

UNDERSTANDING ALCOHOL: INVESTIGATIONS INTO BIOLOGY AND BEHAVIOR		
New Hampshire Science GSEs: Grades 6 & 8		
Grade 6		
Lesson	Standard	GSE
3, 4, 5	S:SPS1:6:1.1	Make observations and record measurements using a variety of tools and instruments.
3, 4	S:SPS1:6:1.2	Plan observations based on a given purpose.
1, 3, 4, 5	S:SPS1:6:1.3	Identify and investigate similarities and differences among observations and sets of observations.
1, 3, 4, 5	S:SPS1:6:1.8	Ask questions about relationships between and among observations.
1, 3, 5	S:SPS1:6:1.9	Determine which observations will be helpful to a given investigation.
1, 3, 4, 5, 6	S:SPS1:6:1.10	Distinguish between those questions that can be answered by science and those that cannot.
3, 5	S:SPS1:6:2.1	Design and record a simple step-by-step procedure to follow in order to carry out a fair test of a scientific question.
3, 4, 5	S:SPS1:6:2.2	Identify and utilize appropriate tools/technology for collecting data in designing investigations.
3, 4, 5	S:SPS1:6:3.1	Carry out simple student or teacher-developed procedures or experiments.
3, 4, 5	S:SPS1:6:3.2	Use appropriate tools to collect and record data.
3, 4, 5	S:SPS1:6:3.3	Follow the teacher's instructions in performing experiments, following all appropriate safety rules and procedures.
3, 4, 5	S:SPS1:6:4.1	Use appropriate tools to organize, represent, analyze and explain data.
3, 4, 5	S:SPS1:6:4.2	Make and record observations using a pre-determined format.
3, 4, 5	S:SPS1:6:4.3	Compare and display data in a variety of student or computer generated formats (such as diagrams, flow charts, tables, bar graphs, line graphs, scatter plots, and histograms).
3, 4, 5, 6	S:SPS1:6:4.4	Identify patterns and relationships in data and formulate basic explanations.
3, 4, 5, 6	S:SPS1:6:4.5	Draw appropriate conclusions based on data collected.
3, 4, 5	S:SPS1:6:5.1	Determine if the results of an experiment support or fail to support the scientific idea tested.
3, 4, 5	S:SPS1:6:5.2	Explain how a hypothesis is a direct extension of a scientific idea and therefore makes that idea "testable."
3, 4, 5	S:SPS2:6:1.2	Describe how results of similar and repeated investigations may vary and suggest possible explanations for variations.
3, 4, 5	S:SPS2:6:1.3	Explain that sometimes similar investigations get different results because of unexpected differences in the things being investigated, the methods used, or the circumstances in which the investigation is carried out, and sometimes just because of uncertainties of observations.
3, 5	S:SPS2:6:1.4	Realize that if more than one variable changes at the same time in an experiment, the outcome of the experiment may not be clearly attributable to any one of the variables.

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2, 5	S:SPS2:6:2.1	Recognize that thinking about things as systems means looking for how every part relates to others.
2, 5	S:SPS2:6:2.3	Estimate or predict the effect that making a change in one part of the system will have on other parts, and on the system as a whole.
3, 4	S:SPS2:6:3.1	Understand that models are often used to think about processes that happen too slowly, too quickly, or on too small a scale to observe directly; or that are too vast to be changed deliberately; or that are potentially dangerous.
3, 4, 5	S:SPS2:6:4.1	Understand that things change in steady, repetitive, or irregular ways, or sometimes in more than one way at the same time; often the best way to tell which kinds of change are happening is to make a table or graph of measurements.
2, 3, 4, 5, 6	S:SPS3:6:1.1	Work effectively within a cooperative group setting, accepting and executing assigned roles and responsibilities.
2, 3, 4, 5, 6	S:SPS3:6:1.2	Work collectively within a group toward a common goal.
All lessons	S:SPS3:6:1.3	Demonstrate respect of one another's abilities and contributions to the group.
2, 5	S:LS1:6:2.5	Explain that multicellular organisms have specialized cells, tissues, organs and organ systems that perform certain necessary functions, including digestion, respiration, reproduction, circulation, excretion, movement, control and coordination and protection from disease.
3, 4	S:LS3:6:3.1	Recognize that there are genetic variations among individuals in groups of organisms and provide examples of how these variations affect the survival of an organism.
All lessons	S:LS4:6:1.1	Recognize that learning requires more than just storage and retrieval of information and that prior knowledge needs to be tapped in order to make sense out of new experiences or information.
All lessons	S:LS4:6:1.2	Explain that people can learn about others from direct experience, from the media, and from listening to others talk about their life and work.
4	S:LS4:6:3.1	Recognize that the length and quality of human life are influenced by many factors, including sanitation, diet, medical care, gender, genes, environmental conditions, and personal health behaviors.
3, 5	S:LS5:6:2.1	Demonstrate the appropriate use of tools, such as thermometers, probes, microscopes and computers to gather, analyze and interpret data in the life sciences.
1	S:LS5:6:4.1	Understand that some form of science is used in most jobs/careers and that some jobs/careers specifically require knowledge of life science.

