climates and their vegetation (tundra, grasslands, deserts). Students will study Biotic zones. Students will study the limestone cycle of the Earth; as well as the formation of caves.	**Molecules and Organisms: Structures and Processes** **MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.** [Clarification Statement: Emphasis is on developing evidence that living things **(**including Bacteria, Archaea, and Eukarya)** are made of cells, distinguishing between living and non-living things, and understanding that living things may be made of one cell or many and varied cells. ****Viruses, while not cells, have features that are both common with, and distinct from, cellular life.]** **MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.** [Clarification Statement: Emphasis is on the cell functioning as a whole system and the primary role of identified parts of the cell, specifically the nucleus, chloroplasts, mitochondria, cell membrane, and cell wall.] [Assessment Boundary: Assessment of organelle structure/function relationships is limited to the cell wall and cell membrane. Assessment of the function of the other organelles is limited to their relationship to the whole cell. Assessment does not include the biochemical function of cells or cell parts.] **MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.** [Clarification Statement: Emphasis is on the conceptual understanding that cells form tissues and tissues form organs specialized for particular body functions. Examples could include the interaction of subsystems within a system and the normal functioning of those systems.] [Assessment Boundary: Assessment does not include the mechanism of one body system independent of others. Assessment is limited to the circulatory, excretory, digestive, respiratory, muscular, and nervous systems.] **MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and**

	specialized plant structures affect the probability of successful reproduction of animals and plants respectively. [Clarification Statement: Examples of behaviors that affect the probability of animal reproduction could include nest building to protect young from cold, herding of animals to protect young from predators, and vocalization of animals and colorful plumage to attract mates for breeding. Examples of animal behaviors that affect the probability of plant reproduction could include transferring pollen or seeds; and, creating conditions for seed germination and growth. Examples of plant structures could include bright flowers attracting butterflies that transfer pollen, flower nectar and odors that attract insects that transfer pollen, and hard shells on nuts that squirrels bury.] **MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.** [Clarification Statement: Examples of local environmental conditions could include availability of food, light, space, and water. Examples of genetic factors could include large breed cattle and species of grass affecting growth of organisms. Examples of evidence could include drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, and fish growing larger in large ponds than they do in small ponds.] [Assessment Boundary: Assessment does not include genetic mechanisms, gene regulation, or biochemical processes.] **MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.** [Assessment Boundary: Assessment does not include mechanisms for the transmission of this information.]
Astronomy	

Using their newfound skills with the compass and straightedge, students will practice naked-eye astronomy, drawing representations of the movement of the stars through the quadrants of the sky. Students will gain knowledge of the phases of the moon as well as its position in relation to the sun. Understanding of the Pole Star and its use in orienting oneself on the earth is taught. Mythologies of the constellations and the ability to identify them in the night sky are studied in depth during the sixth grade year.	
Technology Keyboarding and computer literacy will be acquired to aid in research, critique literary works, and expository compositions	
Other Embedded Sixth Grade Science Content Standards Through the other juxtaposed blocks, plate tectonics, Earth layers, earthquakes,volcanoe, , food chain, food web, and renewable vs. non-renewable resources will be further investigated.	**Heredity: Inheritance and Variation of Traits** **MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.** [Clarification Statement: Emphasis is on using models such as Punnett squares, diagrams, and simulations to describe the cause and effect relationship of gene transmission from parent(s) to offspring and resulting genetic variation.] **NOTE: THIS STANDARD IS MET IN THE 5TH GRADE CURRICULUM**
Geography Place-based education, local watershed issues, physical geography and biomes, global geography, European geography.	**Earth and Human Activity** **MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.*** [Clarification Statement: Examples of the design process include examining human environmental impacts, assessing the kinds of solutions that are feasible, and designing and

	evaluating solutions that could reduce that impact. Examples of human impacts can include water usage (such as the withdrawal of water from streams and aquifers or the construction of dams and levees), land usage (such as urban development, agriculture, or the removal of wetlands), and pollution (such as of the air, water, or land).] **MS-ESS3–5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.** [Clarification Statement: Examples of factors include human activities (such as fossil fuel combustion, cement production, and agricultural activity) and natural processes (such as changes in incoming solar radiation or volcanic activity). Examples of evidence can include tables, graphs, and maps of global and regional temperatures, atmospheric levels of gases such as carbon dioxide and methane, and the rates of human activities. Emphasis is on the major role that human activities play in causing the rise in global temperatures.]

Sycamore Creek Community Charter School

Public Waldorf Inspired Curriculum Cross Articulation with California Aligned Common Core Standards and Next Generation Science Standards

GRADE 7

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	California Aligned Common Core Standards and Next Generation Science Standards
English Language Arts: *Reading Literature* ***Introduction*** *The seventh-grade curriculum offers a true Renaissance education; mirroring the physical and cognitive changes in students fully entering adolescence. Seventh graders witness their same desire to express themselves and to assert their independence as historical biographies from the Middle Ages to Early Modern Times (particularly from the Renaissance, Reformation and Age of Exploration) exhibit, and thus become the course of study for literary analysis.* *Literature: Classical literature, Shakespeare.*	**English Language Arts: *Reading Literature*** **Grade 5: *Reading Literature (Fifth Grade CC standard met in SCCCS Grade 7)*** ***Integration of Knowledge and Ideas*** RL 7. Analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem). **Grade 6: *Reading Literature (Sixth Grade CC standard met in SCCCS Grade 7)*** RL 1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. (introduced in Gr. 6 and met in Gr. 7) RL 7. Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including contrasting what they "see" and "hear" when reading the text to what they perceive when they listen or watch. (Introduced in Gr. 6 through comparison with a "live version" of the text)

	Grade 7: *Reading Literature (Seventh Grade CC standard met in SCCCS Grade 7)* RL 1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. RL 2. Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text. RL 3. Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot). RL 4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration) on a specific verse or stanza of a poem or section of a story or drama. (See grade 7 Language standards 4–6 for additional expectations.) RL 5. Analyze how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning. RL 6. Analyze how an author develops and contrasts the points of view of different characters or narrators in a text. RL 9. Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history. RL 10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.
English Language Arts: *Reading Informational Texts* *As stated in the standards, in addition:* **Renaissance Research Paper** Students engage in the writing of a research paper based on a topic from the social studies curriculum, typically a person or event from the Renaissance or another studied time period. Documentation of sources is taught in depth and students are required to work with bibliographic information in detail. **Media Analysis** Media analysis continues in seventh grade, offering students ample opportunity to break down messages in text and image and affording	**English Language Arts: *Reading Informational Texts*** **Grade 5: *Reading Informational Texts (Fifth Grade CC standard met in SCCCS Grade 7)*** ***Craft and Structure*** RI 6. Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent. (Introduced in Gr. 7 and met in Gr. 8) ***Integration of Knowledge and Ideas*** RI 7. Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (met in Gr. 5 except digital sources introduced in Gr. 7) **Grade 6: *Reading Informational Texts (Sixth Grade CC standard met in SCCCS Grade 7)*** ***Key Ideas and Details*** RI 1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. (Formal analysis introduced in Gr. 6) ***Craft and Structure*** RI 5a. Analyze the use of text features (e.g., graphics, headers, captions) in popular media. (Analysis of electronic media text features at grade 8) ***Integration of Knowledge and Ideas***

the experience of exposing a critical eye to public work. **Internet-based research** Research writing and technological competence training begins with internet-based scholarly research, database searches, basic word processing, typing, and note-taking open the students to the world of computing with developing fluency.	RI 8. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.
	Grade 7: *Reading Informational Texts (Seventh Grade CC standard met in SCCCS Grade 7)* RI 1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. RI 2. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text. RI 3. Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events). RI 4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone. (CA--See grade 7 Language standards 4–6 for additional expectations.) RI 5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas. (Introduced in Gr. 7, met in Gr. 8) RI 5a. Analyze the use of text features (e.g., graphics, headers, captions) in public documents. RI 6. Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others. (Introduced in Gr. 7, met in Gr. 8) RI 7. Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words). RI 8. Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims. (Introduced in Gr. 7, met in Gr. 8) RI 9. Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts. (Introduced in Gr. 7, met in Gr. 8) RI 10. By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range. (Introduced in Gr. 7, met in Gr. 8)
English Language Arts: *Writing* **As stated in the standards, in addition:**	**English Language Arts: *Writing***

