NIH SUPPLEMENT THE BRAIN: OUR SENSE OF SELF

Vermont Science G.E.s: Grades 7 & 8

Lesson	G.E.	Statement
3	S7-8:1:1	Developing questions that reflect prior knowledge.
3	S7-8:1:2	Refining and focusing broad ill-defined questions.
3	S7-8:2:1	Predicting results (evidence) that support the hypothesis.
3	S7-8:2:2	Proposing a hypothesis based upon a scientific concept or principle, observation, or experience that identifies the relationship among variables.
4	S7-8:4:1	Accurately quantifying observations using appropriate measurement tools.
4	S7-8:5:1	Representing independent variable on the "X" axis and dependent variable on the "Y" axis.
4	S7-8:5:2	Determining a scale for a diagram that is appropriate to the task.
4	S7-8:5:3	Using technology to enhance a representation.
4	S7-8:6:1	Identifying, considering and addressing experimental errors (e.g., errors in experimental design, errors in data collection procedures).
3, 4	S7-8:7:1	Using scientific concepts, models, and terminology to report results, discuss relationships, and propose new explanations.
3, 4	S7-8:7:2	Generating alternative explanations.
3, 4	S7-8:7:4	Sharing conclusion/summary with appropriate audience beyond the research group.
4	S7-8:7:5	Using mathematical analysis as an integral component of the conclusion.
4	S7-8:8:1	Identifying additional data that would strengthen an investigation.
4	S7-8:8:3	Explaining relevance of findings (e.g., So what?) to the local environment (community, school, classroom).
4	S7-8:31:2	Describing the relationship between human growth and cell division.
4	S7-8:41:1	Explaining how the human body responds to environmental or biological factors to maintain internal equilibrium.

Vermont Mathematics G.E.s: Grades 6, 7, 8

Grade 6

Lesson	G.E.	Statement
4	M6:4	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.
4	M6:7	Estimates and evaluates the reasonableness of solutions appropriate to grade level.
4	M6:8	Applies properties of numbers (factor, multiple, prime, composite, greatest common factor [GCF], least common

Lesson	G.E.	Statement
		multiple [LCM], composition/decomposition), divisibility, remainders), and commutative and associative properties of operations to solve problems and to simplify computations.
4	M6:23	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.
4	M6:25	Organizes and displays data using bar graphs, tables, frequency tables, line plots, circle graphs, and stem-and-leaf plots to answer question related to the data, to analyze the data to formulate or justify conclusions, or to make predictions.
4	M6:28	In response to a teacher- or student-generated question, makes a hypothesis, collects appropriate data, organizes the data, appropriately displays/represents numerical and/or categorical data, analyzes the data to draw conclusions about the questions or hypothesis being tested, and when appropriate makes predictions, asks new questions, or makes connection to real-world situations
4	M6: 30	Demonstrate understanding of mathematical problem solving and communication through: • Approach & Reasoning—The reasoning, strategies, and skills used to solve the problem; • Connections—Demonstration of observations, applications, extensions, and generalizations; • Solution—All of the work that was done to solve the problem, including the answer; • Mathematical Language—The use of mathematical language in communicating the solution; • Mathematical Representation—The use of mathematical representation to communicate the solution; and • Documentation—Presentation of the solution.
Grade 7		
Lesson	**G.E.**	**Statement**
4	M7:7	Estimates and evaluates the reasonableness of solutions appropriate to grade level.
4	M7:8	Applies properties of numbers (greatest common factor [GCF], least common multiple [LCM], composition/decomposition, divisibility, prime factorization, inverses, and identities), and commutative, distributive, and associative properties of operations, and exponents using powers of ten and scientific notation to solve problems and to simplify computations
4	M7:23	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.
4	M7:25:1	Identifies or describes representations or elements of representations that best display a given set of data or situation, consistent with the representations required in M7: 23.
4	M7:25:2	Organizes and displays data using line graphs or histograms, bar graphs, tables, frequency tables, line plots, and stem-and-leaf plots to answer question related to the data, to analyze the data to formulate or justify conclusions, or to make predictions.
4	M7:28	In response to a teacher- or student-generated question, makes a hypothesis, collects appropriate data, organizes the data, appropriately displays/represents numerical and/or categorical data, analyzes the data to draw conclusions about the questions or hypothesis being tested, and when appropriate makes predictions, asks new questions, or makes connection to real-world situations
4	M7: 30	Demonstrate understanding of mathematical problem solving and communication through:

		• Approach & Reasoning—The reasoning, strategies, and skills used to solve the problem; • Connections—Demonstration of observations, applications, extensions, and generalizations; • Solution—All of the work that was done to solve the problem, including the answer; • Mathematical Language—The use of mathematical language in communicating the solution; • Mathematical Representation—The use of mathematical representation to communicate the solution; and • Documentation—Presentation of the solution.