Grade 8

Lesson	Standard	GSE
3, 4, 5	S:SPS1:8:1.1	Use appropriate tools to accurately collect and record both qualitative and quantitative data gathered through observations (e.g., temperature probes, electronic balances, spring scales, microscopes, stop watches).
1, 3, 4, 5	S:SPS1:8:1.3	Investigate similarities and differences noted when making observations.
3, 4, 5	S:SPS1:8:1.6	Rephrase questions so that they can be tested or investigated using scientific methodologies.
1, 3, 4, 5	S:SPS1:8:1.7	Ask questions about relationships between and among observable variables.

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3, 5	S:SPS1:8:2.1	Identify the manipulated, responding and controlled variables in an experiment.
3, 4, 5	S:SPS1:8:3.1	Use appropriate laboratory techniques to carry out student- or teacher-developed procedures or experiments.
3, 4, 5	S:SPS1:8:3.3	Follow the teacher's instructions in performing experiments, following all appropriate safety rules and procedures.
3, 4, 5	S:SPS1:8:4.1	Use appropriate tools (including computer hardware and software) to collect, organize, represent, analyze and explain data.
3	S:SPS1:8:4.2	Identify sources of error in experiments.
1, 3, 4, 5	S:SPS1:8:4.3	Draw appropriate conclusions regarding the scientific question under investigation, based on the data collected.
3, 4, 5	S:SPS1:8:5.1	Determine if the results of an experiment support or refute the scientific idea tested.
1, 3, 4, 5	S:SPS1:8:5.2	Evaluate whether the information and data collected allows an evaluation of the scientific idea under investigation.
1, 3, 4, 5	S:SPS1:8:5.3	Determine what additional information would be helpful in answering the scientific question.
1, 3, 4, 5	S:SPS2:8:1.1	Describe how scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning, and the application of imagination in devising hypotheses and explanations to make sense of the collected evidence.
3, 5	S:SPS2:8:1.2	Realize that when similar investigations give different results, the scientific challenge is to judge whether the differences are trivial or significant, and this often requires more investigations.
3, 6	S:SPS2:8:1.3	Realize that knowledge, based on science, is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way.
3, 5	S:SPS2:8:1.4	Provide examples that show how some scientific knowledge is very old and yet is still applicable today.
6	S:SPS2:8:1.6	Give examples of how science can sometimes be used to inform ethical decisions by identifying the likely consequences of particular actions but cannot be used to establish that some action is either moral or immoral.
2, 5	S:SPS2:8:2.1	Understand that any system is usually connected to other systems, both internally and externally; thus a system may be thought of as containing subsystems and as being a subsystem of a larger system.
2, 5	S:SPS2:8:2.2	Analyze how the output of one part of a system, which can include materials, energy or information, can become the input to other parts.
3, 4	S:SPS2:8:3.2	Know that different models can be used to represent the same thing; what kind of model is used and how complex it should be depends on its purpose; and the usefulness of a model is one of the instances in which intuition and creativity come into play in science, mathematics and engineering.
3, 5	S:SPS2:8:4.1	Analyze how physical and biological systems tend to change until they become stable and then stay that way unless their surroundings change.
5	S:SPS2:8:4.2	Recognize how many systems contain feedback mechanisms that serve to keep changes within specified limits.
5	S:SPS2:8:4.3	Realize that symbolic equations can be used to summarize how the quantity of something changes over time or in response to other changes.
2, 3, 4, 5, 6	S:SPS3:8:1.1	Work effectively within a cooperative group setting, accepting and executing assigned roles and responsibilities.
2, 3, 4, 5, 6	S:SPS3:8:1.2	Work collectively within a group toward a common goal.
All lessons	S:SPS3:8:1.3	Demonstrate respect of one another's abilities and contributions to the group.