English/Grammar Grammar, spelling and punctuation **Creative Writing** Seventh grade affords students the opportunity to further develop their writing skills through creative writing in a sequence of poetry and prose that envelops the elements of wish, wonder, and surprise. **Literary Devices** Continued study of literary devices marks the seventh-grade year, as foreshadowing, irony, parody, perspective, and point of view are all explored in great detail through literature and writing, and students are able to fluently produce both fictional and autobiographical narratives and speak to the use of voice, tone, diction, etc. in the contents of written text. **Renaissance Research Paper** Students engage in the writing of a research paper based on a topic from the social studies curriculum, typically a person or event from the Renaissance or another studied time period. Documentation of sources is taught in depth and students are required to work with bibliographic information in detail. **Media Analysis** Media analysis continues in seventh grade, offering students ample opportunity to break down messages in text and image and affording the experience of exposing a critical eye to public work. **Internet-based research** Research writing and technological competence training begins with internet-based scholarly	**Kindergarten: *Writing (Kindergarten CC standard met in SCCCS Grade 7)*** ***Production and Distribution of Writing*** W 6. With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers. **Grade 1: *Writing (First Grade CC standard met in SCCCS Grade 7)*** ***Production and Distribution of Writing*** W 6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. **Grade 3: *Writing (Third Grade CC standard met in SCCCS Grade 7)*** ***Production and Distribution of Writing*** W 6. With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others. ***Research to Build and Present Knowledge*** W 8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (met in Gr. 4 except digital sources introduced in Gr. 7) **Grade 4: *Writing (Fourth Grade CC standard met in SCCCS Grade 7)*** ***Production and Distribution of Writing*** W 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting. (introduced in Gr. 7 and met in Gr. 8) ***Research to Build and Present Knowledge*** W 8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes, paraphrase, and categorize information, and provide a list of sources. **(**met in Gr. 4 except digital sources introduced in Gr. 7) **Grade 5: *Writing (Fifth Grade CC standard met in SCCCS Grade 7)*** ***Production and Distribution of Writing*** W 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting. (introduced in Gr. 7 met in Gr. 8) ***Research to Build and Present Knowledge***

research, database searches, basic word processing, typing, and note-taking open the students to the world of computing with developing fluency.	W 8. Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (met in Gr. 5 except digital sources introduced in Gr. 7) **Grade 6: *Writing (Sixth Grade CC standard met in SCCCS Grade 7)*** ***Text Types and Purposes*** W 1. Write arguments to support claims with clear reasons and relevant evidence. (Introduced in Gr. 6, met in Gr. 7) W 1a. Introduce claim(s) and organize the reasons and evidence clearly. W 1b. Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text. W 1c. Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons. W 1 d. Establish and maintain a formal style. W 1 e. Provide a concluding statement or section that follows from the argument presented. W 2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (Introduced in Gr. 6, met in Gr. 7) W 2a. Introduce a topic **or thesis statement**; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. (Topics, strategies, structural and formatting met at Gr 6 Electronic graphics and formatting introduced in Gr. 7)
	Grade 7: *Writing (Seventh Grade CC standard met in SCCCS Grade 7)* W 1. Write *arguments* to support claims with clear reasons and relevant evidence. W 1a. Introduce claim(s), acknowledge and address alternate or opposing claims, and organize the reasons and evidence logically. W 1b. Support claim(s) or counterarguments with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. W 1c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence. W 1 d. Establish and maintain a formal style. W 1e. Provide a concluding statement or section that follows from and supports the argument presented. W 2. Write *informative/explanatory texts* to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. W 2a. Introduce a topic or thesis statement clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification,

	comparison/contrast, and cause/ effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. (Introduced in 7th, met in 8th) W 2b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. W 2c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts. W 2d. Use precise language and domain-specific vocabulary to inform about or explain the topic. W 2e. Establish and maintain a formal style. W 2f. Provide a concluding statement or section that follows from and supports the information or explanation presented. W 3. Write *narratives* to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. W 3a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. W 3b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. W 3c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one-time frame or setting to another. W 3d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. W 3e. Provide a conclusion that follows from and reflects on the narrated experiences or events. W 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) W 5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 7.) (Initial use in Gr. 7, expanding in Gr. 8) W 6. Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources. W 7. Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation. W 8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and

	conclusions of others while avoiding plagiarism and following a standard format for citation. (Introduced in Gr. 7, met in Gr. 8) W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. W 9a. Apply *grade 7 Reading standards* to literature (e.g., "Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history"). W 9b. Apply *grade 7 Reading standards* to literary nonfiction (e.g. "Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound, and the evidence is relevant and sufficient to support the claims"). W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
English Language Arts: *Speaking & Listening* *As stated in the standards, in addition:* **Renaissance Research Paper** Students will present, orally, on their research paper on a topic from the social studies curriculum, typically a person or event from the Renaissance or another studied time period.	**English Language Arts: *Speaking & Listening*** **Grade 2: *Speaking and Listening (Second Grade CC standard met in SCCCS Grade 7)*** ***Presentation of Knowledge and Ideas*** SL 5. Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (Met in Gr. 2 except audio recording aspect is introduced in Gr. 7) W 6. With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. **Grade 3: *Speaking and Listening (Third Grade CC standard met in SCCCS Grade 7)*** ***Presentation of Knowledge and Ideas*** SL 5. Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. **Grade 4: *Speaking and Listening (Fourth Grade CC standard met in SCCCS Grade 7)*** ***Comprehension and Collaboration*** SL 3. Identify the reasons and evidence a speaker **or media source** provides to support particular points. (met in Gr. 6 except electronic media sources introduced in Gr. 7) ***Presentation of Knowledge and Ideas*** SL 5. Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes. (visual display aspect of standard met in Gr. 4, Use of electronic media in Gr. 7) **Grade 5: *Speaking and Listening (Fifth Grade CC standard met in SCCCS Grade 7)*** ***Comprehension and Collaboration***

	SL 3. Summarize the points a speaker or media source makes and explain how each claim is supported by reasons and evidence, and identify and analyze any logical fallacies. CA SL 5. Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. **Grade 6: *Speaking and Listening (Sixth Grade CC standard met in SCCCS Grade 7)*** ***Comprehension and Collaboration*** SL 2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. (met in Gr. 6 except digital aspect is met in Gr. 7) SL 3. Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not. ***Presentation of Knowledge and Ideas*** SL 5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information. (met in Gr. 6 except digital aspect is met in Gr. 7)
	Grade 7: *Speaking and Listening (Seventh Grade CC standard met in SCCCS Grade 7)* ***Comprehension and Collaboration*** SL 1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 7 topics, texts, and issues,* building on others' ideas and expressing their own clearly. SL 1a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. SL 1b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. SL 1c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. SL 1d. Acknowledge new information expressed by others and, when warranted, modify their own views. SL 2. Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study. (Begins in Gr. 7, expands and develops in Gr. 8) SL 3. Delineate a speaker's argument and specific claims, and attitude toward the subject, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence. (Begins in Gr. 7, expands and develops in Gr. 8) ***Presentation of Knowledge and Ideas*** SL 4. Present claims and findings (e.g., argument, narrative, summary presentations), emphasizing

	salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation. SL 4a. Plan and present an argument that: supports a claim, acknowledges counterarguments, organizes evidence logically, uses words and phrases to create cohesion, and provides a concluding statement that supports the argument presented. (Begins in Gr. 7, met in Gr. 8) SL 5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. (Begins in Gr. 7, met in Gr. 8) SL 6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 for specific expectations.)
English Language Arts: *Language* *As stated in the standards.*	**Grade 2: *Language (Second Grade CC standard met in SCCCS Grade 7)*** ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on *grade 3 reading and content,* choosing flexibly from a range of strategies. L 4e. Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases in all content areas. (met in Gr. 3 except digital aspect is met in Gr. 7) **Grade 3: *Language (Third Grade CC standard met in SCCCS Grade 7)*** ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on *grade 3 reading and content,* choosing flexibly from a range of strategies. L 4d. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases *in all content areas*. (met in Gr. 3 except digital aspect is met in Gr. 7) **Grade 5: *Language (Fifth Grade CC standard met in SCCCS Grade 7)*** ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 5 reading and content,* choosing flexibly from a range of strategies. L 4c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases and to identify alternate word choices *in all content areas*. (met in Gr.5 except digital aspect is met in Gr. 7) **Grade 6: *Language (Sixth Grade CC standard met in SCCCS Grade 7)*** ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on *grade 3 reading and content,* choosing flexibly from a range of strategies.

