APPENDIX M

Description of some key instructional goals for core academic subjects (English, math, science, and humanities) in relationship to Oregon's academic content standards and benchmarks.

We show here some key goals for grades 1-5. This sampling of benchmarks are drawn from the ODE website. We will also include the state standards and benchmarks for kindergarten, in keeping with standards applied throughout the district.

Grades 1-3 Instructional Goals

Reading and Literature Goals

In grades 1-3 the school curriculum will adopt a balanced approach to teaching literacy. At these grade levels MCCS will provide direct instruction in addition to project based instruction, using state adopted curriculum, to address the K-2 foundations and the grade 3 standards. MCCS declares all of the grade 3 Oregon State reading and literature standards as instructional goals. Thus our goals are in alignment with the Oregon content standards.

Reading Goals for Grades 1-3:

- Read regular words with several syllables.
- Use letter-sound correspondence knowledge and structural analysis to decode words.
- Know and use more complex word patterns when reading (e.g., -ight) to decode unfamiliar words.
- Read aloud grade-level narrative (story) text and expository (information) text fluently and accurately with appropriate pacing, change in voice, and expression.
- Read aloud unpracticed grade-level text at a target rate of 110-120 wcpm (words correct per minute).
- Read or demonstrate progress toward reading at an independent and instructional reading level appropriate to grade level.
- Determine the meanings of words using knowledge of antonyms, synonyms, homophones, and homographs.
- Use sentence and word context to find the meaning of unknown words.
- Categorize words by their relationships (e.g., dog/mammal, animal/living things).
- Infer word meanings from taught roots, prefixes (e.g., un-, re-, pre-, bi-, mis-, dis-), and suffixes (e.g., -er, -est, -ful).
- Use a dictionary or glossary to learn the meaning and other features of unknown words.
- Read written directions, signs, captions, warning labels, and informational books.
- Use titles, tables of contents, chapter headings, illustrations, captions, glossaries, and indexes to locate information in text.

- Interpret information from diagrams, charts, and graphs.
- Follow simple multiple-step written instructions (e.g., how to assemble a product or play a board game).
- Alphabetize a list of words to the third letter.
- Use dictionaries, encyclopedias, CD-ROMs, and Internet to locate information.
- Demonstrate comprehension by identifying answers to questions about the text.
- Distinguish the main idea and supporting details in informational text.
- Determine significant information from the text, including problems and solutions.
- Summarize major points from informational text.
- Recall major points in the text and make predictions about forthcoming information.
- Distinguish cause-and-effect and fact and opinion.
- Ask how, why, and what-if questions in interpreting informational texts.
- Ask questions and support answers by connecting prior knowledge with literal information found in, and inferred from, the text.
- Use knowledge of the author's purpose to comprehend informational text.
- Take part in creative response to text, such as dramatizations and oral presentations.

Literature Goals for Grades 1 - 3:

- Identify the speaker or narrator in a selection.
- Distinguish the order of events or a specific event from a sequence of events.
- Determine significant events from the story.
- Summarize major points from literary text.
- Determine what characters are like by what they say or do and by how the author or illustrator portrays them.
- Predict probable future outcomes or actions.
- Determine and discuss the underlying theme or author's message in literary text.
- Recognize cause-and-effect relationships in literary text.
- Compare and contrast versions of the same stories from different cultures.
- Create different endings to stories and identify the reason and the impact of the endings.

<u>Writing Goals for Grades 1-3:</u>

At the grade levels grade 1-3 MCCS will emphasize the following goal as an important aspect of the science focus of the school.

- Write brief reports:
    - Include observations and information from two or more sources.
    - Use diagrams, charts, or illustrations that are appropriate to the text.

As appropriate the writing goals will be integrated into curricular goal of "Write brief reports". The rest of the curricular goals for writing are:

- Write appropriately for purpose and audience.
- Create a single paragraph with a topic sentence, simple supporting facts and details, and a concluding sentence.
- Use vivid adjectives and action verbs.
- Begin to elaborate descriptions and incorporate figurative wording in own writing.
- Write correctly complete sentences of statement, command, question, or exclamation.
- Spell correctly:

    - one-syllable words that have blends (play, blend) or a silent letter (walk);
    - contractions (isn't, aren't, can't);
    - compounds;
    - common spelling patterns (qu-, changing win to winning, and changing the ending of a word from –y to –ies to make a plural such as berry/berries); and
    - common homophones (words that sound the same but have different spellings, such as hair/hare).

- Spell correctly previously studied words and spelling patterns in own writing.
- Notice when words are not correct, and use a variety of strategies to correct (e.g., word lists, dictionary).
- Use subjects and verbs that are in agreement (we are instead of we is).
- Correctly use past (he talked), present (he talks), and future (he will talk) verb tenses.
- Correctly use pronouns (it, him, her), adjectives (yellow flower, three brown dogs), compound nouns (football, snowflakes), and articles (a, an, the).
- Identify and correctly write singular possessive nouns (dog's tail).
- Use commas in dates (On June 24, 2003, she'll be nine.), locations (Salem, Oregon) and addresses (421 Coral Way, Miami, FL), and for items in a series (beans, corn, cucumbers, and squash).
- Approximate correct use of quotation marks to show that someone is speaking ("You may go home now," she said.).
- Capitalize correctly geographical names, holidays, and special events (We always celebrate Memorial Day by gathering at the Rose Garden in Portland, Oregon.).
- Write legibly in cursive and manuscript, leaving space between letters in a word, words in a sentence, and between words and the edges of the paper.
- Write narratives:
    - Provide a context within which an action takes place.
    - Include well-chosen details to develop the plot.
    - With some guidance, provide insight into why the selected incident is memorable.
- Write descriptive pieces about people, places, things, or experiences:
    - Develop a unified main idea.
    - Use details to support the main idea.
- Write letters, thank-you notes, and invitations:
    - With assistance, determine the knowledge and interests of the audience and establish a purpose and context.
    - Include the date, proper salutation, body, closing, and signature.
- Write brief responses to literary text:
    - Include what the text is about.
- Include personal response to text supported by reasons.
- Understand the structure and organization of various reference materials (e.g., dictionary, thesaurus, atlas, encyclopedia, CD-ROM, and online sources).

<u>Mathematics Goals for Grades 1-3</u>

MCCS will provide direct instruction in addition to project based learning, using state adopted curriculum addressing the K-2 foundations and the grade 3 standards. MCCS declares all grade 3

mathematics standards as instructional goals. At grade levels 1-3 MCCS will institute the following as important goals to accentuate science emphasis of the school:

- Represent and interpret data using tally charts, pictographs, and bar graphs, including identifying the mode and range.
- Ask and answer simple questions that can be answered by collecting, organizing, and displaying data.
- Draw conclusions and make predictions and inferences from tally charts, pictographs, or bar graphs.
- Describe, extend, and make generalizations about numeric and geometric patterns (e.g., increasing the number of sides of two-dimensional geometric figures in sequence; consecutive odd numbers).
- Describe temperature changes and concepts as they occur in daily situations.
- Determine measurements of length to the nearest centimeter and nearest meter.
- Estimate the length of objects in meters and centimeters.
- Determine measurements of volume to the nearest milliliter or liter of measuring cups, beakers, or graduated cylinders.
- Estimate volume of objects in milliliters and liters.
- Determine measurements of weight to the nearest gram and kilograms.
- Estimate weight of objects in grams and kilograms.

The other grade level standards are very important to a well rounded education and will also be declared as instructional goals at MCCS. Thus the MCCS goals are in alignment with the Oregon State content standards.

The curricular goals for mathematics are:

- Read, write, order, model, and compare whole numbers less than one thousand.
- Identify the place value and actual value of digits in a whole number less than one thousand.
- Compose and decompose whole numbers less than one thousand by place value.
- Order, model, compare, and identify commonly used fractions (halves, thirds, fourths, eighths, tenths) using concrete models and visual representations.
- Develop understanding of fractions as parts of unit wholes, as parts of a collection, as locations on number lines, and as divisions of whole numbers.
- Locate whole numbers and common fractions on a number line.
- Order and compare dollars and coins by making equivalent amounts up to $10.00.
- Demonstrate the counting skills of skip counting as they relate to multiplication facts.
- Develop and evaluate strategies for multiplying whole numbers.
- Add and subtract pairs of up to four digit numbers.
- Develop and acquire efficient strategies for determining multiplication and division facts 0-9.
- Multiply a two-digit number by a one-digit number.
- Make change for amounts up to $10.00.
- Mentally add or subtract multiples of 10, 100, or 1000 to or from a number.
- Identify the operation (add, subtract, multiply, or divide) for solving a problem.
- Develop and use strategies (overestimate, underestimate, range of estimates) to make reasonable estimates.