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1, 3	S:SPS3:8:1.4	Demonstrate an understanding of the ethics involved in scientific inquiry.
3, 4	S:SPS3:8:2.2	Judge the weaknesses and strengths of the information they are using.
3, 4	S:SPS3:8:2.3	Explore the uses and limitations of models.
3, 4, 5, 6	S:SPS4:8:1.1	Use a variety of information access tools to locate, gather, and organize potential sources of scientific information to answer questions.
3, 5	S:SPS4:8:1.2	Collect real-time observations and data, synthesizing and building upon existing information (e.g., online databases, NOAA, EPA, USGS) to solve problems.
3, 4, 5	S:SPS4:8:1.3	Use appropriate tools to analyze and synthesize information (e.g., diagrams, flow charts, frequency tables, bar graphs, line graphs, stem-and-leaf plots) to draw conclusions and implications based on investigations of an issue or question.
3, 5	S:SPS4:8:3.1	Execute steps of scientific inquiry to engage in the problem-solving and decision making processes.
3, 5	S:SPS4:8:3.2	Apply new and unusual applications of existing knowledge to new and different situations.
3, 5	S:SPS4:8:3.3	Make sketches, graphs, and diagrams to explain ideas and to demonstrate the interconnections between systems.
1, 3, 4, 5	S:SPS4:8:4.2	Use evidence collected from observations or other sources and use them to create models and explanations.
3, 4, 5	S:SPS4:8:5.1	Use a variety of media tools to make oral and written presentations, which include written notes and descriptions, drawings, photos, and charts to communicate the procedures and results of an investigation.
3, 4, 5, 6	S:SPS4:8:6.1	Work in diverse pairs/teams to answer questions, solve problems and make decisions.
All lessons	S:SPS4:8:6.3	Articulate understanding of content through personal interaction and sharing with peers.
3, 4, 5, 6	S:SPS4:8:8.1	Develop and execute a plan to collect and record accurate and complete data from various sources to solve a problem or answer a question; and gather and critically analyze data from a variety of sources.
5	S:LS1:8:2.1	Identify the functions of the human body's systems, including digestion, respiration, reproduction, circulation, excretion, movement, control and coordination and protection from disease; and describe how they interact with one another.
3, 4	S:LS3:8:3.1	Recognize that hereditary information is contained in genes, which are located in the chromosomes of each cell; and explain that inherited traits can be determined by either one or many genes, and that a single gene can influence more than one trait, such as eye and hair color.
1, 3	S:LS4:8:1.1	Recognize that unlike human beings, behavior in insects and many other species is determined almost entirely by biological inheritance.
1, 3	S:LS4:8:1.2	Explain that organism's behavioral response is a reaction to internal or and environmental stimuli, and that these responses may be determined by heredity or from past experience.
1, 3	S:LS4:8:1.3	Explain how all behavior is affected by both inheritance and experience.
3, 4	S:LS4:8:2.1	Recognize that disease in organisms can be caused by intrinsic failures of the system or infection from other organisms.
1, 3, 4	S:LS4:8:3.2	Recognize that an organism can be described in terms of a combination of traits; and differentiate between inherited traits and those that result from interactions with the environment.