	L 4c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. (met in Gr. 6 except digital aspect is met in Gr. 7)
	Grade 7: *Language (Seventh Grade CC standard met in SCCCS Grade 7)* ***Comprehension and Collaboration*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Explain the function of phrases and clauses in general and their function in specific sentences. L 1b. Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas. L 1c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.* L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2a. Use a comma to separate coordinate adjectives (e.g., *It was a fascinating, enjoyable movie* but not *He wore an old[,] green shirt*). L 2b. Spell correctly. L 3. Use knowledge of language and its conventions when writing, speaking, reading, or listening. L 3a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy. L 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 7 reading and content*, choosing flexibly from a range of strategies. L 4a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. L 4b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *belligerent, bellicose, rebel*). L 4c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech or trace the etymology of words. CA

	L 4d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). L 5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. L 5a. Interpret figures of speech (e.g., literary, biblical, and mythological allusions) in context. L 5b. Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words. L 5c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *refined, respectful, polite, diplomatic, condescending*). L 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
Mathematics ***Introduction*** *Instruction continues to accommodate low and high academically achieving students. The trajectory of the mathematics curriculum in seventh grade offers a continuation of concepts introduced and reinforced in the sixth grade, such as probability, statistical analysis and pre-algebra. Seventh grade students who have completed pre-algebra will be offered Algebra I. A Main Lesson block provides an introduction to Algebra and thereafter work is continued in weekly practices periods. In addition to this, mathematics practices are embedded in Science Blocks such as Astronomy, Physics, Nutrition, Chemistry and Human Anatomy which includes statistical analysis, scientific notation, analysis of graphs and charts and problem solving strategies.* **Mathematics: *Operations and Algebraic Thinking*** *As stated in the standards, in addition:* ● Verbal descriptions of operations	**Mathematics:** **Mathematics: *Operations and Algebraic Thinking*** **Grade 5: *Operations and Algebraic Thinking (Fifth Grade CC standard met in SCCCS Grade 7)*** ***Write and interpret numerical expressions.*** OAT 1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. OAT 2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.* **Mathematics: *Expressions and Equations*** **Grade 6: *Expressions and Equations (Sixth Grade CC standard met in SCCCS Grade 7)*** ***Apply and extend previous understandings of arithmetic to algebraic expressions.*** EE 1. Write and evaluate numerical expressions involving whole-number exponents. EE 2. Write, read, and evaluate expressions in which letters stand for numbers. EE 2a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.* EE 2b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.* EE 2c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including

● Order of operations **Mathematics: *The Number System*** *As stated in the standards, in addition:* ● Scientific notation is learned and applied in blocks on: *Physics, Astronomy, Nutrition, Chemistry* and *Physiology* ● Number line, real numbers, signed numbers, magnitude of zero, set theory, inverse operations, factoring, estimation and rounding ● Pi and Phi are mastered in the context of proportions in nature; distinguished from rational numbers; understood both pictorially and mathematically ● Conversion of decimals to fractions and percentages; ordering of decimals, fractions, percentages; relationship to ratio and proportions; use in world problems ● Business, banking and bookkeeping mathematics and terminology: reading bills, calculating expenses, discounts, commission, salaries, selling price, margin, markup, profit, loss, mortgages, principle, interest (simple and compound), interest income, dividends, etc. ● Exponents (especially in the context of macroscopic and micro-scopic magnitudes in Science. ● Mixed numbers, fractions: reducing and expanding fractions by use of lowest common denominator.	those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.* EE 3. Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.* EE 4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.* ***Reason about and solve one-variable equations and inequalities.*** EE 5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. EE 6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. EE 7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers. EE 8. Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams. **Grade 7: *Expressions and Equations (Seventh Grade CC standard met in SCCCS Grade 7)*** *Solve real-life and mathematical problems using numerical and algebraic expressions and equations.* EE 4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. EE 4a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? (Continues in Gr. 8 **Mathematics: *Ratios and Proportional Relationships*** **Grade 7: *Ratios and Proportional Relationships (Seventh Grade CC standard met in SCCCS Grade 7)***

• Pythagorean Theorem: raising to a power and extracting the root of a perfect square integer. (a continuation of 6th grade) • Absolute value **Geometry** As stated in the standards, in addition: Seventh grade mathematics introduces students to the basic concepts of geometry. Math grouping continues and offers flexibility for students to move ahead as necessary for full realization of aptitude and ability. Students see geometric principles applied to the lawfulness of perspective and learn of their development during the Renaissance. They work with and study the Pythagorean Theorem to develop several proofs of the theorem and to compute the unknown side. Specifically: • Cartesian graphing of functions: plot parabolic, circular and linear shapes; derive relationships in form; mirrored forms across axes and through points • Plane geometry, perspective geometry construction (using compass, straight edge, protractor), study of proportions in nature. • Analytic geometry: plotting tables that describe geometric forms • Euclidian geometry: circumference, radius, diameter, angles, arc, chords, angles,	***Analyze proportional relationships and use them to solve real-world and mathematical problems.*** RPR 1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $^{1/2}/_{1/4}$ miles per hour, equivalently 2 miles per hour.* **Mathematics: *The Number System*** **Grade 6: *The Number System (Sixth Grade CC standard met in SCCCS Grade 7)*** ***Apply and extend previous understandings of numbers to the system of rational numbers.*** NS 5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. Introduced at Gr. 6 NS 6. Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. NS 6a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite. NS 6b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. NS 6c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. NS 7. Understand ordering and absolute value of rational numbers. NS 7a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.* NS 7b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3°C > –7°C to express the fact that –3°C is warmer than –7°C.* NS 7c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.* (Introduced at Gr. 6) NS 8. Solve real-world and mathematical problems by graphing points in all four quadrants of the

bisection of angles, bisection of line segments, construction of perpendiculars, perpendicular bisectors, parallel lines, quadrilaterals, regular polygons, congruence

- Proof of the Pythagorean Theorem on a large scale introduces this study which is later completed on graph paper to find the unknown side of a triangle

Studying three-dimensional solids

Studying three-dimensional platonic solids, students learn to compute surface area and volume, and understand how they change as the scale of the shape changes. Students work with equations to become adept at their manipulation and understand the principles that make such manipulation possible. (Platonic Solid geometry is studied more in depth in G8)

Fractions, Complex Equations

By the end of grade seven, students are adept at manipulating numbers and equations and can not only understand but can explain to younger students the general principles at work. A seventh grader can understand and fluidly use factoring, common and least common denominators, and the properties of exponents to solve increasingly complex equations.

Measurement

As stated in the standards, in addition:

Area and perimeter (polygons and platonic solids)

Students make conversions between different units of measurement and use those conversions to solve meaningful problems.

coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. (Introduced at Gr. 6)

Grade 7: *The Number System (Seventh Grade CC standard met in SCCCS Grade 7)*

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

NS 1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

NS 1a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*

NS 1b. Understand $p + q$ as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.

NS 1c. Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.

NS 1d. Apply properties of operations as strategies to add and subtract rational numbers.

NS 3. Solve real-world and mathematical problems involving the four operations with rational numbers.

Mathematics: *Geometry*

Grade 5: *Functions (Fifth Grade CC standard met in SCCCS Grade7)*

Graph points on the coordinate plane to solve real-world and mathematical problems.

G 1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates.

Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).

G 2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Grade 6: *Functions (Sixth Grade CC standard met in SCCCS Grade7)*

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

G 1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in

- In the context of *Physics* scales and conversions are introduced: energy (joules), amperage, voltage, resistance, cps (Hz), decibels, length, volume, time, weight, mass, capacity
- In *Projective Geometry* students study architectural scaling; draw exact replicas of buildings; study three dimensionality

Ratio, Proportion

Training in usage of ratio and proportion are reviewed and expanded from the former year, as is the use of percentage equations in order to effectively understand concepts such as simple and compound interest.

Graphing

They graph linear and elementary non-linear functions and understand the idea of slope and its relation to ratio, and can compute said functions with equations involving time, rate, speed, etc.

Mathematics: *Statistics and Probability*

As stated in the standards, in addition:

Finally, statistical probability, theoretical, and experimental probability form the foundation from which students can extrapolate more complicated predictions not only from mathematical perspectives, but from the standpoint of curricular scientific perspectives as well. In the study of *Geography* students are introduced to different ways of representing date: box and whisker plots (median, upper and lower

the context of solving real-world and mathematical problems. (Introduced in Gr. 6)

Grade 7: *Functions (Seventh Grade CC standard met in SCCCS Grade 7)*

Draw, construct, and describe geometrical figures and describe the relationships between them.

G 1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. (Continues in Gr. 8)

G 2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

Not typically done with technology at grade 7 (See summary note at the end of this Gr. 7 document.)

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

G 4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

G 5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

Mathematics: *Statistics and Probability*

Grade 6: *Statistics and Probability (Sixth Grade CC standard met in SCCCS Grade 7)*

Develop understanding of statistical variability.

SP 1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

quartile, averages), scatter plots, stem-and-leaf plot, histogram to study economy, population, education, manufacture, etc.	
Science ***Introduction*** *Seventh grade builds on the strong science curriculum introduced in the sixth grade as the students see how astronomy, mapping, and the physical sciences were used by navigators on land and sea to chart and discover new territories in the Age of Exploration.* *Specifically:* *Four Main Lesson Blocks each for the following four topics :* *I. Life Science : Nutrition, Chemistry, Anatomy, Physiology* *II. Physics : Acoustics, Electromagnetistm, Optics, Mechanics and Simple Machines* *III. Combustion & Electricity* *IV. Crystals, Acids, Bases, Salts (Inorganic Chemistry)* *Astronomy: Solar system and Galaxy* **Life Science-Evolution:** as stated in the standards, in addition: ● Comparative anatomy including teeth, limbs, hands/hooves/talons/claws, etc.	**Science** Heredity: Inheritance and Variation of Traits: **MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.** [Clarification Statement: Emphasis is on conceptual understanding that changes in genetic material may result in making different proteins.] [Assessment Boundary: Assessment does not include specific changes at the molecular level, mechanisms for protein synthesis, or specific types of mutations Biological Evolution: Unity and Diversity **MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.** [Clarification Statement: Emphasis is on finding patterns of changes in the level of complexity of anatomical structures in organisms and the chronological order of fossil appearance in the rock layers.] [Assessment Boundary: Assessment does not include the names of individual species or geological eras in the fossil record.] **MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.** [Clarification Statement: Emphasis is on explanations of the evolutionary relationships among organisms in terms of similarity or differences of the gross appearance of anatomical structures.] **MS-LS4-3. Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.** [Clarification Statement: Emphasis is on inferring general patterns of relatedness among embryos of different organisms by comparing the macroscopic appearance of diagrams or pictures.] [Assessment Boundary: Assessment of comparisons is limited to gross appearance of anatomical structures in embryological development.]