- Recognize which place value will be the most helpful in estimating an answer.
- Represent situations using models of multiplication and division (e.g., repeat addition, equal groups of objects, arrays, repeated subtraction, equal grouping, sharing equally).
- Use the commutative and associative properties of multiplication to simplify calculations.
- Describe the effects of multiplying or dividing by a whole number.
- Demonstrate the zero property for multiplication and identity property for multiplication and division.
- Determine the mode and range of a set of data.
- Supply a missing element in or determine a rule that extends number patterns involving addition and multiplication by a single-digit number.
- Generate a pattern or sequence from a verbal, written, and pictorial description.
- Use letters, boxes, or other symbols to stand for a missing number in simple expressions or equations.
- Identify and apply a relationship between two quantities (e.g., If four people can be seated at one table, how many tables are needed to seat 24 people?).
- Select the most appropriate tool and metric unit to measure length, time, weight, and volume.
- Compare units of measure between customary and metric systems (e.g., inches > centimeters, liters < gallons).
- Understand and explain the need for using standard units.
- Determine elapsed time for given activities using representations of analog and digital clocks.
- Tell time to the nearest minute using an analog clock.
- Find areas of rectangular arrays.
- Identify, describe, compare, and classify common three-dimensional geometric objects: cubes, prisms, spheres, pyramids, cones, and cylinders.
- Compare and classify solid geometric shapes (e.g., triangular, pyramid, cube, rectangular prism) according to the number and shapes of faces, edges, and vertices.
- Recognize and identify attributes of three-dimensional geometric shapes (faces, edges, vertices), including attributes of shapes in the environment.
- Describe paths for moving from one location to another on a grid.
- Identify line and rotational symmetry.
- Predict and describe the results of performing reflections, rotations and translations of triangles.
- Interpret the concepts of a problem-solving task and translate them into mathematics.
- Choose strategies for problem solving that can work and then carry out the strategies chosen.
- Produce identifiable evidence of a second look at the concepts/strategies/calculations to defend a solution.
- Use pictures, symbols, and/or vocabulary to convey the path to the identified solution.
- Accurately solve problems using mathematics.

Science Goals for Grades 1-3

In grades 1-3 the school curriculum will use the grade 3 Oregon State content standards and incorporate some grade 5 content standards into the lower grades in order to accelerate students into a more rigorous science curriculum. At all grade levels MCCS will provide instruction through

hands-on place-based projects. The projects will emphasize the local area environment to increase relevance and raise interest levels of the students. MCCS declares all of the grade 3 science standards as instructional goals. In addition, the 5th grade standards listed below will be included as part of the grades 1-3 curriculum goals.

3rd grade standards:

- Describe objects according to their physical properties.
- Describe changes that occur in matter.
- Describe an object's position and how to affect its movement.
- Identify common types and uses of energy.
- Recognize characteristics that are similar and different between organisms.
- Describe the basic needs of living things.
- Describe how related plants and animals have similar characteristics.
- Describe a habitat and the organisms that live there.
- Identify how some animals gather and store food, defend themselves, and find shelter.
- Recognize physical differences in Earth materials.
- Identify daily and seasonal weather changes.
- Identify and trace the movement of objects in the sky.
- Make observations. Based on these observations, ask questions or form hypotheses, which can be explored through simple investigations.
- Plan a simple investigation.
- Collect data from an investigation.
- Use the data collected from an investigation to explain the results.

5th grade standards included as part of the grades 1-3 curriculum goals:

- Recognize that the supply of many resources is limited, and that resources can be extended through recycling and decreased use.
- Recognize that discarded products contribute to the problem of waste disposal.
- Describe patterns of seasonal weather.
- Describe weather in measurable quantities including temperature, wind direction, wind speed, and precipitation.
- Interpret data over a period of time and use information to describe changes in weather from day to day, week to week, and season to season.
- Group or classify organisms based on a variety of characteristics.
- Classify a variety of living things into groups using various characteristics.
- Make observations. Ask questions or form hypotheses based on those observations, which can be explored through scientific investigations.
- Design a simple scientific investigation to answer questions or test hypotheses.
- Collect, organize, and summarize data from investigations.

<u>Humanities/Social Studies Goals for Grades 1-3</u>

Grades 1-3 will use the grade 3 Oregon State content standards and some grade 5 content standards to help emphasize the local area. At all grade levels MCCS will provide instruction

through hands-on, place-based projects. The projects will emphasize the local area environment to increase relevance and raise interest levels of the students. MCCS declares all of the grade 3 social science standards as instructional goals. In addition, the listed 5th grade standards will be part of the grades 1-3 curriculum goals.

Grade 3 Standards

- Identify essential ideas and values expressed in national symbols, heroes, and patriotic songs of the United States.
- Identify rights that people have in their communities.
- Identify ways that people can participate in their communities and the responsibilities of participation.
- Distinguish local and world issues.
- Understand that limited resources make economic choice necessary.
- Identify ways of making money to buy a desired product and what it will cost in time and energy for each option.
- Identify physical characteristics of places and compare them.
- Understand how peoples' lives are affected by the physical environment.
- Understand calendar time sequences and chronological sequences within narratives.
- Understand events from local history.
- Identify an issue or problem that can be studied.
- Gather information relating to an issue or problem.
- Identify and compare different ways of looking at an event, issue, or problem.
- Identify how people or other living things might be affected by an event, issue, or problem.
- Identify possible options or responses; then make a choice or express an opinion.

Grade 5 standards:

- Know how the United States makes treaties with other nations, including Indian nations.
- Examine and understand how to prepare maps, charts, and other visual representations to locate places and interpret geographic information.
- Use maps and charts to interpret geographic information.
- Use other visual representations to locate, identify, and distinguish physical and human features of places and regions.
- Locate, identify, and know the significance of major mountains, rivers, and land regions of Oregon.
- Explain how migrations affect the culture of emigrants and native populations.
- Understand the interactions and contributions of the various people and cultures that have lived in or migrated to the area that is now Oregon from pre-history through the period of the American Revolution.
- Understand how individuals changed or significantly influenced the course of local history.

<u>Physical Education Goals for Grades 1-3</u>

The MCCS will mandate time every day for Physical Education. The focus of the physical education curriculum will be fitness for life. The MCCS will adopt all the Oregon State content standards for these grade levels with a focus on consistency.

Speaking and listening goals

Speaking and listening goals at the grade levels 1-3 will not be declared as primary instructional goals for MCCS. Although important, we believe strong speaking skills can be developed at a higher level when basic reading and writing skills become more difficult.

Grades 4-5 Instructional Goals

Speaking and listening goals

Speaking and listening goals at the grade 4-5 level are not going to be declared as instructional goals for the MCCS. Although important, we believe strong speaking skills can be developed through indirect opportunities. MCCS does not intend to assess and report progress in this area.

Reading and Literature

In grades 4 to 5 the school curriculum will adopt a more literature and writing based approach to teaching literacy. At these grade levels the MCCS will utilize some direct instruction with a state adopted curriculum. The majority of instruction will be the foundations of writing. The MCCS declares all of the grade 4-5 reading and literature content standards as instructional goals. The reading goals for grades 4 to 5 are listed below:

Grade 4	Grade 5
Read aloud grade-level narrative text and informational text fluently and accurately with effective pacing, intonation, and expression; by the end of fourth grade, read aloud unpracticed grade-level text at a rate of 115-140 wcpm (words correct per minute). Read or demonstrate progress toward reading at an independent and instructional reading level appropriate to grade level.	Read aloud grade-level narrative text and informational text fluently and accurately with effective pacing, intonation, and expression; by the end of fifth grade, read aloud unpracticed grade-level text at a rate of 125-150 wcpm (words correct per minute). Read or demonstrate progress toward reading at an independent and instructional reading level appropriate to grade level.
Determine meanings of words using contextual and structural clues. Distinguish and interpret words with multiple meanings (i.e., quarter) by using context clues. Apply knowledge of synonyms, antonyms, homographs, and idioms to determine the meaning of words and phrases.	Determine meanings of words using contextual and structural clues. Understand and explain frequently used synonyms, antonyms, and homographs. Determine the meanings of figurative expressions, such as those in similes and metaphors. Use word origins to determine the meaning of