1	S:LS5:8:4.1	Understand that some scientific jobs/careers involve the application of life science content knowledge and experience in specific ways that meet the goals of the job.
New Hampshire Mathematics GSEs: Grades 6 – 8		
Grade 6		
Lesson	Standard	GSE
2, 3, 4	M:N&O:6:3	Demonstrates conceptual understanding of mathematical operations by adding and subtracting positive fractions and integers; and multiplying and dividing fractions and decimals.
2	M:N&O:6:4	Accurately solves problems involving single or multiple operations on fractions (proper, improper, and mixed), or decimals; and addition or subtraction of integers; percent of a whole; or problems involving greatest common factor or least common multiple.
2, 3, 4, 5, 6	M:N&O:6:6	Uses a variety of mental computation strategies to solve problems (e.g., using compatible numbers, applying properties of operations, using mental imagery, using patterns) and to determine the reasonableness of answers
3	M:N&O:6:7	Makes estimates in a given situation by identifying when estimation is appropriate, selecting the appropriate method of estimation, determining the level of accuracy needed given the situation, analyzing the effect of the estimation method on the accuracy of results, and evaluating the reasonableness of solutions appropriate to grade level GLEs across content strands.
2, 3, 4	M:N&O:6:8	Applies properties of numbers (odd, even, positive, negative, remainders, divisibility, and prime factorization) and field properties (commutative, associative, identity [including the multiplicative property of one, e.g., $1 = 2/2$ and $2/2 \times 3/4 = 6/8$, so $3/4 = 6/8$], distributive, and additive inverses) to solve problems and to simplify computations.
2	M:G&M:6:7	Measures and uses units of measures appropriately and consistently, and makes conversions within systems when solving problems across the content strands.
2, 3, 4, 5	M:F&A:6:1	Identifies and extends to specific cases a variety of patterns (linear and nonlinear) represented in models, tables, sequences, graphs, or in problem situations
3, 4, 5, 6	M:DSP:6:1	Interprets a given representation (circle graphs, line graphs, or stem-and-leaf plots) to answer questions related to the data, to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.
3, 4, 5	M:DSP:6:3	Organizes and displays data using tables, line graphs, or stem-and-leaf plots to answer questions related to the data, to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.
3, 4, 5	M:DSP:6:6	In response to a teacher or student generated question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested, and when appropriate makes predictions; and asks new questions and makes connections to real world situations.
2, 3, 4, 5	M:PRP:8:1	Students will use problem-solving strategies to investigate and understand increasingly complex mathematical content and be able to: <ul style="list-style-type: none"> ▪ Use problem-solving strategies appropriately and effectively for a given situation.

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		<ul style="list-style-type: none"> ▪ Determine, collect and organize the relevant information needed to solve real-world problems. ▪ Apply integrated problem-solving strategies to solve problems in the physical, natural, and social sciences and in pure mathematics. ▪ Use technology when appropriate to solve problems. ▪ Reflect on solutions and the problem-solving process for a given situation and refine strategies as needed.
2, 3, 4, 5, 6	M:PRP:8:2	<p>Students will use mathematical reasoning and proof and be able to:</p> <ul style="list-style-type: none"> ▪ Draw logical conclusions and make generalizations using deductive and inductive reasoning. ▪ Formulate, test, and justify mathematical conjectures and arguments. ▪ Construct and determine the validity of a mathematical argument or a solution. ▪ Apply mathematical reasoning skills in other disciplines.
2, 3, 4, 5, 6	M:CCR:8:1	<p>Students will communicate their understanding of mathematics and be able to:</p> <ul style="list-style-type: none"> ▪ Articulate ideas clearly and logically in both written and oral form. ▪ Present, share, explain, and justify thinking with others and build upon the ideas of others to solve problems. ▪ Use mathematical symbols and notation. ▪ Formulate questions, conjectures, definitions, and generalizations about data, information, and problem situations.
2, 3, 4, 5, 6	M:CCR:8:2	<p>Students will create and use representations to communicate mathematical ideas and to solve problems and be able to:</p> <ul style="list-style-type: none"> ▪ Use models and technology to develop equivalent representations of the same mathematical concept. ▪ Use and create representations to solve problems and organize their thoughts and ideas. ▪ Convert between representations (e.g., a table of values, an equation, and a graph may all be representations of the same function).
Grade 7		
Lesson	Standard	GSE
2, 4, 5, 6	M:N&O:7:1	Demonstrates conceptual understanding of rational numbers with respect to percents as a means of comparing the same or different parts of the whole when the wholes vary in magnitude (e.g., 8 girls in a classroom of 16 students compared to 8 girls in a classroom of 20 students, or 20% of 400 compared to 50% of 100); and percents as a way of expressing multiples of a number (e.g., 200% of 50) using models, explanations, or other representations.
2, 3, 4, 5, 6	M:N&O:7:3	Demonstrates conceptual understanding of operations with integers and whole number exponents (where the base is a whole number) using models, diagrams, or explanations.
2, 3, 4, 5	M:N&O:7:4	Accurately solves problems involving the addition or subtraction of integers
2, 5, 6	M:N&O:7:5	Accurately solves problems involving proportional reasoning; percents involving discounts, tax, or tips; and rates.
2, 3, 4, 5, 6	M:N&O:7:6	Uses a variety of mental computation strategies to solve problems (e.g., using compatible numbers, applying properties of operations, using mental imagery, using patterns) and to determine the reasonableness of answers
3	M:N&O:7:7	Makes estimates in a given situation (including tips, discounts, and tax) by identifying when estimation is appropriate, selecting the appropriate method of estimation, determining the level of accuracy needed given the situation, analyzing the effect of the estimation method on the accuracy of results, and evaluating the reasonableness of