● Trace the evolution of a horse from, for example the five toed, ancestor, to the single hoof. ● Environmental adaptions such as claws for sub-terrainian rodents, digestive systems of bovines, and the nerve/sense system of raptors ● Theories of evolution such as Darwin Influence of geography, climate, seasonal changes, landscapes, weather and resources in adaptations and the struggle for survival in both time and place. **Life Science-Genetics:** As stated in the standards, in addition: ● Cellular division ● Reproduction ● Growth of an embryo ● Genetic transmission of inherited traits (study will continue in G8) **Earth and Life History (Earth Science)** as stated in the standards, in addition: *In the context of evolution, the studies from grade 6 is continued. This includes:* ● Volcanoes in contrast to sedimentary formations ● Limestone cycle and fossils ● How mountains and Caves are formed	**MS-LS4-4.** **Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.** [Clarification Statement: Emphasis is on using simple probability statements and proportional reasoning to construct explanations.] **MS-LS4-5.** **Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.** [Clarification Statement: Emphasis is on synthesizing information from reliable sources about the influence of humans on genetic outcomes in artificial selection (such as genetic modification, animal husbandry, gene therapy); and, on the impacts these technologies have on society as well as the technologies leading to these scientific discoveries.] **MS-LS4-6.** **Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.** [Clarification Statement: Emphasis is on using mathematical models, probability statements, and proportional reasoning to support explanations of trends in changes to populations over time.] [Assessment Boundary: Assessment does not include Hardy Weinberg calculations.]

● Ring of Fire of the Pacific ● Three basic kinds of geological formations and their derivatives ● Industrial used of metals ● Gemstones ● Plate tectonics ● Geological time (in sedimentary layers) ● Mountain formation ● Land formations (once covered by the sea) ● Layers of the Grand Canyon ● Coal & petroleum deposits (showing proliferate growth) ● Fossil finds at high altitudes and giant versions of smaller modern day plants, etc. ● Organs and tissues: their form, organization and function ● Muscular systems and distribution of forces across the foot are studied and related to levers while studying machines and mechanics ● The structure and processes of plants was studied in fifth grade but is review in grade seven in the context of genetics An in-depth study of the eye and ear is conducted within the physics block on Acoutics and Optics	
Physical Principles in Living Systems (Physical Science)	**Engineering Design** **MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.**

As stated in the standards, in addition: Physics offers the children an objective way to explore the world as they move on to acoustics, advanced studies of electricity and magnetism, and a physical study of levers and simple machines. They begin to delineate specific forces and explore their interactions. For instance, students experienced the pitches of different sounds in sixth grade; now they discover how the relationships between pitches correspond to mathematical formulas. The seventh grader, in addition to experiencing phenomena and then reflecting on the experience, also inherently asks the 'how' of things; "How has the phenomena arisen and how does it work?" The demonstrations, activities and investigations now refine the student's capacities for observation, for drawing conclusions and forming judgments. Call upon the student to compare what they are experiencing with what they know. Specifically: ● The standards are met in the blocks: *Human Anatomy/Physiology* and *Physics*. ● The *Physics* block covers: acoustics, light and optics, magnetism and electricity and six basic machines **Investigation and Experimentation** As stated in the standards, in addition: ● Scientific observation and experimental procedure	**MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.** **MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.** **MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.**

• Setting up apparatus for experiments and data collection • Write reports which record materails used, procedures, hypotheses, observations and conclusions Build models, draw schematics, illustrate observations with charts and diagrams	
Chemistry The study of inorganic chemistry is begun with the exciting subject of combustion, studies of chemical transformation, the acids and the bases can easily be linked to the Medieval and Renaissance studies of a similar nature. Acids are introduced as another form of fire and how, together with bases, salts are formed. Water and various gases (hydrogen, oxygen, and carbon dioxide) can be studied along with the Principal metals. Students are approached with the scientific, cultural, artistic and practical sides of chemistry and how it relates to industrial and economic life. They are asked to respond to this experience through observations, reports and technical illustrations. The quest to find or create precious metals that started in the Middle Ages through the study of alchemy is understood on a chemical level and is furthered by the history and social sciences aspects of the curriculum that inform students of the significance of gold, treasures, and spices.	**Our curriculum begins meeting 8th grade NGSS in 7th grade-please refer to the 8th grade section to find the NGSS that are met in 7th grade.**
Nutrition and Physiology Begin a conversation in the seventh grade for students about contemporary practices of nutrition and physiology. The elementary aspects of physiology presented in the seventh grade	**From Molecules to Organisms: Stuctures and Processes** **MS-LS1-6.** **Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.** [Clarification Statement: Emphasis is on tracing movement of matter and flow of energy.] [Assessment Boundary: Assessment does not include the biochemical mechanisms of photosynthesis.]

include the main systems of the body: respiratory, circulatory, digestive, and perhaps reproductive. These are presented to the students in an artistic and beautiful way. Health, nutrition and hygiene are taught so that these systems have meaning and relevance to the students. Throughout the science blocks accurately written descriptions and drawings are integral to the quality of a student's work and are evaluated as such.	**MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.** [Clarification Statement: Emphasis is on describing that molecules are broken apart and put back together and that in this process, energy is released.] [Assessment Boundary: Assessment does not include details of the chemical reactions for photosynthesis or respiration.]
Environment Focus is on food choices and nutrition by investigating the effects of food production, diet, and nutrition on human health, plant and animal ecosystems and the environment. Continuing with organic gardening, composting and recycling. **Other Embedded Seventh Grade Science content standards** Cell biology, plant cells vs. animal cells, cell structure, genetics, sexual vs asexual reproduction, inherited traits, DNA, evolution, genetic variation, Charles Darwin, fossils, classification of living groups of organisms, extinction, Earth processes, catastrophic earth events, geologic layers, radioactive dating, age of earth (time line), plate tectonics, anatomy and physiology of plants and animals, human anatomy, optics, visible light, the light spectrum, simple lenses, light wavelengths, angle of reflection, angle of incidence, simple machines, investigation and experimentation using calculators, computers, balances, spring scales, microscopes, use of internet research, scale models, written research reports, scientific method.	**Ecosystems: Interactions, Energy, and Dynamics** **MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.** [Clarification Statement: Emphasis is on cause and effect relationships between resources and growth of individual organisms and the numbers of organisms in ecosystems during periods of abundant and scarce resources.] **MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.** [Clarification Statement: Emphasis is on predicting consistent patterns of interactions in different ecosystems in terms of the relationships among and between organisms and abiotic components of ecosystems. Examples of types of interactions could include competitive, predatory, and mutually beneficial.] **MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.** [Clarification Statement: Emphasis is on describing the conservation of matter and flow of energy into and out of various ecosystems, and on defining the boundaries of the system.] [Assessment Boundary: Assessment does not include the use of chemical reactions to describe the processes.] **MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.** [Clarification Statement: Emphasis is on recognizing patterns in data and making warranted inferences about changes in populations, and on evaluating empirical evidence supporting arguments about changes to ecosystems.] **MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.*** [Clarification Statement: Examples of ecosystem services could include water purification, nutrient recycling, and prevention of soil erosion. Examples of design solution constraints could include scientific, economic, and social considerations.] **From Molecules to Organisms: Structures and Processes**

	MS-LS1-4. **Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.** [Clarification Statement: Examples of behaviors that affect the probability of animal reproduction could include nest building to protect young from cold, herding of animals to protect young from predators, and vocalization of animals and colorful plumage to attract mates for breeding. Examples of animal behaviors that affect the probability of plant reproduction could include transferring pollen or seeds; and, creating conditions for seed germination and growth. Examples of plant structures could include bright flowers attracting butterflies that transfer pollen, flower nectar and odors that attract insects that transfer pollen, and hard shells on nuts that squirrels bury.] **MS-LS1-5.** **Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.** [Clarification Statement: Examples of local environmental conditions could include availability of food, light, space, and water. Examples of genetic factors could include large breed cattle and species of grass affecting growth of organisms. Examples of evidence could include drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, and fish growing larger in large ponds than they do in small ponds.] [Assessment Boundary: Assessment does not include genetic mechanisms, gene regulation, or biochemical processes.] **MS-LS1-8.** **Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.** [Assessment Boundary: Assessment does not include mechanisms for the transmission of this information.]

