

CHEMICALS, THE ENVIRONMENT, AND YOU: EXPLORATIONS IN SCIENCE AND HUMAN HEALTH

Oregon Science Content Standards: Grade 8

Lesson	CCG	Descriptor
1	SC.08.PS.01.02	Recognize that substances may be grouped by their physical properties.
4, 5	SC.08.LS.03.02	Identify traits inherited through genes and those resulting from interactions with the environment.
1, 2, 4, 6	SC.08.SI.01	Based on observations and scientific concepts, ask questions or form hypotheses that can be explored through scientific investigations.
2, 4, 6	SC.08.SI.02	Design a scientific investigation to answer questions or test hypotheses.
2, 3, 4, 6	SC.08.SI.03	Collect, organize, and display sufficient data to support analysis.
2, 3, 4, 6	SC.08.SI.04	Summarize and analyze data including possible sources of error. Explain results and offer reasonable and accurate interpretations and implications.
3	Unifying Concepts and Processes	Understand that any collection of things that have an influence on one another can be thought of as a system.
2, 3, 4	Unifying Concepts and Processes	Understand that a model is a tentative scheme or structure with explanatory power.
3, 4	Unifying Concepts and Processes	Understand that both patterns of change and stability are important in the natural world.
All lessons	History and Nature of Science	Understand that science is a human endeavor practiced by individuals from many different cultures.
2, 3, 4, 5	History and Nature of Science	Understand that scientific knowledge is subject to change based on new findings and results of scientific observation and experimentation.
2, 3, 4, 5	History and Nature of Science	Understand that scientific knowledge distinguishes itself through the use of empirical standards, logical arguments and skepticism.
1, 4, 5, 6	Science in Personal and Social Perspectives	Describe the role of science and technology in local, national and global issues.
2, 4, 5, 6	Science in Personal and Social Perspectives	Explain risks and benefits in personal and community health from a science perspective.

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2, 3, 5, 6	Science and Technology	Understand the relationship that exists between science and technology.
Oregon Mathematics Content Standards: Grades 6 – 8		
Grade 6		
Lesson	CCG	Descriptor
2, 4	MA.06.CE.01	Order, model, and compare positive rational numbers (fractions, decimals, and percentages).
2, 4	MA.06.CE.07	Apply equivalent forms of fractions and decimals to solve problems.
2, 4	MA.06.CE.15	Solve problems involving common percentages.
2, 4	MA.06.CE.16	Convert mentally among common decimals, fractions and percentages.
2, 4	MA.06.CE.20	Use the inverse operations of addition and subtraction to solve problems and check solutions involving adding and subtracting fractions and mixed numbers.
2, 4	MA.06.CE.21	Apply the associative, commutative, and distributive properties to simplify computations with positive rational numbers.
3, 4	MA.06.AR.01	Represent, analyze, and determine rules for finding patterns involving positive rational numbers with tables, graphs, words, and when possible, symbolic rules.
3, 4	MA.06.AR.06	Model and solve contextualized problems using various representations such as graphs, tables, and equations.
2, 3, 4	MA.06.AR.09	Investigate how a change in one variable relates to a change in a second variable.
2, 4	MA.06.PS.01	Interpret the concepts of a problem-solving task and translate them into mathematics.
2, 4	MA.06.PS.02	Choose strategies that can work and then carry out the strategies chosen.
2, 4	MA.06.PS.04	Use pictures, symbols, and/or vocabulary to convey the path to the identified solution.
2, 4	MA.06.PS.05	Accurately solve problems using mathematics.
Grade 7		
Lesson	CCG	Descriptor
2, 4	MA.07.CE.03	Use rates, ratios, and percents to solve problems.
2, 4	MA.07.CE.09	Multiply and divide fractions and mixed numbers.
2, 4	MA.07.CE.11	Solve problems involving percentages (including percent increase and decrease, interest rates, tax, discount, tips, and part/whole relationships).
2, 4	MA.07.CE.16	Use inverse operations (addition and subtraction, multiplication and division) to solve problems and check solutions involving calculations with integers.
2, 4	MA.07.CE.17	Apply the associative, commutative, and distributive properties to simplify computations with rational numbers (with an emphasis on integers).