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		solutions appropriate to grade level GLEs across content strands.
2, 3, 4	M:N&O:7:8	Applies properties of numbers (odd, even, positive, negative, remainders, divisibility, and prime factorization) and field properties (commutative, associative, identity, distributive, inverses) to solve problems and to simplify computations, and demonstrates conceptual understanding of field properties as they apply to subsets of the real numbers (e.g., the set of whole numbers does not have additive inverses, the set of integers does not have multiplicative inverses).
2, 3, 4, 5	M:F&A:7:1	Identifies and extends to specific cases a variety of patterns (linear and nonlinear) represented in models, tables, sequences, graphs, or in problem situations
3, 4, 5, 6	M:DSP:7:1	Interprets a given representation (circle graphs, scatter plots that represent discrete linear relationships, or histograms) to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.
3, 4, 5	M:DSP:7:3	Organizes and displays data using tables, line graphs, scatter plots, and circle graphs to answer questions related to the data, to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.
3, 4, 5	M:DSP:7:6	In response to a teacher or student generated question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested while considering the limitations that could affect interpretations; and when appropriate makes predictions; and asks new questions and makes connections to real world situations.
2, 3, 4, 5	M:PRP:8:1	Students will use problem-solving strategies to investigate and understand increasingly complex mathematical content and be able to: <ul style="list-style-type: none"> ▪ Use problem-solving strategies appropriately and effectively for a given situation. ▪ Determine, collect and organize the relevant information needed to solve real-world problems. ▪ Apply integrated problem-solving strategies to solve problems in the physical, natural, and social sciences and in pure mathematics. ▪ Use technology when appropriate to solve problems. ▪ Reflect on solutions and the problem-solving process for a given situation and refine strategies as needed.
2, 3, 4, 5, 6	M:PRP:8:2	Students will use mathematical reasoning and proof and be able to: <ul style="list-style-type: none"> ▪ Draw logical conclusions and make generalizations using deductive and inductive reasoning. ▪ Formulate, test, and justify mathematical conjectures and arguments. ▪ Construct and determine the validity of a mathematical argument or a solution. ▪ Apply mathematical reasoning skills in other disciplines.
2, 3, 4, 5, 6	M:CCR:8:1	Students will communicate their understanding of mathematics and be able to: <ul style="list-style-type: none"> ▪ Articulate ideas clearly and logically in both written and oral form. ▪ Present, share, explain, and justify thinking with others and build upon the ideas of others to solve problems. ▪ Use mathematical symbols and notation. ▪ Formulate questions, conjectures, definitions, and generalizations about data, information, and problem situations.
2, 3, 4, 5, 6	M:CCR:8:2	Students will create and use representations to communicate mathematical ideas and to solve problems and be able to: <ul style="list-style-type: none"> ▪ Use models and technology to develop equivalent representations of the same mathematical concept.