Sycamore Creek Community Charter School

Public Waldorf Inspired Curriculum Cross Articulation with California Aligned Common Core Standards and Next Generation Science Standards

GRADE 8

Sycamore Creek Community Charter School Curriculum Based in the principles of Public Waldorf Education	California Aligned Common Core Standards and Next Generation Science Standards
English Language Arts: *Reading* ***Introduction*** *Eighth grade student curriculum springs from the will and temperament of revolution that runs through the theme of this year of development as students study the American*	**English Language Arts: *Reading*** **Grade 7: *Reading Literature (Seventh Grade CC standard met in SCCCS Grade 8)*** ***Integration of Knowledge and Ideas*** RL 7. Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).
Revolution, Civil War, and the Reformation period of European history. S**trategies used to meet Common Core Standards for Reading Include:**	**Grade 8: *Reading Literature (Eighth Grade CC standard met in SCCCS Grade 8)*** ***Key Ideas and Details*** RL 1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

Individually through writing assignments, reports, presentations, work in Main Lesson Book, small group presentations and discussions students will: ● Integrate knowledge and ideas gained from a variety of written material; Show evidence, explanation and analysis of key ideas and details; show understanding of craft and structure; and integrate knowledge and ideas of works read. ● A close study of poetry includes further understanding and identification of poetic forms such as sonnets, ballads, epic poems, lyric impulse, and elegies, and odes. ● Reading comprehension of written works expands into consumer materials, legal documents, contracts and documents related to career development such as resumes and job applications. ● Reading skills are further honed through research (both library and internet-based) and the integration of quotes, paraphrases, proper citation, and summary from primary texts. ● Figurative language skills are furthered by the study and writing of a short story. ● Each week, students read information distributed by the teacher related to the current topic. New vocabulary	RL 2. Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text. RL 3. Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision. ***Craft and Structure*** RL 4. Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts. (See grade 8 Language standards 4–6 for additional expectations.) CA RL 5. Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style. RL 6. Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor. ***Integration of Knowledge and Ideas*** RL 7. Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors. (Developed further throughout the high school years—and beyond) RL 8. (Not applicable to literature) RL 9. Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new. (Development continues throughout the high school years—and beyond Range of Reading and Level of Text Complexity) RL 10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6–8 text complexity band independently and proficiently.

words related to the topic further expand reading capabilities. • Students synopsize reading material, thereby demonstrating good comprehension skills, (fiction and non-fiction.) Students recall and utilize previously-learned words for contextual clues to deciphering meaning in related reading documents.	
English Language Arts: *Reading Informational Texts* **Strategies used to meet Common Core Standards for Reading Informational Texts Include:** Individually through writing assignments, reports, presentations, work in Main Lesson Book, small group presentations and discussions students will: • Students read and evaluate factual information media, newspapers, encyclopedias, magazines, source books, internet, etc. • Students must analyze craft and structure at various levels as they meet standards from previous grades as well as 8th grade standards. • Students must recall key ideas and details, significant events or details from their readings; they scan charts	**English Language Arts: *Reading Informational Texts*** **Grade 4: *Reading Informational Texts (Fourth Grade CC standard met in SCCCS Grade 8)*** ***Craft and Structure*** RI 6. Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent. (introduced in Gr. 7 standard met in Gr. 8) **Grade 6: *Reading Informational Texts (Sixth Grade CC standard met in SCCCS Grade 8)*** ***Craft and Structure*** RI 5. Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept. RI 5a. Analyze the use of text features (e.g., graphics, headers, captions) in popular media. (met in Gr. 7 except analysis of electronic media text features occurs in Gr. 8) **Grade 7: *Reading Informational Texts (Seventh Grade CC standard met in SCCCS Grade 8)*** ***Key Ideas and Details*** RI 1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. RI 2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.

and graphs, infer meanings, and use such information in preparation of reports. • Students must show integration knowledge and ideas from their reading in a variety of ways (e.g., advantages/disadvantages of using different mediums to present information, and analyze claims and conflicting information) • Reading and Text complexity must continually increase as student's independence and proficiency.	RI 3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g. through comparisons, analogies, or categories). ***Craft and Structure*** RI 4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts. (See grade 8 Language standards 4–6 for additional expectations.) RI 5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas. (introduced in Gr. 7 and met in Gr. 8) RI 5a. Analyze the use of text features (e.g., graphics, headers, captions) in public documents. (introduced in Gr. 7 and met in Gr. 8) RI 6. Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others. (introduced in Gr. 7 and met in Gr. 8) RI 8. Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims. (introduced in Gr. 7 and met in Gr. 8) RI 9. Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts. (introduced in Gr. 7 and met in Gr. 8)
	Grade 8: *Reading Informational Texts (Eighth Grade CC standard met in SCCCS Grade 8)* ***Craft and Structure*** RI 5. Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept. RI 5a. Analyze the use of text features (e.g., graphics, headers, captions) in consumer materials. RI 6. Determine an author's point of view or purpose in a text and analyze how the author

	acknowledges and responds to conflicting evidence or viewpoints. ***Integration of Knowledge and Ideas*** RI 7. Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea. RI 8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced. RI 9. Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation. ***Range of Reading and Level of Text Complexity*** RI 10. By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6–8 text complexity band independently and proficiently.
English Language Arts: *Writing* *In English class, Artistic and literary elements of writing- Fluency, color, figurative language, rhythm, consonance-receive special attention in the main lesson block. Students learn to write the point/counterpoint style of essay, anticipating and addressing objections from an antithetical view. There are many opportunities to argue analogies, opinions of authorities, etc. as well as uncovering errors in fact or reason. Students learn to outline a topic, compose rough drafts, write sample bibliographies, quote from sources, etc. Such skills are applied in reports written for the main lesson block. These reports will require expository and narrative formats.*	**English Language Arts: *Writing*** **Grade 4: *Writing (Fourth Grade CC standard met in SCCCS Grade 8)*** ***Production and Distribution of Writing*** W 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting. (introduced in Gr. 7, met in Gr. 8) **Grade 5: *Writing (Fourth Grade CC standard met in SCCCS Grade 8)*** ***Production and Distribution of Writing*** W 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting. (introduced in Gr. 7 standard met in Gr. 8) **Grade 6: *Writing (Sixth Grade CC standard met in SCCCS Grade 8)***

Students write narrative, expository, persuasive, and descriptive essays of at least 500 to 700 words in each genre. Student writing demonstrates a command of standard American English and the research, organizational, and drafting strategies. *Writing is not limited to English lessons, but is expected in History and Science blocks as well. In science, students write descriptive lab reports, applying an expository and descriptive style with emphasis on materials, procedures, and observations. In History, narrative style is common, contrast and comparison, dramatic rendering-characters engaged in a dramatic dialog, oratorical and persuasive arguments, and history retelling through diary accounts or letter writing.* S**trategies used to meet Common Core Standards for Writing Include:** Individually through writing assignments, reports, presentations, and work in Main Lesson Book:	W 6. Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting. (met in Gr. 6 except developing capacities to use technology in Gr. 7 & 8) **Grade 7: *Writing (Seventh Grade CC standard met in SCCCS Grade 8)*** ***Text Types and Purposes*** W 2. Write *informative/explanatory texts* to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. W 2a. Introduce a topic **or thesis statement** clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/ effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. (introduced in Gr. 7 met in Gr. 8) ***Production and Distribution of Writing*** W 6. Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources. (Initially used in Gr. 7 and expanding in Gr. 8) ***Research to Build and Present Knowledge*** W 8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
• Through online collaboration and individual efforts, students will use technology (including the Internet) to produce and publish a portion of writing assignments. Students will be required to show proficiency in typing	**Grade 8: *Writing (Eighth Grade CC standard met in SCCCS Grade 8)*** ***Text Types and Purposes*** W 1. Write arguments to support claims with clear reasons and relevant evidence. W 1a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.

speed/accuracy during timed activities. ● Literary Criticism: Students begin forays into literary criticism by analyzing works of literature, showing how each reflects the heritage, traditions, attitudes, and the attitude and cultural beliefs of the writers. ● Write Short stories: Short stories (both fiction and non-fiction) are core components of the curriculum, and continuing mastery and fluency in the use of literary device such as analogy, metaphoric writing, and idiomatic expressions give students meaningful and relevant lenses to view historically significant literary works. ● Essay Assignments: Informative/Explanatory Essay assignments deepen command of organizational, research and drafting strategies as well as the ability to support evidence and defend arguments with inquiry-driven approaches to writing, incorporating a clear understanding of the use of a thesis to construct ideas for further expansion. ● Literary/Historical project: The writing and research skills will culminate in the completion of end of the year project	W 1b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. W 1c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. W 1 d. Establish and maintain a formal style. W 1e. Provide a concluding statement or section that follows from and supports the argument presented. W 2. Write informative/explanatory texts, including career development documents (e.g., simple business letters and job applications), to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. W 2a. Introduce a topic or thesis statement clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. W 2b. Develop the topic with relevant, well- chosen facts, definitions, concrete details, quotations, or other information and examples. W 2c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. W 2d. Use precise language and domain-specific vocabulary to inform about or explain the topic. W 2e. Establish and maintain a formal style. W 2f. Provide a concluding statement or section that follows from and supports the information or explanation presented. W 3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. W 3a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.