Grade 4	Grade 5
Use knowledge of root words to determine the meaning of unknown words within a passage (nation, national, nationality). Use common roots (meter = measure) and word parts (therm = heat) derived from Greek and Latin, and use this knowledge to analyze the meaning of complex words (thermometer).	unknown words and phrases. Know less-common roots (graph = writing, logos = the study of) and word parts (auto = self, bio = life) from Greek and Latin, and use this knowledge to analyze the meaning of complex words (autograph, autobiography, biography, biology). Use a thesaurus to determine related words and concepts.
Read textbooks, biographical sketches, letters, diaries, directions, procedures, catalogs, magazines, and informational books. Locate information in titles, tables of contents, chapter headings, illustrations, captions, glossaries, indexes, graphs, charts, diagrams, and tables to aid understanding of grade-level text. Find information in specialized materials (e.g., atlas, magazine, catalog). Use structural features found in informational text (e.g., headings and sub-headings) to strengthen comprehension.	Read textbooks, biographical sketches, letters, diaries, directions, procedures, magazines, news stories, and almanacs. Use the features of informational texts, such as formats, graphics, diagrams, illustrations, charts, maps, and organizational devices to find information and support understanding. Find information in specialized materials (e.g., thesaurus, almanac, newspaper). Follow multiple-step directions (e.g., for completing an experiment or an activity or for using a product).
Identify and/or summarize sequence of events, main ideas, facts, supporting details, and opinions in informational and practical selections. Identify key facts and information after reading two passages or articles on the same topic.	Recognize and/or summarize sequence of events and main ideas presented in informational texts, identifying evidence that supports those ideas. Identify key facts and information after reading several passages or articles on the same topic.
Make and confirm predictions about text by using prior knowledge and ideas presented in the text itself, including illustrations, titles, topic sentences, and important words. Draw inferences or conclusions about an author's meaning supported by facts and events from the text. Identify the main idea of a passage when it is not explicitly stated.	Predict future outcomes supported by the text. Draw inferences, conclusions, or generalizations about main ideas in text, and support them with textual evidence and prior knowledge. Determine unstated ideas and concepts, noting and analyzing evidence that supports those unstated ideas, such as images, patterns, or symbols in the text.
Determine the author's purpose, and relate it to details in the text.	Determine the author's purpose, and relate it to specific details in the text.

Grade 4	Grade 5
Distinguish between cause-and-effect and between fact and opinion in expository text. Recognize text that is written primarily to persuade, and distinguish between informational and persuasive text. Identify and analyze text that uses sequential or chronological order. Distinguish text that is biographical and autobiographical.	Draw conclusions about whether portions of the passage are facts or opinions. Recognize and analyze characteristics of persuasive text. Evaluate new information and ideas by testing them against known information and ideas. Identify and analyze text that uses prioritization as an organizational pattern (e.g., newspaper articles).

The study of literature will become more prominent in grades 4-5. MCCS will use literature circles as the primary method to study literature. The literature goals for grades 4 to 5 are listed below:

Grade 4	Grade 5
Identify and/or summarize sequence of events, main ideas, and supporting details in literary selections. Identify the main problem or conflict of the plot, and explain how it is resolved.	Identify and/or summarize sequence of events, main ideas, and supporting details in literary selections. Identify the main events of the plot, their causes, and the influence of specific events on future actions.
Make and confirm predictions about text using ideas presented in the text itself. Use knowledge of the situation and setting and of a character's traits and motivations to determine the causes for that character's actions. Identify the main idea of a passage when it is not explicitly stated. Draw inferences or conclusions about a text based on explicitly stated information.	Predict future outcomes supported by the text. Identify the qualities of the character (e.g., courage, cowardice, ambition), and analyze the effect of these qualities on the plot and the resolution of the conflict. Identify the theme, understanding that theme refers to the lesson, moral, or meaning of a selection, whether it is implied or stated directly. Draw inferences, conclusions or generalizations about text, and support them with textual evidence and prior knowledge.
Recognize that certain words (buzz, clang) and rhyming patterns can be used in a selection to imitate sound (onomatopoeia). Compare and contrast tales from different cultures, and tell why there are similar tales in diverse	Identify and describe the function and effect of common literary devices, such as imagery, metaphor, and symbolism. Define figurative language, including simile, metaphor, exaggeration, and personification, and

Grade 4	Grade 5
cultures. Differentiate among various imaginative forms of literature (e.g., fantasies, fables, myths, and fairy tales).	explain the effects of its use in a particular work. Differentiate among the different types of fiction, and apply knowledge of the major characteristics of each (e.g., folklore, mystery, science fiction, adventure, fantasy). Evaluate the believability of characters and the degree to which a plot is believable or realistic.

Writing:

All the grade level writing standards are very important to a well rounded education and will be declared as instructional goals also. As appropriate the writing goals will be integrated into science based project reports. MCCS will focus on functional report writing as the vehicle for creating competent writers.
The curricular goals for writing follow:

Grade 4	Grade 5
Select a focus and a point of view based upon purpose and audience. Write multi-paragraph compositions that: • Provide an inviting introductory paragraph. • Establish and support a central idea with a topic sentence at or near the beginning of the first paragraph. • Include supporting paragraphs with simple facts, details, and explanations. • Present important ideas or events in sequence or chronological order. • Provide details and transitions to link paragraphs. • Conclude with a paragraph that summarizes the points. • Use correct indention. Use words that describe, explain, or provide additional details and connections.	Write for different purposes and to a specific audience or person, adjusting tone and style as appropriate. Write multi-paragraph compositions that: • Engage readers with an interesting introduction. • Present important ideas or events using organizational structures, such as sequential or chronological order, cause-and-effect, or similarity and difference. • Develop new ideas in separate paragraphs. • Provide details and examples to support ideas. • Provide transitions to link paragraphs. • Offer a concluding paragraph that summarizes important ideas and details. Use transitions (however, therefore, on the other hand) and conjunctions (and, or, but) to connect ideas. Use a variety of descriptive words, demonstrating awareness of impact on audience.
Use simple sentences and compound sentences in writing.	Use simple and compound sentences and begin using complex sentences.

Grade 4	Grade 5
Create interesting sentences using a variety of sentence patterns by selecting words that describe, explain, or provide additional detail and connections.	To achieve clarity of meaning and to enhance flow and rhythm, correctly use prepositional phrases, appositives, main clauses, and subordinate clauses.
Spell correctly: • roots (bases of words, such as un necessary, coward ly), • inflections (words like care / careful / caring), • suffixes and prefixes (-ly, -ness, mis-, un-), • syllables (word parts each containing a vowel sound, such as sur-prise or e-col-o-gy), and • homophones (to, too, two / hear, here / plain, plane / aisle, isle, I'll / caught, cot).	Spell correctly: • roots or bases of words, • prefixes (understood / misunderstood, excused / unexcused), • suffixes (final / finally, mean / mean-ness), • contractions (will not / won't, it is / it's, they would / they'd), • syllable constructions (in-for-ma-tion, mol-e-cule), and • words with more than one acceptable spelling (advisor / adviser).
Correctly use: • regular verbs (live/ lived, shout/shouted), • irregular verbs (swim/swam, ride/rode, hit/hit), • adverbs (slowly, quickly, fast), • prepositions (over, under, through, between), and • coordinating conjunctions (and, or, but) in writing.	Correctly use: • verbs that are often misused (lie/lay, sit/set, rise/raise), • modifiers (words or phrases that describe, limit or qualify another word) and pronouns (he/his, she/her, they/their, it/its). Ensure that verbs agree with their subjects.
Correctly use: • apostrophes to show possession (Troy's shoe, the cat's food), • apostrophes in contractions (can't, didn't, won't), and • quotation marks around the exact words of a speaker and titles of articles, poems, songs, short stories, and chapters in books. Use underlining, quotation marks, or italics to identify titles of documents. Correctly write plural possessive nouns (girls' hats).	Correctly use: • parentheses to explain something that is not considered of primary importance to the sentence, • a colon to separate hours and minutes (10:30 a.m., 6:30 p.m.) and to introduce a list (collect the following items for the project: map, pictures, scissors, tape), and • commas in direct quotations (He said, "I'd be happy to go."). Correctly place commas and periods inside quotation marks.
Capitalize names of books, magazines, newspapers, works of art, musical compositions, organizations, and the first word in quotations, when appropriate.	Use correct capitalization.