		<ul style="list-style-type: none"> ▪ Use and create representations to solve problems and organize their thoughts and ideas. ▪ Convert between representations (e.g., a table of values, an equation, and a graph may all be representations of the same function).
Grade 8		
Lesson	Standard	GSE
5	M:N&O:8:1	Demonstrates conceptual understanding of rational numbers with respect to absolute values, perfect square and cube roots, and percents as a way of describing change (percent increase and decrease) using explanations, models, or other representations.
2, 4, 5	M:N&O:8:4	Accurately solves problems involving proportional reasoning (percent increase or decrease, interest rates, markups, or rates); multiplication or division of integers.
2, 3, 4, 5, 6	M:N&O:8:6	Uses a variety of mental computation strategies to solve problems (e.g., using compatible numbers, applying properties of operations, using mental imagery, using patterns) and to determine the reasonableness of answers
3	M:N&O:8:7	Makes estimates in a given situation (including tips, discounts, tax, and the value of a non-perfect square root as between two whole numbers) by identifying when estimation is appropriate, selecting the appropriate method of estimation; determining the level of accuracy needed given the situation; analyzing the effect of the estimation method on the accuracy of results; and evaluating the reasonableness of solutions appropriate to grade level GLEs across content strands.
2, 3, 4	M:N&O:8:8	Applies properties of numbers (odd, even, positive, negative, remainders, divisibility, and prime factorization) and field properties (commutative, associative, identity [including the multiplicative property of one, e.g., $20 \times 23 = 20+3 = 23$, so $20 = 1$], distributive, inverses) to solve problems and to simplify computations, and demonstrates conceptual understanding of field properties as they apply to subsets of real numbers when addition and multiplication are not defined in the traditional ways.
2, 3, 4, 5	M:F&A:8:1	Identifies and extends to specific cases a variety of patterns (linear and nonlinear) represented in models, tables, sequences, graphs, or in problem situations.
3, 4, 5, 6	M:DSP:8:1	Interprets a given representation (line graphs, scatter plots, histograms, or box-and-whisker plots) to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.
3, 4, 5	M:DSP:8:6	In response to a teacher or student generated question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested while considering the limitations that could affect interpretations; and when appropriate makes predictions; and asks new questions and makes connections to real world situations.
2, 3, 4, 5	M:PRP:8:1	<p>Students will use problem-solving strategies to investigate and understand increasingly complex mathematical content and be able to:</p> <ul style="list-style-type: none"> ▪ Use problem-solving strategies appropriately and effectively for a given situation. ▪ Determine, collect and organize the relevant information needed to solve real-world problems. ▪ Apply integrated problem-solving strategies to solve problems in the physical, natural, and social sciences and in pure mathematics.

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		<ul style="list-style-type: none"> Use technology when appropriate to solve problems. Reflect on solutions and the problem-solving process for a given situation and refine strategies as needed.
2, 3, 4, 5, 6	M:PRP:8:2	<p>Students will use mathematical reasoning and proof and be able to:</p> <ul style="list-style-type: none"> Draw logical conclusions and make generalizations using deductive and inductive reasoning. Formulate, test, and justify mathematical conjectures and arguments. Construct and determine the validity of a mathematical argument or a solution. Apply mathematical reasoning skills in other disciplines.
2, 3, 4, 5, 6	M:CCR:8:1	<p>Students will communicate their understanding of mathematics and be able to:</p> <ul style="list-style-type: none"> Articulate ideas clearly and logically in both written and oral form. Present, share, explain, and justify thinking with others and build upon the ideas of others to solve problems. Use mathematical symbols and notation. Formulate questions, conjectures, definitions, and generalizations about data, information, and problem situations.
2, 3, 4, 5, 6	M:CCR:8:2	<p>Students will create and use representations to communicate mathematical ideas and to solve problems and be able to:</p> <ul style="list-style-type: none"> Use models and technology to develop equivalent representations of the same mathematical concept. Use and create representations to solve problems and organize their thoughts and ideas. Convert between representations (e.g., a table of values, an equation, and a graph may all be representations of the same function).
New Hampshire Reading GSEs: Grades 6 – 8		
Lesson	Standard	GSE
All lessons	R:V:6:1.1 R:V:7:1.1 R—8—2.1	Students identify the meaning of unfamiliar vocabulary by using strategies to unlock meaning (e.g., knowledge of word structure, including prefixes/suffixes and base words; or context clues; or other resources, such as dictionaries, glossaries, thesauruses; or prior knowledge).
All lessons	R:V:6:2.2 R:V:7:2.2 R—8—3.2	Selecting appropriate words or explaining the use of words in context, including content specific vocabulary, words with multiple meanings, or precise vocabulary.
All lessons	R:IT:6:1.1 R:IT:7:1.1 R—8—7.1	Obtaining information from text features (e.g., table of contents, glossary, index, transition words /phrases, bold or italicized text, headings, subheadings, graphic organizers, charts, graphs, or illustrations).
All lessons	R:IT:6:1.2 R:IT:7:1.2 R—8—7.2	Using information from the text to: answer questions related to main/central ideas or key details (6); answer questions, to state the main/central ideas, or to provide supporting details (7 & 8).
All lessons	R:IT:6:1.3 R:IT:7:1.3 R—8—7.3	Organizing information to show understanding (e.g., representing main/central ideas or details within text through charting, mapping, paraphrasing, summarizing, or comparing/contrasting [6 & 7] or outlining [8]).