• literary/historical project, introduce the skill of annotating references for use. • Oral Presentation: An oral presentation for the literary/history project will be one of the graded requirements of students. Listening and speaking skills are further emphasized with dramatic literature. • Field Trip Journal: Students in schools guided by the core principles of public Waldorf education commonly prepare for and undertake a significant field trip of approximately one week at the end of the year (budget allowing), which culminates their experience as a class and affords ample opportunity for journalistic representations of their experiences.	W 3b. Use narrative techniques, such as dialogue, pacing, description, and reflection to develop experiences, events, and/or characters. W 3c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events. W 3d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. W 3e. Provide a conclusion that follows from and reflects on the narrated experiences or events. ***Production and Distribution of Writing*** W 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.) W 5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 8.) W 6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others. ***Research to Build and Present Knowledge*** W 7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. W 8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. W 9a. Apply grade 8 Reading standards to literature (e.g., "Analyze how a modern work of fiction

	draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new"). W 9b. Apply grade 8 Reading standards to literary nonfiction (e.g., "Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced"). ***Range of Writing*** W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
English Language Arts: *Speaking & Listening* **Strategies used to meet Common Core Standards for Speaking & Listening Include:** Class Oral presentations (multimedia and visual displays used when appropriate) and discussions where students are expected to: • Students must show comprehension of material and excellent collaboration skills during oral interactions. All areas of CC Standards are built into assessments. • In presentation of knowledge and ideas, high expectations are met through practice,	**English Language Arts: *Speaking & Listening*** **Grade 7: *Speaking and Listening (Seventh Grade CC standard met in SCCCS Grade 8)*** SL 2. Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study. (Introduced in Gr. 7, expanded and met in Gr. 8) SL 3. Delineate a speaker's argument and specific claims, and attitude toward the subject, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence. (Introduced in Gr. 7, expanded and met in Gr. 8) SL 4a. Plan and present an argument that: supports a claim, acknowledges counterarguments, organizes evidence logically, uses words and phrases to create cohesion, and provides a concluding statement that supports the argument presented. (Introduced in Gr. 7, expanded and met in Gr. 8) SL 5. Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. (Introduced in Gr. 7, expanded and met in Gr. 8)
teacher/peer/self-assessment and reflection (All areas of CC Standards are built into assessments. • Analyze main ideas/details from various formats/media and explain	**Grade 8: *Speaking and Listening (Eighth Grade CC standard met in SCCCS Grade 8)*** ***Comprehension and Collaboration*** SL 1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others'

how these ideas clarify topic/text/issue that is currently being studied. ● Students must be able to determine the argument, claims, attitudes, reasoning, relevance, evidence of a speaker. ● Students must plan and present comprehensive arguments following the requirements of the CC standards. ● Oral Presentation: An oral presentation for the literary/history project will be one of the graded requirements of students. Listening and speaking skills are further emphasized with dramatic literature. ● Theatrical Production: Year-end theatrical production requiring extensive memorization and further attentions to voice modulation, tone, and gestures to enhance meaning.	ideas and expressing their own clearly. SL 1a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. SL 1b. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed. SL 1c. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. SL 1d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented. SL 2. Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation. SL 3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced. ***Presentation of Knowledge and Ideas*** SL 4. Present claims and findings (e.g., argument, narrative, response to literature presentations), emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation. SL 4a. Plan and present a narrative that: establishes a context and point of view,

	presents a logical sequence, uses narrative techniques (e.g., dialogue, pacing, description, sensory language), uses a variety of transitions, and provides a conclusion that reflects the experience. SL 5. Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. SL 6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 8 Language standards 1 and 3 for specific expectations.)
English Language Arts: *Language* *Common Core Standards for Language: Conventions of Standard English, Knowledge of Language, and Vocabulary Acquisition and Use are built into assessments for Reading, Writing and Speaking and Listening.*	**English Language Arts: *Language*** **Grade 5: *Language (Fifth Grade CC standard met in SCCCS Grade 8)*** ***Conventions of Standard English*** L 5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. (introduced and developed throughout the grades, met in Gr. 8)
Students are expected to demonstrate grade -appropriate sentence construction. This includes their use of more complex sentences with clauses and phrases, descriptors, conjunctions and transitional phrases. Students write sequential paragraphs using good structure (initial sentence, supporting material, closure and transition phrases or information). Students use appropriate grammar, punctuation, syntax, parts of speech, vocabulary and spelling (collected from content areas). Students consistently use commas (for series), quotations, and capitals for proper nouns, colons and semicolons. Students find spelling errors, and consistently self-edit and proofread (their own and each	**Grade 8: *Language (Eighth Grade CC standard met in SCCCS Grade 8)*** ***Conventions of Standard English*** L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. L 1a. Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences. L 1b. Form and use verbs in the active and passive voice. L 1c. Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood. L 1d. Recognize and correct inappropriate shifts in verb voice and mood.

other's work) applying all previously-taught skills including alphabetization and dictionary usage (see grades 5-7). They produce accurate final drafts of writing projects	L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. L 2a. Use punctuation (comma, ellipsis, dash) to indicate a pause or break. L 2b. Use an ellipsis to indicate an omission. L 2c. Spell correctly. ***Knowledge of Language*** L 3. Use knowledge of language and its conventions when writing, speaking, reading, or listening. L 3a. Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact). ***Vocabulary Acquisition and Use*** L 4. Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies. L 4a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. L 4b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede). L 4c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech or trace the etymology of words. CA L 4d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

	L 5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. L 5a. Interpret figures of speech (e.g. verbal irony, puns) in context. L 5b. Use the relationship between particular words to better understand each of the words. L 5c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute). L 6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
Mathematics ***Introduction*** *Upon entering grade eight students are adept at manipulating numbers and equations and understand the general principles of equations and formulas. Our program that allows for all students of all achievement levels to be successful. The trajectory of the mathematics curriculum in eighth grade offers a continuation of concepts introduced and reinforced in the seventh grade, such as probability and statistical analysis and the completion of Algebra I. Students that have completed Algebra I will be offered Geometry* *Instruction includes: Factoring (numerators, denominators, properties of exponents, set up and solve problems that involve these*	**Mathematics:** **Mathematics: *Measurement and Data*** **Grade 5: *Measurement and Data (Fifth Grade CC standard met in SCCCS Grade 8)*** ***Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.*** MD 3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units. (Introduced at Gr. 6) MD 4**.** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. **(**Introduced at Gr. 6) MD 5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. MD 5a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. MD 5b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes

components); Scientific Notation (Learn to understand and use scientific notation with rational numbers); Algebra and Algebraic Terminology (principles of solid geometry, construction of the five platonic solids, introduction to the binary system); Sampling Logic (Use of data to construct/interpret population sampling and explore concepts of logic application to critical data analysis); Fractions, Decimals, Percent (representations of fractional numbers and proficiency in changing from one to another); Ratios and Proportion and Linear Functions. Students gain a sophisticated set of skills to transition into the high school math core subjects, including classroom instruction in the use of Excel for both mathematical and organizational purposes. . **Strategies used to meet Common Core Standards for Measurement and Data Include:** • Students are presented with word problems, real-world scenarios, hands on application activities and drawings/writing In their Main Lesson Book that support their mastery of geometric measurement, concepts of	of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. MD 5c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems. Introduced at Gr. 6 **Mathematics: *Ratios and Proportional Relationships*** **Grade 6: *Ratios and Proportional Relationships (Sixth Grade CC standard met in SCCCS Grade 8)*** ***Understand ratio concepts and use ratio reasoning to solve problems.*** RPR 2. Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."* Begins at Gr. 6 RPR 3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. RPR 3a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. (Begins at Gr. 6) **Grade 7: *Ratios and Proportional Relationships (Seventh Grade CC standard met in SCCCS Grade 8)*** ***Analyze proportional relationships and use them to solve real-world and mathematical problems.*** RPR 2. Recognize and represent proportional relationships between quantities. RPR 2a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. RPR 2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. RPR 2c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$*. (RPR 2, a, b, and c, Introduced at Grade 7) RPR 2d. Explain what a point *(x, y)* on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, *r)* where *r* is the unit rate. RPR 3. Use proportional relationships to solve multistep ratio and percent problems.