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4	MA.07.SP.06	Formulate questions and design experiments or surveys to collect relevant data.
2, 3	MA.07.SP.09	Represent and interpret data using frequency distribution tables, box-and whisker-plots, stem-and-leaf plots, and single- and multiple-line graphs.
2, 3, 4	MA.07.SP.14	Use observations about differences between two or more samples to make conjectures about the populations from which the samples were taken.
2, 3, 4	MA.07.AR.01	Represent, analyze, and determine rules for finding patterns involving integers with tables, graphs, words, and when possible, symbolic rules.
2, 3, 4	MA.07.AR.07	Recognize and represent direct variation using tables, graphs, and equations.
3	MA.07.AR.08	Identify and sketch a graph that models a given situation.
2, 3, 4	MA.07.AR.09	Identify and describe how a change in one variable relates to a change in a second variable.
2	MA.07.ME.01	Select the most appropriate unit to measure surface area and volume.
2, 4	MA.07.PS.01	Interpret the concepts of a problem-solving task and translate them into mathematics.
2, 4	MA.07.PS.02	Choose strategies that can work and then carry out the strategies chosen.
2, 4	MA.07.PS.04	Use pictures, symbols, and/or vocabulary to convey the path to the identified solution.
2, 4	MA.07.PS.05	Accurately solve problems using mathematics.
Grade 8		
Lesson	CCG	Descriptor
4	MA.08.CE.01	Apply proportions to solve problems.
2, 4	MA.08.CE.04	Apply equivalent forms of rational numbers (including percents) to solve problems.
2, 4	MA.08.CE.11	Apply the associative, commutative, and distributive properties to simplify computations with rational numbers.
2, 3, 4	MA.08.SP.05	Collect and display data as lists, tables, and plots using appropriate technology (e.g., graphing calculators, computer software).
2, 3, 4	MA.08.SP.07	Estimate or predict the occurrence of future events using data.
2, 3, 4	MA.08.AR.01	Represent, analyze and determine rules for finding patterns relating to linear functions, nonlinear functions, and arithmetic sequences with tables, graphs, and symbolic rules.
3, 4	MA.08.AR.16	Determine when data represented in a table or graph represents a linear or nonlinear relationship.
3, 4	MA.08.AR.19	Analyze the nature of change in quantities in linear relationships represented by graphs, tables, or formulas.
4	MA.08.ME.02	Carry out unit conversions between the metric and U.S. customary systems of measurement given conversion ratios (e.g., 1 in = 2.54 cm).
2, 4	MA.08.PS.01	Interpret the concepts of a problem-solving task and translate them into mathematics.
2, 4	MA.08.PS.02	Choose strategies that can work and then carry out the strategies chosen.
2, 4	MA.08.PS.03	Use pictures, symbols, and/or vocabulary to convey the path to the identified solution.
2, 4	MA.08.PS.04	Accurately solve problems using mathematics.

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Oregon English/Language Arts Content Standards: Grades 6 – 8		
Lesson	CCG	Descriptor
1, 2, 4, 5, 6	EL.06.RE.03 EL.07.RE.02 EL.08.RE.02	Listen to, read, and understand a wide variety of informational and narrative text, including classic and contemporary literature, poetry, magazines, newspapers, reference materials, and online information.
1, 2, 4, 5, 6	EL.06.RE.04 EL.07.RE.03 EL.08.RE.03	Make connections to text, within text, and among texts across the subject areas.
1, 2, 4, 5, 6	EL.06.RE.05 EL.07.RE.04 EL.08.RE.04	Demonstrate listening comprehension of more complex text through class and/or small group interpretive discussions across the subject areas.
1, 2, 4, 5, 6	EL.06.RE.06 EL.07.RE.05 EL.08.RE.05	Match reading to purpose—location of information, full comprehension, and personal enjoyment.
1, 2, 4, 5, 6	EL.06.RE.07 EL.07.RE.06 EL.08.RE.06	Understand and draw upon a variety of comprehension strategies as needed—re-reading, self-correcting, summarizing, class and group discussions, generating and responding to essential questions, making predictions, and comparing information from several sources.
1, 2, 4, 5, 6	EL.06.RE.08 EL.07.RE.07 EL.08.RE.07	Clearly identify specific words or wordings that are causing comprehension difficulties and use strategies to correct.
1, 2, 4, 5, 6	EL.06.RE.09 EL.07.RE.08 EL.08.RE.08	Understand, learn, and use new vocabulary that is introduced and taught directly through informational text, literary text, and instruction across the subject areas.
1, 2, 4, 5, 6	EL.06.RE.10 EL.07.RE.09 EL.08.RE.09	Develop vocabulary by listening to and discussing both familiar and conceptually challenging selections read aloud across the subject areas.
1, 2, 4, 5, 6	EL.07.RE.10 EL.08.RE.10	Determine the meanings of words using contextual and structural clues.
1, 2, 4, 5, 6	EL.06.RE.11	Determine the meaning of unknown words or words with unusual meanings in informational and narrative text by using word, sentence, and paragraph clues.
1, 2, 4, 5, 6	EL.06.RE.15 EL.07.RE.14 EL.08.RE.14	Read textbooks, biographical sketches, letters, diaries, directions, procedures, magazines, essays, primary source historical documents, editorials, news stories, periodicals, bus routes, and catalogs.
1, 2, 4, 5, 6	EL.06.RE.16 EL.07.RE.15	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.