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All lessons	R—6—7.4 R—7—7.4 R—8—7.4	Generating questions before, during, and after reading to enhance understanding and recall; expand understanding and/or gain new information.
All lessons	R:IT:6:2.1 R:IT:7:2.1 R—8—8.1	Connecting information within a text, across texts (6), or to related ideas (7 & 8).
All lessons	R:IT:6:2.2 R:IT:7:2.2 R—8—8.2	Synthesizing information within or across text(s) (e.g., constructing appropriate titles; or formulating assertions or controlling ideas.
All lessons	R:IT:6:2.3 R:IT:7:2.3 R—8—8.3	Drawing inferences about text, including author’s purpose (e.g., to inform, explain, entertain, persuade) or message; or forming and supporting opinions/judgments and assertions about central ideas that are relevant.
All lessons	R:IT:6:2.4 R:IT:7:2.4 R—7—8.4	Distinguishing fact from opinion, and identifying possible bias/propaganda (6) or conflicting information within or across texts (7 & 8).
All lessons	R:IT:6:2.5 R:IT:7:2.5 R—8—8.5	Making inferences about causes or effects.
All lessons	R—6—13 R—7—13 R—8—13	Uses comprehension strategies (flexibly and as needed) before, during, and after reading literary and informational text.
All lessons	R—6—15.2 R—7—15.2 R—8—15.2	Evaluating information presented, in terms of relevance.
All lessons	R—6—15.3 R—7—15.3 R—8—15.3	Gathering, organizing, and interpreting the information.
All lessons	R—6—15.4 R—7—15.4 R—8—15.4	Using evidence to support conclusions.
All lessons	R—6—17.2 R—7—17.2 R—8—17.2	Participating in in-depth discussions about text, ideas, and student writing by offering comments and supporting evidence, recommending books and other materials, and responding to the comments and recommendations of peers, librarians, teachers, and others.
New Hampshire Writing & Oral Communication GSEs: Grades 6 – 8		
Lesson	Standard	GSE
2, 3, 4, 5, 6	W—6—1.1	Using varied sentence length and structure to enhance meaning (e.g., including phrases and clauses).