volume and the ability to relate volume to multiplication and addition. S**trategies used to meet Common Core Standards for Ratios and Proportional Relationships Include:** ● Students are presented with word problems, real-world scenarios (cooking, buying/selling of goods, calculation of taxes), hands on application activities and completion of drawings/writing/graphing/tables In their Main Lesson Book for comprehension of ratio concepts, use of ratio reasoning to solve problems, and proportional relationship analysis. ● Students are instructed how to increase their facility with ratio and proportion, compute percent of increase and decrease, and compute simple and compound interest. S**trategies used to meet Common Core Standards for Expressions and Equations Include:** ● Students are presented with word problems, real-world scenarios, hands on application activities and drawings/writing/graphing In their Main Lesson Book in which they will: present and analyze quantitative relationships between dependent and independent variables; use properties	*Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease,* percent error. (Introduced in Grade 6) **Mathematics: *Expressions and Equations*** **Grade 6: *Expressions and Equations (Sixth Grade CC standard met in SCCCS Grade 7)*** ***Represent and analyze quantitative relationships between dependent and independent variables.*** EE 9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship

of operations to generate equivalent expressions; understand the connections between proportional relationships, lines and linear equations; analyze and solve linear equations and pairs of simultaneous linear equations; graph linear functions and understand the idea of slope and its relation to ratio. **Strategies used to meet Common Core Standards for Functions Include:** • Students are presented with word problems, real-world scenarios, hands on application activities, use of physical models/transparencies, and drawings/writing/graphing In their Main Lesson Book in which they will: Define, evaluate and compare functions; Use Functions to model relationships between quantities; understand congruence and similarity; understand and apply the Pythagorean Theorem; and solve problems related to volume (cylinders, cones, and spheres). **Strategies used to meet Common Core Standards for The Number System Include:** • Students are presented with word problems, real-world scenarios, hands on application activities, and drawings/writing/graphing In their Main Lesson Book in which they will:	between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.* (Introduced at Gr. 7) **Grade 7: *Expressions and Equations (Seventh Grade CC standard met in SCCCS Grade 8)*** ***Use properties of operations to generate equivalent expressions.*** EE 1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. EE 2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."* ***Solve real-life and mathematical problems using numerical and algebraic expressions and equations.*** EE 3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation*. (Introduced in Grade 7) EE 4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. EE 4b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.* (Introduced in Gr. 7) **Grade 8: *Expressions and Equations (Eighth Grade CC standard met in SCCCS Grade 8)*** ***Work with radicals and integer exponents.*** EE 1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.* EE 2. Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number.

Use previous understanding of fractions to add, subtract, multiply and divide rational numbers; know that there are non-rational numbers (irrational) and approximate them by rational numbers.

S**trategies used to meet Common Core Standards for Geometry Include:**

- Class and individual activities such as real-world word problems, group problem-solving and hands on manipulation experiences give students the opportunity to work with: functions(angle measure, area, surface area, and volume) and construction of geometrical figures.

The Geometry Main Lesson Block comprises:

- In their Geometry Main Lesson Book, students will draw and describe geometrical figures and their relationships.
- Introduction to Solid Geometry
- Euclidean proofs in Plane Geometry
- Geometrical Structures in nature: Series (geometric, arithmetic, Fibonacci numbers), The Golden Proportion; Golden Proportion in the Human Skeleton, and Logarithmic and Archimedean spirals
- Plane Geometry: Introduction to Euclidian plane Geometry:

EE 2. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.
EE 3. Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as* 3×10^8 *and the population of the world as* 7×10^9*, and determine that the world population is more than 20 times larger.*
EE 4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

Understand the connections between proportional relationships, lines, and linear equations.
EE 5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*
EE 6. Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at *b*.

Analyze and solve linear equations and pairs of simultaneous linear equations.
EE 7. Solve linear equations in one variable.
EE 7a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where *a* and *b* are different numbers).
EE 7b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
EE 8. Analyze and solve pairs of simultaneous linear equations.
EE 8a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
EE 8b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.*
EE 8c. Solve real-world and mathematical problems leading to two linear equations in two

Introduction to Axioms, Theorems and Proofs; Corresponding parts: Congruence by SSS, SAS, ASA; Properties of Geometrical Planer Objects and Parallel perimeters and areas of polygons; further application of Pythagorean Theorem, ratios of sides (introduction to trigonometric relationships); bisections of angles.

Strategies used to meet Common Core Statistics and Probability Include:

- Class and individual activities such as real-world word problems, group problem-solving, plotting/ drawings/writing/graphing In their Main Lesson Book and hands on manipulation experiences give students the opportunity to: Develop understanding of statistical variability; Summarize and describe distributions; Use random sampling to draw inferences about a population; Draw informal comparative inferences about two populations; Investigate chance processes , Develop, use, and evaluate probability models; and Investigate patterns of association in bivariate data.

variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*

Mathematics: *Functions*

Grade 8: *Functions (Eighth Grade CC standard met in SCCCS Grade 8)*

Define, evaluate, and compare functions.

F 1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.

F 2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).

For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.

F 3. Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.

For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.

Use functions to model relationships between quantities.

F 4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

F 5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

Understand congruence and similarity using physical models, transparencies, or geometry software.

G 1. Verify experimentally the properties of rotations, reflections, and translations:

a. Lines are taken to lines, and line segments to line segments of the same length.
b. Angles are taken to angles of the same measure
c. Parallel lines are taken to parallel lines.

G 2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.

G 3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.

	G 4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. G 5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.* ***Understand and apply the Pythagorean Theorem.*** G 6. Explain a proof of the Pythagorean Theorem and its converse. G 7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. G 8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. ***Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.*** G 9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.
	Mathematics: *The Number System* **Grade 7: *The Number System (Seventh Grade CC standard met in SCCCS Grade 8)*** ***Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.*** NS 2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. NS 2a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. NS 2b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real world contexts. NS 2c. Apply properties of operations as strategies to multiply and divide rational numbers. NS 2d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
	Grade 8: *The Number System (Eighth Grade CC standard met in SCCCS Grade 8)* ***Know that there are numbers that are not rational, and approximate them by rational numbers.*** NS 1. Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats

	eventually, and convert a decimal expansion which repeats eventually into a rational number. NS 2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations*
	Mathematics: *Geometry* **Grade 6: *Functions (Sixth Grade CC standard met in SCCCS Grade8)*** ***Solve real-world and mathematical problems involving area, surface area, and volume*.** G 2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas *V = l w h* and *V = b h* to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. G 3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. G 4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. **Grade 7: *Functions (Seventh Grade CC standard met in SCCCS Grade 8)*** ***Draw, construct, and describe geometrical figures and describe the relationships between them.*** G 3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. Introduced in Gr. 7 ***Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.*** G 6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. (Introduced in Gr. 7)
	Mathematics: *Statistics and Probability* **Grade 6: *Statistics and Probability (Sixth Grade CC standard met in SCCCS Grade 8)*** ***Develop understanding of statistical variability.*** SP 2. Understand that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape.

	SP 3. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. ***Summarize and describe distributions*** SP 4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots. SP 5. Summarize numerical data sets in relation to their context, such as by: SP 5a. Reporting the number of observations. SP 5b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. SP 5c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. SP 5d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. **Grade 7: *Statistics and Probability (Seventh Grade CC standard met in SCCCS Grade 8)*** ***Use random sampling to draw inferences about a population.*** SP 1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. (Introduced in Gr. 7) SP 2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.* (Introduced in Gr. 7) ***Draw informal comparative inferences about two populations.*** SP 3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.* SP 4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.* ***Investigate chance processes and develop, use, and evaluate probability models.***

	SP 5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. SP 6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.* SP 7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. SP 7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.* SP 7b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?* SP 8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. SP 8a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. SP 8b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. SP 8c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*
	Grade 8: *Statistics and Probability (Eighth Grade CC standard met in SCCCS Grade 8)* ***Investigate patterns of association in bivariate data.*** SP 1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.

	SP 2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. SP 3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.* SP 4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*
Science ***Introduction*** *Physical Science moves to the forefront of science curriculum in the eighth grade, with an emphasis on understanding velocity, force, the structure of matter, acoustics, optics, and electromagnetism. Each of these concepts is integrated into the practical realm by studying the influence of such ideas influenced the industrial and technological revolutions.* *In the Physical Science realm students will also have the opportunity to study Chemistry and Human Anatomy and Physiology. In their study of the human body students will gain knowledge of important health concepts on nutrition and exercise*	**Science** **MS-PS2-1.** **Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.*** [Clarification Statement: Examples of practical problems could include the impact of collisions between two cars, between a car and stationary objects, and between a meteor and a space vehicle.] [Assessment Boundary: Assessment is limited to vertical or horizontal interactions in one dimension.] **MS-PS2-2.** **Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.** [Clarification Statement: Emphasis is on balanced (Newton's First Law) and unbalanced forces in a system, qualitative comparisons of forces, mass and changes in motion (Newton's Second Law), frame of reference, and specification of units.] [Assessment Boundary: Assessment is limited to forces and changes in motion in one-dimension in an inertial reference frame and to change in one variable at a time. Assessment does not include the use of trigonometry.] **MS-PS2-3.** **Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.** [Clarification Statement: Examples of devices that use electric and magnetic forces could include electromagnets,