Grade 4	Grade 5
Write smoothly and legibly in cursive or manuscript, forming letters and words that can be read by others. Read cursive.	Write legibly in cursive or manuscript. Read cursive fluently.
Write personal narratives: • Include ideas, observations, or memories of an event or experience. • Provide a context to allow the reader to imagine the world of the event or experience. • Use concrete sensory details. • Provide insight into why the selected event or experience is memorable.	Write fictional narratives: • Establish a plot, point of view, setting, conflict, and resolution. • Show through description, rather than tell (summarize), the events of the story.
Write responses to literature: • Demonstrate an understanding of the literary work. • Support interpretations through references to both the text and prior knowledge.	Write responses to literature: • Demonstrate an understanding of a literary work. • Support interpretations through references to the text and to prior knowledge. • Develop interpretations that exhibit careful reading and understanding.
Write informational reports: • Ask and then address a central question about an issue or event. • Include facts and details for focus. • Develop the topic with simple facts, details, examples, and explanations. • Use more than one source of information, including speakers, books, newspapers, other media sources, and online information.	Write research reports about ideas, issues, or events: • Frame questions that direct the investigation. • Establish a main idea or topic. • Use a variety of information sources, including firsthand interviews, reference materials, and electronic resources to locate information to support the topic. • Cite references appropriately.
Begin writing persuasive compositions to convince the reader to take a certain action or to avoid a certain action.	Write persuasive compositions: • State a clear position in support of a proposal. • Support a position with relevant evidence. • Follow a simple organizational pattern. • Address reader concerns.
Write summaries that contain the main idea of the reading selection.	Write summaries, using formal paragraph structure, that contain the main ideas of the reading selection and the most significant details (e.g., summaries for book reports, chapters of a text, magazine articles). Write business letters to request information (e.g., for school reports).
Use multiple reference materials (e.g., dictionary, encyclopedia, online information) as aids to writing. Use note-taking skills.	Use organizational features of printed text to locate relevant information. Use effective note-taking techniques to ensure appropriate documentation of quoted as well as

Grade 4	Grade 5
Locate information in reference texts by using organizational features (e.g., prefaces, appendixes). Understand the organization of almanacs, newspapers, and periodicals and how to use those print materials. Use a computer to draft, revise, and publish writing, demonstrating basic keyboarding skills.	paraphrased material. Create simple documents using a computer and employing organizational features, such as passwords, entry and pull-down menus, word searches, the thesaurus, and spell checks. Use a thesaurus to identify alternative word choices and meanings (e.g., when paraphrasing information). Quote or paraphrase information sources, citing them appropriately (e.g., Works Cited Entries—MLA).
Identify and discuss the use of cadence, repetitive patterns, and onomatopoeia for intent and effect.	Identify and discuss the purposes of media—information, entertainment, persuasion, interpretation of events, and transmission of culture. Identify and discuss the role of media in focusing people's attention on events and influencing their opinions on issues.

Mathematics

At these grade levels the MCCS will provide direct instruction using state adopted curriculum addressing the grade 4-5 standards. The MCCS declares all of the grade 4-5 mathematics content standards as instructional goals. The standards dealing with presentation and analysis will be a natural focus of the science based school. These standards will also be integrated with writing instruction through technical report writing. The curriculum goals for grades 4-5 follow:

Grade 4	Grade 5
Read, write, order, model, and compare whole numbers to one million, common fractions, and decimals to hundredths	Order, model, and compare common fractions, decimals and percentages
Identify the place value and actual value of digits in a number to one million	
Locate common fractions and decimals on a number line	Locate decimals and percentages on a number line
Model, recognize, and generate equivalent forms of decimals to hundredths	Model, recognize, and generate equivalent forms of commonly used fractions, decimals, and percents
	Identify classes of numbers (e.g., primes, composites, even, odd, multiples) in a 1-to-100 number chart and describe numeric patterns related to them.
	Recognize characteristics of odd, even, prime, and

Grade 4	Grade 5
	composite numbers
Determine factors of whole numbers to 100 using models such as arrays.	
Develop and evaluate strategies for multiplying and dividing whole numbers and adding and subtracting fractions with like denominators.	Develop and evaluate strategies with for computing with decimals and fractions.
Apply with fluency efficient strategies for determining multiplication and division facts 0-9	
Multiply a three digit number by a one digit number	
Divide a three digit number by a one digit number with or without remainders	Divide by two digit numbers
Determine the meaning of whole number remainders in a problem situation.	Determine the meaning of a remainder expressed as a whole number, fraction, or decimal in a problem situation involving division.
Add and subtract commonly used fractions with like denominators (halves, thirds, fourths, eighths, tenths) and decimals to hundredths	Add and subtract fractions and mixed numbers with common fractions found on a ruler (2, 4, 8, 16)
Add and subtract decimals to hundredths, including money amounts	Add, subtract, multiply, and divide decimals, including money amounts
Mentally multiply or divide multiples of 10 (E.G. 40x70 or 2700/30)	Model percentages on a hundreds grid to determine equivalent decimals and percentages.
Identify the most efficient operation (add, subtract, multiply, or divide) for solving a problem	Determine the order of operations for multiple-step calculations involving addition, subtraction, multiplication, and division
Select and use an appropriate estimation strategy (overestimate, underestimate, range of estimates) based on the problem situation when computing with whole numbers or money amounts	Select and use an appropriate estimation strategy (overestimate, underestimate, range of estimates) based on the problem situation when computing with decimals
Use place value concepts such as rounding to the nearest 10, 100, and 1000 to estimate and check reasonableness of answers.	Use referent numbers and rounding to estimate the magnitude of calculations with decimals.
Demonstrate the meaning of fractions as part of a unit whole or as part of a collection or set.	
Use inverse operations (addition and subtraction, multiplications and division) to solve problems and check solutions involving calculations with whole numbers	Use inverse operations (addition and subtraction, multiplication and division) to solve problems and check solutions involving calculations with decimals
Apply the commutative, associative and identity properties of addition and multiplication and the distributive property to simplify calculations with whole numbers	Apply the commutative, associative and identity properties of addition and multiplication and the distributive property to simplify calculations with decimals
Determine the median for a set of data and understand what each statistic does and does not	Compare two related sets of data using measures of center (mean, median, and mode) and spread (range)

Grade 4	Grade 5
indicate about the data.	
Determine the probability of a single event.	
	Connect simple fractional probabilities to events (E.G., HEADS IS 1 OUT OF 2; ROLLING A 5 ON A SIX-SIDED NUMBER CUBE IS 1/6)
Understand that the probability of an event can be represented by a number from 0 (impossible) to 1 (certain).	
Conduct experiments and simulations to determine experimental probability of different outcomes.	Design investigations to address a question and recognize how data collection methods affect the nature of a set of data.
	Understand the basic concepts of sampling (e.g. larger samples yield better results, the Need for representative samples).
REPRESENT and interpret data collected from probability experiments and simulations using tallies, charts, pictograms, and bar graphs, including determining probabilities of single events	REPRESENT and interpret data using tables, circle graphs, bar graphs, and line graphs or plots (first quadrant)
	Compare different representations of the same data and evaluate how well each representation shows important aspects of the data (e.g. circle and bar graphs, histograms with different widths).
	Evaluate the appropriateness of representations of categorical and numeric data (e.g. categorical types of lunch food and numerical heights of students in a class).
Predict the degree of likelihood of a single event occurring using words such as certain, impossible, most often, least often, likely, and unlikely	Analyze data from tables and bar graphs using mean, median, mode, and range, and draw conclusions
Predict the likelihood of an outcome prior to an experiment and compare predicted probability with the actual results.	
DESCRIBE, extend and make generalizations about patterns and sequences and supply missing elements in chart or table format	REPRESENT and analyze patterns and functions using words, table, graphs or simple algebraic expressions
Supply a missing element in or determine a rule that extends number patterns involving addition or subtraction of decimals	Supply a missing element in or determine a rule that extends number patterns involving multiplication or division
Select operational and relational symbols to make a number sentence true (e.g., 4 _ 3 = 12, 5 + 17 _ 25)	Use letters, boxes, or other symbols to stand for an unknown quantity in expressions or equations
Represent and solve open sentences or problems	Represent the idea of a variable as an unknown

Grade 4	Grade 5
involving numeric equations or inequalities (e.g., 3+?=4; 2+1>?, 4<2+?)	quantity using a letter or symbol
	Represent and evaluate algebraic expressions involving a single variable (e.g., 4s, .05n)
Translate between different representations (words, numeric, pictorial) of a simple quantitative relationship (e.g., match a table of values to its rule)	Identify and represent whole number data on a coordinate graph (first quadrant)
	Identify or describe a situation which may be modeled by a given graph
	Identify and describe situations with constant or varying rates of change and compare them.
Select the most appropriate tool and U.S. customary unit to measure length, perimeter, weight, and volume	
Carry out simple unit conversions within the U.S. customary system (e.g., in to ft, oz to lb)	Using estimation, convert from a measurement expressed using one unit within a system to one using a comparable unit within the other system (e.g., inches to centimeters)
	Understand that measurements are approximations and understand how differences in units and tools affect precision.
Determine elapsed time requiring unit conversions (e.g., weeks to months, minutes to hours)	
Read temperature measurements of thermometers with Fahrenheit and Celsius units and Recognize reasonable ranges of temperatures for different events (e.g. cold or hot day)	Know common referents for Fahrenheit and Celsius temperatures (e.g. freezing point, boiling point)
Determine measurements of length and perimeter to the nearest inch and nearest foot	Determine measurements of length and perimeter to the nearest tenth centimeter (millimeter) and nearest tenth meter
Estimate the length of the objects in inches, feet and yards.	
Determine measurements of volume to the nearest 1/4 cup, quart, or gallon of measuring cups, beakers, or graduated cylinders	
Estimate the volume of objects in cups, quarts, and gallons.	
Determine measurements of weight to the nearest ounce and pound	
Estimate the weight of objects in ounces and	