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	W:SL:7:1.1 W—8—1.1	
2, 3, 4, 5, 6	W—6—1.2 W:SL:7:1.2 W—8—1.2	Using the paragraph form: indenting, main idea, supporting details.
2, 3, 4, 5, 6	W—6—1.4 W:SL:7:1.4 W—8—1.4	Applying a format and text structure appropriate to the purpose of the writing
2, 3, 4, 5, 6	W—6—2.1 W:RC:7:1.1 W—8—2.1	Selecting appropriate information to set context/background (6). Selecting and summarizing key ideas to set context (7 & 8).
2, 3, 4, 5, 6	W—6—2.3 W:RC:7:1.3	Connecting what has been read (plot/ideas/concepts) to prior knowledge, other texts (6), or the broader world of ideas (7 & 8) by referring to (6) and explaining (7 & 8) relevant ideas.
2, 3, 4, 5, 6	W—6—3.1 W:RC:7:2.1 W—8—3.1	Stating and maintaining a focus (purpose), a firm judgment, or point of view when responding to a given question.
2, 3, 4, 5, 6	W—6—3.3 W:RC:7:2.3 W—8—3.3	Using specific details and references to text or relevant citations to support focus or judgment.
2, 3, 4, 5, 6	W—6—3.4 W:RC:7:2.4 W—8—3.4	Organizing ideas, using transition words/phrases and writing a conclusion that provides closure.
2, 3, 4, 5, 6	W—6—6.1 W:IW:7:1.1 W—8—6.1	Using an organizational text structure appropriate to focus/controlling idea.
2, 3, 4, 5, 6	W—6—7.1 W:IW:7:2.1 W—8—7.1	Establishing a topic.
2, 3, 4, 5, 6	W—6—7.2 W:IW:7:2.2 W—8—7.2	Stating and maintaining a focus/controlling idea.
2, 3, 4, 5, 6	W:IW:7:2.3 W—8—7.3	Writing with a sense of audience, when appropriate.
2, 3, 4, 5, 6	W—6—8.1 W:IW:7:3.1 W—8—8.1	Including facts and details relevant to focus/controlling idea, and excluding extraneous information.
2, 3, 4, 5, 6	W—6—8.2	Including sufficient details or facts for appropriate depth of information: naming, describing, explaining, comparing,

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	W:IW:7.3.2 W—8—8.2	use of visual images.
2, 3, 4, 5, 6	W:IW:7.3.4 W—8—8.4	Commenting on the significance of information, when appropriate.
2, 3, 4, 5, 6	W—6—9.4	Using punctuation to clarify meaning.
2, 3, 4, 5, 6	W:C:7.1.1 W—8—9.4	Applying rules of standard English usage to correct grammatical errors.
2, 3, 4, 5, 6	W—6—9.5 W:C:7.2.5 W—8—9.5	Correctly spelling grade-appropriate, high-frequency words, including homonyms and homophones and applying syllables and affix spelling patterns/rules (6). Correctly spelling grade-appropriate, high-frequency words and applying conventional spelling patterns/rules (7). Applying conventional and word-derivative spelling patterns/rules (8).
2, 3, 4, 5, 6	W—6—11.4 W—7—11.4 W—8—11.4	Writing in a variety of genres.
All lessons	OC—6—1.1 OC—7—1.1 OC—8—1.1	Following verbal instructions to perform specific tasks, to answer questions, or to solve problems.
All lessons	OC—6—1.2 OC—7—1.2 OC—8—1.2	Summarizing, paraphrasing, questioning, or contributing to information presented.
All lessons	OC—6—1.4 OC—7—1.4 OC—8—1.4	Participating in large and small group discussions showing respect for a range of individual ideas.

New Hampshire Health Education GSEs: Middle School

Lesson	Standard	Descriptor
2, 3, 4, 5, 6	AOD:1.2	Know the physical, social, and emotional effects of AOD use.
4	AOD:2.1	Know the risks of dependence and addiction.
1, 3, 5, 6	AOD:2.3	Know the signs and behaviors of AOD use.
5	AOD:2.4	Know the effects of binge drinking.
5, 6	AOD:2.8	Know the relationship between AOD use and transportation injuries.
4	AOD:2.11	Know the relationship between AOD use and mental health.
2, 4, 6	AOD:2.12	Know the benefits of not using AOD (physical, social, emotional, legal, financial).
3, 4	AOD:3.2	Know positive and negative internal influences on AOD use.
4	AOD:3.3	Know positive and negative family influences on AOD use.

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4	AOD:3.4	Know positive and negative peer influences on AOD use.
4, 6	AOD:3.5	Know positive and negative cultural influences on AOD use.
6	AOD:3.6	Know positive and negative legal factors that influence on AOD use.
3, 4, 5, 6	AOD:3.7	Know influences on different levels of AOD use.
4, 6	AOD:4.1	Know how to accept personal responsibility for choices about AOD use.
All lessons	MH:3.2	Know skills for effective speaking, e.g., I-statements, eye contact, assertiveness.
All lessons	MH:3.3	Know skills for effective listening, e.g., reflective listening.