Other Embedded Eighth Grade California Science Content Standards Students will study: motion, speed, velocity, forces, unbalanced forces create changes in velocity, mass, gravity's effect on shapes of plants, stars and solar system, structure of atoms, structure of molecules, long chain polymers, states of matter, vibration of atoms and molecules in relation to state, metals, nonmetals, and inert gases, atomic numbers, elemental density, hardness, melting temperature and thermal and electrical conductivity, light years, position and names of planets in our solar system, conservation of matter, chemical reactions, exothermic and endothermic reactions, complex molecules of living organisms, DNA, density and buoyancy, investigation and experimentation, scientific method.	electric motors, or generators. Examples of data could include the effect of the number of turns of wire on the strength of an electromagnet, or the effect of increasing the number or strength of magnets on the speed of an electric motor.] [Assessment Boundary: Assessment about questions that require quantitative answers is limited to proportional reasoning and algebraic thinking.] **MS-PS2-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.** [Clarification Statement: Examples of evidence for arguments could include data generated from simulations or digital tools; and charts displaying mass, strength of interaction, distance from the Sun, and orbital periods of objects within the solar system.] [Assessment Boundary: Assessment does not include Newton's Law of Gravitation or Kepler's Laws.] **MS-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact**
Physics Studies in hydraulics, density, buoyancy, hydrostatics, and aeromechanics are introduced in physics blocks, while earlier knowledge of the properties of heat, light, and sound are furthered. In the mechanics block students will be study the kinematics of distance, velocity, and acceleration. They will practice fluid	**Waves and Their Applications in Technologies for Information Transfer** **MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.** [Clarification Statement: Emphasis is on describing waves with both qualitative and quantitative thinking.] [Assessment Boundary: Assessment does not include electromagnetic waves and is limited to standard repeating waves.] **MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.** [Clarification Statement: Emphasis is on both light and mechanical waves. Examples of models could

mechanics with experiments of volume displacement, buoyancy, density and surface tension. They will able to scaffold from their study in 7th grade of simple machines. Students will also delve into Galileo's acceleration of a falling body research and experimentation. Newton's 3 Laws of Motion and his law of Universal Attraction are taught, scaffolding from their 7th grade Astronomy block. Students employ Kepler's law to calculate planetary distances and orbital speeds. They'll practice converting distance in light speed and and calculate the distance to to other stars and galaxies. The importance of gravity to the evolution of stars and its role in holding together star systems and galaxies it taught. Students continue to develop their knowledge of acoustics, magnetism, heat, optics and electricity **Eighth grade Science Fair Project** Motion, speed, velocity, forces, unbalanced forces create changes in velocity, mass, gravity's effect on shapes of planets, stars and solar system, structure of atoms, structure of molecules, long chain polymers, states of matter, vibration of atoms and molecules in relation to state, metals, nonmetals, and inert gases, atomic numbers, elemental density, hardness, melting temperature and thermal and electrical conductivity, light years,	include drawings, simulations, and written descriptions.] [Assessment Boundary: Assessment is limited to qualitative applications pertaining to light and mechanical waves.] **MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.** [Clarification Statement: Emphasis is on a basic understanding that waves can be used for communication purposes. Examples could include using fiber optic cable to transmit light pulses, radio wave pulses in wifi devices, and conversion of stored binary patterns to make sound or text on a computer screen.] [Assessment Boundary: Assessment does not include binary counting. Assessment does not include the specific mechanism of any given device.] **Engineering Design:** **MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.** **MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.** **MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.** **MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.**

position and names of planets in our solar system, conservation of matter, chemical reactions, exothermic and endothermic reactions, complex molecules of living organisms, DNA, density and buoyancy, investigation and experimentation, scientific method. **Research** Students will be able to think chronologically and spatially, conduct research, distinguish facts from opinion, and draw conclusions from primary and secondary sources as well as draw their own conclusions. They will practice investigation and experimentation in both science block lesson as well as regular weekly lessons. They will practice methodology, as well as applications for geometry and algebra	
Chemistry Organic chemistry is a core part of the science curriculum including reactions, atoms and molecules, chemical properties of elements, chemistry of living systems. During their Chemistry block students will study the model of the atom, the Periodic Table, ionic bonding, solutions and solubility, covalent bonding, polymers, kinetic theory and reactions. This scaffolds from their 7th	**<u>Matter and its Interactions</u>** **MS-PS1-1.** **Develop models to describe the atomic composition of simple molecules and extended structures.** [Clarification Statement: Emphasis is on developing models of molecules that vary in complexity. Examples of simple molecules could include ammonia and methanol. Examples of extended structures could include sodium chloride or diamonds. Examples of molecular-level models could include drawings, 3D ball and stick structures, or computer representations showing different molecules with different types of atoms.] [Assessment Boundary: Assessment does not include valence electrons and bonding energy, discussing the ionic nature of

grade study of life science, nutrition, physiology, chemistry and anatomy. In the examination of the Periodic Table students will learn of atomic number, mass number, isotopes, and average atomic mass. They will also learn about chemical families, metals, non-metals, metalloids, gaseous elements, and the noble gases. Students will also learn of periodic trends in thermal and electrical conductivity. Students will learn about the elements of hydrogen, oxygen, and nitrogen as the building blocks for plant and animal tissues like cellulose, glucose, carbohydrate, and protein. 8th Grade students will practice chemical equations and learn basic organic chemistry of: plant structures and chemical processes; solubility of elements, molecules and compounds; chemical equations of sugars, starches and fats; tests for starches, sugars, proteins and fats; and cycles of elements.	subunits of complex structures, or a complete description of all individual atoms in a complex molecule or extended structure is not required.] **MS-PS1-2.** **Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.** [Clarification Statement: Examples of reactions could include burning sugar or steel wool, fat reacting with sodium hydroxide, and mixing zinc with hydrogenchloride.] [Assessment Boundary: Assessment is limited to analysis of the following properties: density, melting point, boiling point, solubility, flammability, and odor.] **MS-PS1-3.** **Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.** [Clarification Statement: Emphasis is on natural resources that undergo a chemical process to form the synthetic material. Examples of new materials could include new medicine, foods, and alternative fuels.] [Assessment Boundary: Assessment is limited to qualitative information.] **MS-PS1-4.** **Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.** [Clarification Statement: Emphasis is on qualitative
Environment Students explore the sources, production, uses, and environmental effects of energy in the study of the historical birth of the Industrial Age and the economic globalization in contemporary times. Continue with organic gardening, composting and recycling. **Meteorology**	**<u>Energy</u>** **MS-PS3-1.** **Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.** [Clarification Statement: Emphasis is on descriptive relationships between kinetic energy and mass separately from kinetic energy and speed. Examples could include riding a bicycle at different speeds, rolling different sizes of rocks downhill, and getting hit by a wiffle ball versus a tennis ball.] **MS-PS3-2.** **Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.** [Clarification Statement: Emphasis is on relative amounts of potential energy, not

Meteorology becomes one of the cornerstones of earth science study, and the use of barometers, rain gauges, and thermometers is studied and practiced by the students. In the mechanics, physics and meteorology block students will discuss convection in the context of meteorological atmospherics and climatology. **Anatomy and Physiology** Anatomy and physiology, which are enhanced with health and nutrition blocks during which the role of energy and caloric measures and the components of sustenance (i.e., fats, proteins, carbohydrates, and sugars) are examined from the perspective of chemical reactions in the body. The importance of nutrition and exercise ar stressed. Additionally, study of the respiratory, reproductive, sensory, circulatory, skeletal , and musculature systems ar takien up. Study of the small components of the eye and ear deepen the students' knowledge of physiology.	on calculations of potential energy. Examples of objects within systems interacting at varying distances could include: the Earth and either a roller coaster cart at varying positions on a hill or objects at varying heights on shelves, changing the direction/orientation of a magnet, and a balloon with static electrical charge being brought closer to a classmate's hair. Examples of models could include representations, diagrams, pictures, and written descriptions of systems.] [Assessment Boundary: Assessment is limited to two objects and electric, magnetic, and gravitational interactions.] **MS-PS3-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.*** [Clarification Statement: Examples of devices could include an insulated box, a solar cooker, and a Styrofoam cup.] [Assessment Boundary: Assessment does not include calculating the total amount of thermal energy transferred.] **MS-PS3-4. Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.** [Clarification Statement: Examples of experiments could include comparing final water temperatures after different masses of ice melted in the same volume of water with the same initial temperature, the temperature change of samples of different materials with the same mass as they cool or heat in the environment, or the same material with different masses when a specific amount of energy is added.] [Assessment Boundary: Assessment does not include calculating the total amount of thermal energy transferred.] **MS-PS3–5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.** [Clarification Statement: Examples of empirical evidence used in arguments could include an inventory or other representation of the energy before and after the transfer in the form of temperature changes or motion of object.] [Assessment Boundary: Assessment does not include calculations of energy.]

SYCAMORE CREEK COMMUNITY CHARTER SCHOOL

Reference: “Alliance for Public Waldorf Education Recommended Grade Level Placements of Common Core Standards In a Waldorf-Inspired Public School Program”

Revised: 9/15/2018