Grade 4	Grade 5
pounds.	
	Estimate the measure of acute, right and obtuse angles in degrees using referent angles of 45 and 90 degrees and determine the measurement of angles between 0 and 180 degrees to the nearest degree
Relate the area of a rectangle and its dimensions to area models for multiplication and division.	DEVELOP and use formulas for determining the perimeter and area of rectangles, and related triangles and parallelograms
Determine perimeter and area of rectangles given lengths of sides	Develop strategies to measure the perimeter of simple polygons and everyday objects.
	Analyze the effects on area and perimeter by combining two simple geometric figures (e.g. two right triangles and a rectangle.
	Compare and contrast the formulas for area of rectangles, related triangles and parallelograms.
Estimate and measure the area of a rectangular surface using unity squares.	Estimate and measure volume of a rectangular solid using unit cubes.
Use referents for U.S. customary measurements to make estimates of length, weight, and volume and evaluate the reasonableness of the estimate (e.g. length of one floor tile and estimate length of classroom).	Use referents for metric measurements to make estimates of length, weight, and volume and evaluate the reasonableness of the estimate (e.g. height of teacher estimated in height of student lengths).
Identify, DESCRIBE, compare and classify quadrilaterals by their sides and angles	Identify, DESCRIBE, compare and classify triangles by their sides and angles
Identify right, acute, and obtuse angles in isolation and in geometric figures	
Use properties of quadrilaterals to determine the lengths of their sides and perimeters	Use properties of triangles to determine the lengths of their sides and perimeters
Develop, understand, and apply the property that the sum of the angle measures in a quadrilateral is 360 degrees	Develop, understand, and apply the property that the sum of the angle measures in a triangle is 180 degrees
Identify congruent quadrilaterals using concrete methods.	
Draw conclusions about the measures of corresponding sides and angles of congruent quadrilaterals.	Draw conclusions about the measures of corresponding sides and angles of two congruent and similar triangles.
Model, sketch, draw and label points, lines, line segments, angles, rays, quadrilaterals, and parallel	Accurately draw and label triangles, angles, and line segments using measurement tools.

Grade 4	Grade 5
perpendicular and intersecting lines.	
Build three dimensional objects and sketch two dimensional representations of the object.	Identify and build three-dimensional objects from two-dimensional representations
Locate coordinates of points on graph paper, maps, globes and other charts	MAKE and use coordinate systems to specify location and describe paths
Determine the shortest path of horizontal and vertical movement between two locations on a grid	Find the distance between points along the horizontal and vertical lines of a coordinate system
	Identify and describe line and rotational symmetry in two-dimensional shapes and designs
Predict and describe the results of performing reflections, rotations and translations of quadrilaterals	
Identify and describe a motion or series of motions that will show two quadrilaterals are congruent	Identify and describe a motion or series of motions that will show two triangles are congruent
Interpret the concepts of a problem-solving task and translate them into mathematics	Interpret the concepts of a problem-solving task and translate them into mathematics
Choose strategies that can work and then carry out the strategies chosen	Choose strategies that can work and then carry out the strategies chosen
Produce identifiable evidence of a second look at the concepts/strategies/ calculations to defend a solution	Produce identifiable evidence of a second look at the concepts/strategies/ calculations to defend a solution
Use pictures, symbols, and/or vocabulary to convey the path to the identified solution	Use pictures, symbols, and/or vocabulary to convey the path to the identified solution
Accurately solve problems using mathematics	Accurately solve problems using mathematics

Science

In grades 4 to 5 the school curriculum will use the grade 4 to 5 content standards as curricular goals. At all grade levels the MCCS will provide instruction though hands on place-based projects, many of which will be conducted in the field. The projects will emphasize the local area environment to increase relevance.

The science goals for grades 4 to 5 are listed below:

Grade 4	Grade 5
↲Identify whether something is solid, liquid or gas. ↲Know that air is a substance that surrounds us, takes up space, and whose movement we feel as wind. AAAS BSL 4B, 3-5, #4; Atlas p.55,57,59&77	↲Recognize that a substance can exist in different states of matter (e.g., ice, water, and water vapor). ↲Know that when liquid water disappears, it turns into a gas (vapor) in the air and can reappear as a liquid when cooled, or as a solid if cooled below the freezing point of water. Clouds and fog are made of tiny droplets of water. AAAS BSL 4B: 3-5. #3: Atlas

Grade 4	Grade 5
	p.57&59 ↲Know that heating and cooling cause changes in the properties of materials. Many kinds of changes occur faster under hotter conditions. AAAS BSL 4D, 3-5, #1; Atlas p.59&61 @ *Distinguish among solids, liquids, and gases.* @ *Identify unique properties of each state of matter.*
↲Understand that heating and cooling cause physical changes in the properties of materials. AAAS BSL 4D, 3-5, #1; Atlas p.59&61	↲Understand that most substances can exist as a solid, liquid and gas depending on temperature. AAAS SFAA p.47, 6-8 @ *Recognize that heating and cooling cause changes in states of matter.* @ *Identify changes in states of matter seen in the environment.*
↲Understand that forces cause changes in speed or direction of motion. AAAS BSL 4F, 3-5, #1; Atlas p.43&63	↲Understand that the greater the force, the greater the change in motion. AAAS BSL 4F, 3-5, #1; Atlas p.43&63 @ *Recognize and describe the motion of an object in terms of one or more forces acting on it.*
↲Recognize that without touching them, material that has been electrically charged pulls on all other materials and may either push or pull other charged materials. AAAS BSL 4G, 3-5, #3 ↲Recognize that magnetism and gravity are forces.	@ *Recognize that magnets attract and repel each other and other materials.* @ *Recognize that things on or near Earth are pulled toward it by Earth's gravity.*
↲Understand that the sun is the main source of energy for people and they use energy in various ways. ↲Recognize that the energy in fossil fuels such as oil and coal comes from the sun indirectly, because the fuels come from plants that grew long ago.	@ *Identify various forms of energy including heat, light, sound, and electricity.* ↲Understand the effect of energy on matter.
↲Understand that some materials conduct heat much better than others. Poor conductors reduce heat loss. AAAS BSL 4E, 3-5, #3	↲Understand that when warmer things are put with cooler ones, the warm one loses heat and the cool one gains it until they are at the same temperature. A warmer object can warm a cooler one by contact or at a distance. AAAS BSL 4E, 3-5, #2 @ *Identify the direction of heat transfer on a diagram showing objects at different temperatures.* @ *Identify ways to produce heat including light,*

Grade 4	Grade 5
	burning, electricity, friction, and as a by-product of mechanical and electrical machines. *@ Identify examples of energy transfer in the environment.*
↲Know that a great variety of living things can be sorted into groups in many ways using various features to decide which things belong to which group. AAAS BSL 5A, 3-5, #1; Atlas p.81	↲Know that features used for grouping depend on the purpose of the grouping. AAAS BSL 5A, 3-5, #2 *@ Classify a variety of living things into groups using various characteristics.*
↲Understand that from food, people obtain energy and materials for body repair and growth. The indigestible parts of food are eliminated. AAAS BSL 6C, 3-5, #1; Atlas p.77&79 ↲Understand that by breathing, people take in the oxygen they need to live. AAAS BSL 6C, 3-5, #2 ↲Know that skin protects the body from harmful substances and other organisms and from drying out. AAAS BSL 6C, 3-5, #3; Atlas p.75&87	↲Understand that all living things are composed of cells, from just one to many millions, whose details usually are visible only through a microscope. Different body tissues and organs are made up of different kinds of cells. The cells in similar tissues and organs in other animals are similar to those in human beings but differ somewhat from cells found in plants. AAAS BSL 5C, 6-8, #1; Atlas p.73,75&81 ↲Understand that microscopes make it possible to see that living things are made mostly of cells. Some organisms are made of a collection of similar cells that benefit from cooperating. Some organisms' cells vary greatly in appearance and perform very different roles in the organism. AAAS BSL 5C, 3-5, #2; Atlas p.73&75 *@ Classify organs by the system to which they belong.*
↲Know that most living things need water, food, and air. AAAS BSL 5C, K-2, #2; Atlas p.73,77&79	↲Know that microscopes make it possible to see that living things are made mostly of cells. AAAS BSL 5C, 3-5, #2; Atlas p.73&75
↲Understand that some likenesses between children and parents are inherited, and that other likenesses are learned. AAAS BSL 5B, 3-5, #1; Atlas p.69,71,83&97	↲Understand that over the whole Earth, organisms are growing, producing offspring, dying and decaying. AAAS BSL 5E, 3-5, #3; Atlas p.77
↲Compare life cycles of common organisms. ↲Identify the stages of metamorphosis and various larval stages.	*@ Describe the life cycle of common organisms.* *@ Recognize that organisms are produced by living organisms of similar kind, and do not appear spontaneously from inanimate materials.*
↲Describe a food chain. ↲Recognize that all kinds of animals' food can be traced back to plants. AAAS BSL 5E, 3-5, #1; Atlas p.77&79	*@ Use drawings or models to represent a series of food chains for specific habitats.* *@ Identify the producers, consumers, and decomposers in a given habitat.* *@ Recognize how all animals depend upon plants whether or not they eat the plants directly.*