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1, 2, 4, 5, 6	EL.08.RE.15	Synthesize information found in various parts of charts, tables, diagrams, glossaries, or related grade-level text to reach supported conclusions.
1, 2, 4, 5, 6	EL.06.RE.19 EL.07.RE.18 EL.08.RE.17	Identify and/or summarize sequence of events, main ideas, facts, supporting details, and opinions in informational and practical selections.
1, 2, 4, 5, 6	EL.06.RE.20 EL.07.RE.19 EL.08.RE.18	Clarify understanding of informational texts by creating simple (6 & 7) or detailed (8) outlines, graphic organizers, diagrams, logical notes, or summaries.
1, 2, 4, 5, 6	EL.06.RE.23 EL.07.RE.23 EL.08.RE.21	Infer the main idea when it is not explicitly stated, and support with evidence from the text.
1, 2, 4, 5, 6	EL.06.RE.25 EL.07.RE.25	Distinguish among facts, supported inferences, and opinions in text. (6) Differentiate between conclusions that are based on fact and those that are based on opinion. (7)
1, 2, 4, 5, 6	EL.06.RE.26	Connect and clarify main ideas by identifying their relationships to multiple sources, known information and ideas, and related topics.
1, 2, 4, 5, 6	EL.06.WR.10 EL.07.WR.10 EL.08.WR.10	Write for different purposes and to a specific audience or person, adjusting tone and style as necessary (6) to engage the interest of the reader (7). Create compositions that engage the reader, have a clear message, a coherent thesis, and end with a clear and well-supported conclusion. (8)
4, 6	EL.06.WR.11	Write multi-paragraph compositions that: Engage the interest of the reader, state a clear purpose, use common organizational structures for providing information in writing, such as chronological order, cause-and-effect, similarity and difference, and posing and answering a question, develop the topic with supporting details and precise language, provide transitions to link paragraphs, and conclude with a detailed summary linked to the purpose of the composition.
4, 6	EL.07.WR.11	Write multi-paragraph compositions-descriptions, explanations, comparison-and-contrast papers, problem and solution essays that: state the thesis or purpose, explain the situation, organize the composition clearly, following an organizational pattern appropriate to the type of composition-comparison and contrast; organization by categories; and arrangement by spatial order, order of importance, or climactic order, and provide evidence to support arguments and conclusions.
1, 2, 4, 5, 6	EL.06.WR.17 EL.07.WR.17 EL.08.WR.17	Spell correctly frequently misspelled words (their, they're, there / loose, lose, loss / choose, chose / through, threw / it's, its). (6) Spell correctly derivatives (words that come from a common base or root word) by applying the spellings of bases and affixes (prefixes and suffixes) (7) Use correct spelling conventions. (8)
1, 2, 4, 5, 6	EL.06.WR.22 EL.07.WR.25 EL.08.WR.23	Write legibly.
1, 2, 4, 5, 6	EL.06.WR.27 EL.07.WR.30	Write summaries: using formal paragraph structure, that contain the main ideas and most significant details using the student's own words, except for quotations (6); include the main ideas and most significant details, use the student's own words, except for quotations, and reflect underlying meaning, not just the superficial details (7).
All lessons	EL.06.SL.01	Develop a focus and point of view (6) to achieve particular purposes and to appeal to the background and interests

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	EL.07.SL.01	of the audience.
All lessons	EL.08.SL.01	Develop a focus and present information to achieve particular purposes by matching the message, vocabulary, voice modulation, expression, and tone to the audience and purpose.
All lessons	EL.06.SL.02	Match the purpose, message, occasion, and delivery to the audience.
All lessons	EL.06.SL.03 EL.07.SL.02	Organize information: using supporting details, reasons, descriptions, and examples (6); arranging details, reasons, descriptions, and examples effectively and persuasively in relation to the audience (7).
All lessons	EL.03.SL.03	Use credible and relevant information to convey message.
All lessons	EL.06.SL.07 EL.07.SL.05 EL.08.SL.06	Use correct grammar consistently. (6 & 7) Use appropriate grammar. (8)
All lessons	EL.07.SL.07	Ask questions to obtain information, including evidence to support the speaker's claims and conclusions.
All lessons	EL.06.SL.11	Restate and execute multiple-step oral directions and instructions.
Oregon Health Education Content Standards: Grade 8		
Lesson	CCG	Descriptor
1, 3, 4, 5, 6	HE.08.HS.03	Analyze influences on health and well-being (e.g., culture, family, media, technology, peers, body image, emotions, and physical and social environments).
4	HE.08.HS.07	Advocate to self, peers, family and community members, the benefits of health and safety enhancing practices.