Grade 4	Grade 5
	@ *Explain the relationship between animal behavior and species survival.* @ *Describe the living and nonliving resources in a specific habitat and the adaptations of organisms to that habitat.*
↲Understand that individuals of the same kind differ in their characteristics, and sometimes the differences give individuals an advantage in surviving and reproducing. AAAS BSL 5F, 3-5, #1; Atlas p.83	@ *Describe changes to the environment that have caused the population of some species to change.* ↲Understand that individual organisms with certain traits are more likely than others to survive and have offspring. AAAS BSL 5F, 6-8, #2; Atlas p.83 @ *Identify conditions that might cause a species to become endangered or extinct.*
↲Understand that smaller rocks come from the breakage and weathering of bedrock and larger rocks. ↲Know that soil is made partly from weathered rock, partly from plant remains, and that soil also contains many living organisms. AAAS BSL 4C, 3-5, #2; Atlas p.51 ↲Understand that it is possible to use the materials in discarded products to make new products.	@ *Recognize that Earth materials are used in different ways based on differences in their physical and chemical properties.* @ *Recognize that soils vary in color, texture, components, reaction to water, and ability to support the growth of plants.* @ *Recognize that the supply of many resources is limited, and that resources can be extended through recycling and decreased use.* @ *Recognize that discarded products contribute to the problem of waste disposal.*
↲Understand that weather can be described by measurable quantities such as temperature, wind direction and speed, and precipitation.	↲Understand that weather changes some from day to day but things such as temperature and rain (or snow) tend to be high, low, or medium in the same months every year. @ *Describe weather in measurable quantities including temperature, wind direction, wind speed, and precipitation.* @ *Interpret data over a period of time and use information to describe changes in weather from day to day, week to week, and season to season.*
↲Recognize different features of the Earth's surface and understand that they were created through natural processes.	↲Understand that waves, wind, water and ice shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers. AAAS BSL 4C, 3-5, #1; Atlas p.51&81 @ *Identify effects of wind and water on Earth materials using appropriate models.* @ *Identify effects of rapid changes on Earth's surface features including earthquakes and*

Grade 4	Grade 5
	volcanoes. ↲Observe how the moon and sun create tides that influence the coastal environment.
↲Understand that the rotation of the Earth on its axis every 24 hours produces the night-and-day cycle. AAAS BSL 4B, 3-5, #2; Atlas p.43,45&47 ↲Know that like all planets and stars, the Earth and moon are approximately spherical in shape. The rotation of the Earth on its axis every 24 hours produces the night-and-day cycle. To people on Earth, this turning of the planet makes it seem as though the sun, moon, planets, and stars are orbiting the Earth once a day. AAAS BSL 4B, 3-5, #2; Atlas p.43,45&47 ↲Know that this turning of the planet makes it seem as though the sun, moon, and stars are orbiting around the Earth once a day. AAAS BSL 4B, 3-5, #2; Atlas p.43,45&47	↲Understand that the Earth is one of several planets that orbit the sun, and the moon orbits around the Earth. AAAS BSL 4A, 3-5, #4; Atlas p.43&45 @ *Describe Earth's position and movement in the solar system.* @ *Recognize that the rotation of the Earth on its axis every 24 hours produces the night-and-day cycle.*
↲Understand that telescopes magnify the appearance of some distant objects in the sky, including the moon and planets. AAAS BSL 4A, 3-5, #2; Atlas p.45,47&49 ↲Observe that the patterns in the sky remain stable but appear to move across the sky because of the Earth's motion. AAAS BSL 4A, 3-5, #1; Atlas p.43,45&47 ↲Know that stars are like the sun, some being smaller and some larger, but so far away that they look like points of light. AAAS BSL 4A, 3-5, #5; Atlas p.47&49 ↲Know that the number of stars that can be seen through telescopes is dramatically greater than can be seen by the unaided eye. AAAS BSL 4A, 3-5, #2; Atlas p.45,47&49	↲Observe that different stars can be seen at different times of the year and planets change their positions against the background of stars over time. ↲Understand that planets change their positions against the background of stars. AAAS BSL 4A, 6-8, #3; Atlas p.45
↲Write a set of sequential steps that addresses the question or hypothesis.	↲Write a set of logical, practical, safe and ethical steps, which addresses the question or hypothesis. ⊃Record logical procedures with only minor flaws; teacher guidance in safety and ethics is acceptable. ⊃Present a practical plan for an investigation, which addresses the question or hypothesis. ⊃Communicate a summary of a plan and some

Grade 4	Grade 5
	procedures, which may generally lack detail.
↲Write observations. ↲Collect and record data consistent with planned procedure. ↲Organize the data into displays with teacher support. ↲Transform data with teacher support. ↲Understand that tables and graphs can show how values of one quantity are related to values of another. AAAS BSL 9B, 3-5, #2; Atlas p.115,121&125	↲Write observations. ⊃Record reasonable data or observations generally consistent with the planned procedure. ⊃Design a data table for collection and organization of data using teacher suggestions. ⊃Transform original data into a useful format (e.g., graphs, averages, percentages, diagrams, tables) with teacher support and with minimal errors.
↲Summarize the results from an investigation. ↲Use the results to respond to the question or hypothesis. ↲Use numerical data in describing and comparing objects and events. AAAS BSL 12D, 3-5, #3; Atlas p.27,119&123	⊃Summarize the results from an investigation accurately. ⊃Use the results to respond to the question or hypothesis.
↲Understand that in something that consists of many parts, the parts usually influence one another. AAAS BSL 11A, 3-5, #1; Atlas p.35&133 ↲Know that something may not work as well (or at all) if a part of it is missing, broken, worn out, mismatched, or misconnected. AAAS BSL 11A, 3-5, #2; Atlas p.35&133	↲Identify interactions among parts of a system. ↲Identify systems. ↲Understand that something may not work as well (or at all) if a part of it is missing, broken, worn out, mismatched, or misconnected. AAAS BSL 11A, 3-5, #2; Atlas p.35&133
↲Use models to explain how objects, events, and/or processes work in the real world. ↲Know that how a model works after changes are made to it may suggest how the real thing would work if the same were done to it.	↲Understand that how a model works after changes are made to it may suggest how the real thing would work if the same were done to it. ↲Know that geometric figures, number sequences, graphs, diagrams, sketches, number lines, maps, and stories can be used to represent objects, events, and processes in the real world, although such representations can never be exact in every detail. ↲Construct a model of something in the real world.
↲Know that things change in steady repetitive, or irregular ways, or sometimes in more than one way at the same time. AAAS BSL 11C, 3-5, #2; Atlas p.51&121 ↲Describe actions that can cause or prevent changes.	↲Organize evidence of a change over time. ↲Know that often the best way to tell which kinds of change are happening is to make a table or graph of measurements.

Grade 4	Grade 5
↲Understand that almost anything has limits on how big or small it can be.	↲Identify similar systems with different scales (e.g., a fish tank versus pond, a toy train versus a locomotive).
↲Recognize different ways and places in which a variety of people practice science (e.g., an oceanographer might work on a research vessel or in a computer laboratory).	↲Identify different ways and places in which a variety of people practice science (e.g., an oceanographer might work on a research vessel or in a computer laboratory).
↲Identify that scientific explanations may change with new observations.	↲Understand that scientists have different explanations for the same set of observations. That usually leads to their making more observations in order to resolve the differences in interpretation. AAAS BSL 1B, 3-5, #3; Atlas p.17,21&23
↲Identify inferences based on specific observations.	↲Make challenges to an explanation based on the differences between observation and inference (e.g., Keep a notebook that describes observations made, carefully distinguishes actual observations from ideas and speculations about what was observed, and is understandable weeks or months later). AAAS BSL 12C, 3-5, #3; Atlas p.17,19&21
↲Know that technology has been part of life on the Earth since the advent of the human species. Like language, ritual, commerce, and the arts, technology is an intrinsic part of human culture, and it both shapes society and is shaped by it. The technology available to people greatly influences what their lives are like. AAAS BSL 3C, 3-5, #1; Atlas p.37	↲Understand that any invention is likely to lead to other inventions. Once an invention exists, people are likely to think up ways of using it that were never imagined at first. AAAS BSL 3C, 3-5, #2; Atlas p.37
↲Identify types, quantities, and sources of natural resources. ↲Identify personal choices that have an affect on local or regional resources or ecosystems (e.g., use of pesticides and herbicides on home lawns). ↲Understand that technologies often have drawbacks as well as benefits. A technology that helps some people or organisms may hurt others—either deliberately (as weapons can) or inadvertently (as pesticides can). When harm occurs or seems likely, choices have to be made or new solutions found. AAAS BSL 3C, 3-5, #5; Atlas p.39	↲Recognize the affect of lifestyle choices on availability of resources (e.g., gas consumption in developed versus underdeveloped countries).
↲Give examples in which scientific developments help keep us healthy, (e.g., vaccinations and medicines).	↲Give examples in which scientific developments help keep us safe (e.g., stronger materials for bike helmets).
↲Describe and use tools to gather scientific information (e.g., microscope, compass, protractor, and balance).	↲Explain that using technology to solve a problem may create other problems. AAAS BSL 3B, 3-5, #3; Atlas p.39
↲Design a scientific project with limited time and	↲Design a scientific project with limited time,

Grade 4	Grade 5
materials (e.g., paper tower, toothpick bridge).	materials, and information.

Humanities/Social Studies

In grades 4 to 5 the school curriculum will use the state content standards as curricular goals. At all grade levels the MCCS will provide instruction though hands on place-based projects. The projects will emphasize the local area environment to increase relevance.

The social science goals for grades 4 to 5 are listed below:

Grade 4	Grade 5
	Identify essential ideas of our republican form of government as expressed in the Declaration of Independence and the Constitution.
Identify ideas and values found in the Declaration of Independence and the Constitution.	Identify the essential ideas of our republican form of government expressed in the Declaration of Independence and the Constitution. Discuss "rule of law" as "all members of society, even leaders, must obey the laws."
	Identify the primary functions of federal, state, and local governments.
Understand the responsibilities and interrelationships of state. Public safety (police, fire), transportation (streets, highways, bus system), education and recreation (schools, libraries, parks) as responsibilities of state government. Laws are made to protect individual rights and the common good. Laws are made by political representatives or by the people.	Understand the responsibilities and interrelationships of the federal government. Public safety (police, fire), transportation (streets, highways, bus system), education and recreation (schools, libraries, parks) as responsibilities of local governments. Laws are made to protect individual rights and the common good. Laws are made by political representatives or by the people.
	Understand the roles and responsibilities of the three branches of government.
Understand why laws are made and who makes them in relationship to state. Introduce the definition of the three branches of government: legislative, executive, and judicial. Know the branches of state government.	Understand how laws are made and who makes them in relationship to the federal government: Legislative: passes laws; Executive: carries out and enforces laws; Judicial: makes decisions concerning laws; the legislative branch at the federal level is called the Congress; the executive branch at the federal level is headed by the President, the executive branch at the state level is headed by the Governor; the judicial branch at the federal and state levels is headed by the Supreme Court. Legislative: Passes laws; federal level is called "Congress"; state level is called "legislature". Executive: enforces laws; federal level is called "President"; state level is called "governor". Judicial: makes decisions concerning laws; federal level is called "supreme court"; state level is called "supreme

Grade 4	Grade 5
	court".
	Identify the rights of U.S. citizens.
Understand the rights of U.S. citizens.	Understand basic rights that are given to citizens of the United States. Distinguish between rights and privileges of citizens. Freedom of religion, speech press, and assembly.
	Understand how citizens can learn about public issues.
Understand the responsibilities individuals have to participate in their state.	Understand the responsibilities individuals have to participate in their nation.
	Identify and give examples of how individuals can influence the actions of government.
Explain the importance of individual voluntary participation in local and state democratic processes. Practice public discussion and debate as a means for consensus and decision-making.	Explain ways individuals participate in the democratic process, and the role of individuals in national elections. Citizens can learn about public issues through reading and the media (newspapers, television, radio, magazines), discussing issues with other citizens and attending meetings of government organizations (school boards, city council). Citizens can influence the actions of government by voting, contacting public officials, signing petitions, taking part in peaceful demonstrations, and working on or contributing money to political campaigns.
	Recognize and give examples of how nations interact with one another through trade, diplomacy, cultural contacts, treaties, and agreements.
Give examples of how countries and nations interact with one another. Discuss examples of how countries and nations interact, including Indian nations. Know what a treaty is and how it works. Recognize what are things countries can learn from other countries.	Explain how the United States interacts with other countries using treaties and other actions. The United States makes treaties with other nations, including Indian nations, to formalize agreements regarding rights or national security. Nations demonstrate good will toward other nations in a variety of ways: visits and exchanges of gifts or cultural collections and icons.
	Understand that there are different ways for governments to be organized.
	How governments are organized: Democracy—elected; Monarchy—inherited; Dictatorship—appointed; with examples from grade level content/case studies.
Know the nature of conflict and resolution strategies. Identify important ideas in Oregon documents; identify and explain basic functions of the state government to manage conflict. Develop the concept of "consultation" as a tool for peaceful conflict resolution.	Understand the nature of war and conflicts, their resolution, and their affects on society (Example: the American Revolution). Know sources of political conflict that have arisen in the United States historically as well as in the present (geographic and sectional interests, servitude, national origin, role of religion in American public life, role of wars). Apply the concept of "consultation" to present conflicts and propose how to implement it.
	Understand that all economic choices have costs and benefits, and compare options in terms of costs and

Grade 4	Grade 5
	benefits.
Give examples of the kinds of goods and services produced in Oregon in different historical periods. Know what decisions were made and the costs.	Trace the development of technology and the impact of major invention on business productivity during the early development of the United States. Know what decisions were made and the costs. Identify economic factors contributing to the European exploration and colonization in North America, the American Revolution, and the drafting of the Constitution of the United States.
	Identify and give examples of the concepts of "trade-offs" and "opportunity costs."
Know examples from Oregon history that demonstrate an understanding that all decisions involve opportunity costs and that making effective decisions involves considering the costs and the benefits associated with alternative choices. Understand the ways Oregon has allocated and used resources and the consequences of those economic decisions. Recognize that most needs are really wants.	Know examples from United States history that demonstrate an understanding that all decisions involve opportunity costs and that making effective decisions involves considering the costs and the benefits associated with alternative choices. Identify examples of people wanting more than they can have; explain how this re-quires them to make choices; identify examples of choices. Know that the cost of a choice is the value of what is given up. Know that cost is not always monetary. It can be status, an alternate use of time, another job, loss of recess for work time wasted, etc. Options can be analyzed in terms of cost and benefits. Few choices are all-or-nothing decisions; usually they involve getting a little more of one thing by giving up a little of something else.
	Understand how supply and demand influence price, and how price increases or decreases influence the decisions of consumers.
Explain that prices change as a result of changes in determinants of supply and demand for specific products and services.	Predict the effect of changes in supply and demand on price. Analyze how the causes and effects of changes in price of certain goods and services had significant influences on events in United States history (Example: The price of cotton, the price of beaver pelts, the price of gold are all related to specific events and movements in the development of the United States). Know that if a product is scarce, the consumer is likely to pay a greater price to obtain it. If the supply of a product is greater than the demand (surplus), the price is likely to be reduced. Consumers respond predictably to fluctuations in price. Consumers generally respond to higher prices by purchasing less and to lower prices by purchasing more.
Know ways the state government provides goods and services through taxation (for example, education).	Know ways the Federal government provides goods and services through taxation and borrowing (for example, highways, military defense).
	Recognize examples of how nations interact economically.
Identify which countries might produce certain products that the U.S. might not have. Identify things the United States produces that other countries might need or want.	

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	Identify the characteristics of money and the advantages of its use over barter.
List the functions of money (helps people to trade, measures the value of items, facilitates saving) and compare and contrast things that have been used as money in the past. Understand that countries need a common standard to make exchanges of goods. Distinguish between barter and the use of money in exchanging goods.	Know that the oldest form of exchange is barter—the direct trading of goods and services between people. Money is anything widely accepted as final payment. Money makes trading easier by replacing barter with transactions involving currency of checks.
	Understand the processes of earning, saving, spending, budgeting, and record keeping in money management.
	Understand how banks and credit unions serve savers and borrowers.
Understand how to plan savings by not spending too much on wants.	Know that a wage or salary is the price of labor, and is usually determined by the supply and demand for labor. Understand that people's incomes, in part, reflect choices they have made about education, training, skill development and careers. People with skills that are in demand are likely to earn more than people with skills that are in less demand. Understand that there is value to education and training.
	Define basic geography vocabulary such as concepts of location, direction, distance, scale, movement, and region using appropriate words and diagrams.
Use latitude and longitude to locate places in Oregon and other parts of the world. Estimate distances between two places on a map, using a scale of miles, and use cardinal and intermediate directions when referring to relative location. Explain the essential facts of earth/sun relationships and be able to relate these to the climate of Oregon. Identify areas of Oregon settlement, explain past and present settlement patterns, explain the distribution of Oregon cities, past and present, identify geographic factors influencing settlement.	Describe areas of U.S. settlement, describe clusters of settlement, analyze the location of cities and their past and present distribution; explain geographic influences on settlement patterns. Identify legend, cardinal and intermediate directions, scale, grid systems, latitude/longitude, number/letter, principal parallels and meridians (equator, Tropics of Cancer and Capricorn, Arctic and Antarctic Circles, prime meridian).
	Examine and understand how to prepare maps, charts, and other visual representations to locate places and interpret geographic information.
Locate Oregon on a map of the United States; indicate the state capital, major cities, and rivers in Oregon and be able to place these on a blank map of the state. Map the physical regions of Oregon and identify major natural resources, crop regions, and climate regions.	Demonstrate that lines of latitude and longitude are measured in degrees of a circle, that places can be precisely located where these lines intersect, and that location can be stated in terms of degrees north or south of the equator and east or west of the Prime Meridian. Use maps to determine population trends, precipitation, temperature, and ethnic distribution. Use other geographic representations (for example, photographs, satellite-produced images, pictures).
	Locate and identify on maps the continents of the world, the 50 states of the United States, and the major physical features of Oregon.
Name and locate these features of Oregon: the Coast Range, the Cascade Range, Siskiyous, Wallowa and Blue Mountains, Columbia River, Snake River, Willamette River	Name and locate states, major cities, major regions, major rivers and mountain ranges in the United States.

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Deschutes River, Rogue River, Willamette Valley, Columbia River Basin, Great Basin (high desert country).	
	Identify physical and human characteristics of regions in the United States and the processes that have shaped them.
Understands ways the physical environment supports and constrains human activities throughout the world. Describe regions in the Western Hemisphere that resulted from human and physical influences; compare regions with other U.S. and world regions.	Understands ways the physical environment supports and constrains human activities in the United States. Locate and identify New England, the Midwest, Mid-Atlantic, the South, the Great Plains, the Rocky Mountains, the Southwest, the Northwest, Alaska and Hawaii. Identify the kinds of economic activity found in regions of the United States: New England, the Midwest, Mid-Atlantic, the South, the Great Plains, the Rocky Mountains, the Southwest, the Northwest, Alaska and Hawaii.
	Identify patterns of migration and cultural interaction in the United States.
Understand the prehistoric migrations from Asia to North America, migrations from Europe and Africa to colonies in North America, westward migration to Oregon in the 19th century.	Describe the U.S. migration and settlement patterns and explain geographic influences on settlement patterns. Recognize the causes, effects, processes and patterns of human movements, both chosen and forced. Recognize voluntary and involuntary migration factors (e.g., drought, famine, economic opportunity, conflicts, slavery). Understand the migrations from Europe and Africa to colonies in North America, westward migration to Oregon in the 19th century, migrations of people from southeast Asia and Latin America to the United States in the late 20th century.
	Identify and give examples of issues related to population increases and decreases.
Understand that populations fluctuate. Recognize that growing populations provide opportunities and challenges.	Understand changes in population in U.S. History, and the opportunities and challenges the changes created.
	Understand how physical environments are affected by human activities.
	Irrigation to increase crop yields, reforestation to prevent erosion, flood control projects, pollution and depletion of natural resources (for example, garbage and human waste disposal), population and over-consumption.
	Understand how human activities are affected by the physical environment.
Create a map, tracing the routes and methods of travel used by settlers to reach Oregon, and identify ways in which settlers have changed the landscape in Oregon over the past two hundred years. Understand ways human activity has affected the physical environment in various places and times in the United States. Understand ways the physical environment supports and constrains human activities throughout the world.	Understand ways the physical environment gives opportunities and constrains human activities in the United States. Constraints include climate, landforms, and location; floods, wind storms, tornadoes, and earthquakes. Opportunities include solar energy, farming fishing, mining, forests, shipping, and tourism. Read fiction and non-fiction stories about how Native Americans and European settlers lived in early America and find examples of the various ways people adapted to

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	and changed the environment. Give examples of how specific physical features influenced historical events and movements.
	Interpret data and chronological relationships presented in timelines and narratives.
Organize and interpret time lines that show relationships among people, events, and movements in the history of Oregon. Trace the history of a family through the use of primary and secondary sources, including artifacts, photographs, interviews, and documents.	Develop and interpret time lines showing major people, events, and developments in the early history of the United States. Examine an historical narrative about an issue of the time and distinguish between statements of opinion and those that are factually grounded. Use autobiographies, biographies, diaries, journals, historical and fiction.
	Identify cause and effect relationships in a sequence of events.
Summarize causes and effects of European exploration and settlement of Oregon and the Western Hemisphere.	Summarize causes and effects of European exploration and settlement of the United States and the Western Hemisphere.
	Understand how history can be organized using themes, geography, or chronology.
	Identify primary and secondary sources.
Identify different types of primary and secondary sources.	Compare and contrast primary and secondary accounts of selected historical events.
Identify origins of first explorers of Pacific NW and their influence on Oregon.	
	Understand how individuals, issues, and events changed or significantly influenced the course of U.S. history from pre-history through the period of the American Revolution.
Identify and understand the groups living in the Oregon territory before European exploration, their ways of life, and the empires they developed. Understand the impact of early European exploration on Native Americans in Oregon.	Identify and understand the groups living in the Western Hemisphere before European exploration, their ways of life, and the empires they developed. Understand the impact of early European exploration on Native Americans and on the land. Understand the impact of individuals through the period of the American Revolution, on ideas, ways of life or the course of events in U.S. history. Understand the colonial experience and how it led to the American Revolution. Identify and understand the causes, course, and impact of the American Revolution, including the roles of George Washington, Samuel Adams, and Thomas Jefferson. Understand the impact of European exploration on Native American ideas about land use, land ownership and control, health, ways of life. Revolutionary War: Attempts by the British to recoup costs of the Seven Years War (French and Indian War), issue of "no taxation without representation," British prohibition of American settlement west of the Appalachians, Boston Massacre, Boston Tea Party, boycotts; colonial efforts to raise and maintain an army, role of the French, lack of unity among the colonies

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	(Tories vs. Patriots, lack of central government), style of fighting by colonial forces and British army, British blockade, offensive (British) vs. defensive (America) was, factors in American victory and British defeat (guerilla warfare tactics employed by the colonists, support of the French, military leadership of Washington, geographic distance between Britain and colonies); birth of the United States, impact of the principles of the Declaration of Independence; Samuel Adams: organizer of the Sons of Liberty who were strong proponents of independence.
	Understand how individuals changed or significantly influenced the course of Oregon state history.
Identify Native-American groups in Oregon and the Western Hemisphere before European exploration; describe the regions in which they lived; compare their ways of life. Summarize causes and effects of European exploration and settlement of Oregon and the Western Hemisphere; identify the accomplishments of explorers, missionaries, and others. Describe social, political, and economic changes in Oregon, past and present. Identify factors causes changes in 21st-century Oregon. Identify and compare the major early cultures that existed in the region that became Oregon prior to contact with Europeans. Identify and describe historic Indian groups that lived in the region that became Oregon at the time of early European exploration and settlement in the 17th century. Explain the significance of key documents in Oregon's development from a United States territory to statehood. Explain how key individuals and events influenced the early growth of the new state of Oregon. Identify the early land and sea routes to, and European settlements in, Oregon with a focus on the exploration of the North Pacific, noting the importance of mountains, deserts, ocean currents, and wind patterns. Explain the economic, social, and political life in Oregon from the establishment of the territory through the granting of statehood. Explain how Oregon became an agricultural and industrial power, tracing the transformation of the economy, and political and cultural development.	Identify significant connections between Oregon and the period of history studied.
	Understand how individuals changed or significantly influenced the course of local history.
Identify the role of the local community in the history of Oregon.	Make appropriate connections between the local community and events in the period of history studied.
	Examine an event, issue, or problem through inquiry and research.
Use questions to guide and focus research. Use questions to separate main ideas of a topic.	Formulate questions to guide and focus research. Introduce Bloom's Taxonomy.
	Gather, use, and document information from multiple sources (e.g., print, electronic, human, primary,

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	secondary).
	Identify and study two or more points of view of an event, issue, or problem.
Examine a topic from underlying factors, contributing factors, possible solutions, and points of view.	Identify events from different historical perspectives.
	Identify characteristics of an event, issue, or problem, suggesting possible causes and results.
Identify relevant historical antecedents. Determine cause and effect relationships.	Make connections between past and present. Practice determining cause and effect relationships.
	Identify a response or solution and support why it makes sense, using support from research.
Examine proposals for resolving a problem, comparing the possible consequences of two or more courses of action.	Analyze the effects of two or more courses of action, and reach a decision about the best solution.

Physical Education

In grades 4 to 5 the school will still focus on Oregon State Physical Education Bench mark goals in the category of life time fitness. Those goals are listed below:

- Develop personal activity goals and describe benefits that result from regular participation in physical education.
- Analyze and categorize physical activities according to potential fitness benefits.
- Correctly interpret results of physical fitness assessments and use them to develop a written fitness program.
- Identify the principles of fitness training using the FITT (Frequency, Intensity, Time and Type) model.