Grade 8		
Lesson	**G.E.**	**Statement**
4	**M8:7**	Estimates and evaluates the reasonableness of solutions appropriate to grade level.
4	**M8:8**	Applies properties of numbers (greatest common factor [GCF], least common multiple [LCM], prime factorization, divisibility, inverses, and identities), and commutative, distributive, and associative properties of operations to solve problems and to simplify computations.
4	**M8:19**	Identifies and extends to specific cases a variety of patterns (linear and nonlinear) represented in models, tables, sequences, graphs, or in problem situations; and generalizes a linear relationship (nonrecursive explicit equation); generalizes a linear relationship to find a specific case; generalizes a nonlinear relationship using words or symbols; or generalizes a common nonlinear relationship to find a specific case.
4	**M8:23**	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.
4	**M8:28**	In response to a teacher- or student-generated question, makes a hypothesis, collects appropriate data, organizes the data, appropriately displays/represents numerical and/or categorical data, analyzes the data to draw conclusions about the questions or hypothesis being tested, and when appropriate makes predictions, asks new questions, or makes connection to real-world situations
4	**M8: 30**	Demonstrate understanding of mathematical problem solving and communication through: • Approach & Reasoning—The reasoning, strategies, and skills used to solve the problem; • Connections—Demonstration of observations, applications, extensions, and generalizations; • Solution—All of the work that was done to solve the problem, including the answer; • Mathematical Language—The use of mathematical language in communicating the solution; • Mathematical Representation—The use of mathematical representation to communicate the solution; and • Documentation—Presentation of the solution.

Vermont Reading G.E.s: Grades 6, 7, 8		
Lesson	**G.E.**	**Statement**
All lessons	**R6:5** **R7:5** **R8:5**	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	**R6:6:3** **R7:6:3** **R8:6:2**	Selecting appropriate words or explaining the use of words in context, including content-specific vocabulary, words with multiple meanings, or precise vocabulary.

All lessons	R6:7 R7:7 R8:7	Uses comprehension strategies (flexibly and as needed) while reading literary and informational text.
All lessons	R6:12:1 R7:12:1 R8:12:1	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	R6:12:2 R7:12:2 R8:12:2	Using information from the text to answer questions: related to main/central ideas or key details (6); to state the main/central ideas, or to provide supporting details (7 & 8).
All lessons	R6:12:3 R7:12:3 R8:12:3	Organizing information to show understanding (6 & 7) or relationship among facts, ideas, and events (8) (e.g., representing main/central ideas or details within text through charting, mapping, paraphrasing, summarizing, or comparing/contrasting, or outlining).
All lessons	R6:16:1 R7:16:1 R8:16:1	Connecting information within a text or across texts (6). Explaining connections about information with a text, across texts, or to related ideas (7& 8).
All lessons	R6:16:2 R7:16:2 R8:16:2	Synthesizing (6) and evaluating (7 & 8) information within or across text(s) (e.g., constructing appropriate titles; or formulating assertions or controlling ideas).
All lessons	R6:16:3 R7:16:3 R8:16:3	Drawing inferences about text, including author's purpose (e.g., to inform, explain, entertain, persuade) or message (6 & 7); explaining how purpose may affect the interpretation of the text (8); or forming and supporting opinions/judgments and assertions about central ideas that are relevant.
All lessons	R6:16:4 R7:16:4 R8:16:4	Distinguishing fact from opinion, and identifying possible bias/propaganda (6) or conflicting information within or across texts (7 & 8).
All lessons	R6:16:5 R7:16:5 R8:16:5	Making inferences about causes or effects.
All lessons	R6:19 R7:19 R8:19	Demonstrates participation in a literate community by… • Self-selecting reading materials in line with reading ability and personal interests • 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.
Vermont Writing G.E.s: Grades 6, 7, 8		
Lesson	**G.E.**	**Statement**
2, 3, 4, 5	W6:2:1 W7:2:1 W8:2:1	Applying rules of standard English usage to correct grammatical errors.

2, 3, 4, 5	W6:2:2 W7:2:2 W8:2:2	Applying basic (6) capitalization rules (7 & 8).
2, 3, 4, 5	W6:2:3 W7:2:3 W8:2:3	Using punctuation to clarify meaning (6). Applying appropriate punctuation to various sentence patterns to enhance meaning (7 & 8).
2, 3, 4, 5	W6:3:1 W7:3:1 W8:3:1	Independently applying spelling knowledge in proofreading and editing of writing.
2, 3, 4, 5	W6:4:2 W7:4:2 W8:4:2	Using the paragraph form: indenting, main idea, supporting details.
2, 3, 4, 5	W6:4:4 W7:4:4 W8:4:4	Using a format and text structure appropriate to the purpose of the writing.
2, 3, 4, 5	W6:5:1 W7:5:1 W8:5:1	Selecting appropriate information to set context/background (6). Selecting and summarizing key ideas to set context (7 & 8).
2, 3, 4, 5	W6:5:2	Summarizing key ideas.
2, 3, 4, 5	W6:5:3 W7:5:2 W8:5:2	Connecting what has been read (plot/ideas/concepts) to prior knowledge, other texts (6), or the broader world of ideas by referring to and explaining relevant ideas (7 & 8).
2, 3, 4, 5	W6:6:1 W7:6:1 W8:6:1	Stating and maintaining a focus (purpose), a firm judgment, or a point of view when responding to a given question.
2, 3, 4, 5	W6:6:2 W7:6:2 W8:6:2	Using specific details and references to text or relevant citations to support focus or judgment.
2, 3, 4, 5	W6:7:1 W7:7:1 W8:7:1	Organizing ideas using transition words/phrases and writing a conclusion that provides closure (6 & 7); drawing a conclusion by synthesizing information (e.g., demonstrating a connection to the broader world of ideas) (8).
2, 3, 4, 5	W8:7:4	Excluding loosely related or extraneous information.
3, 4, 5	W6:8:1 W7:8:1 W8:8:1	Using an organizational text structure appropriate to focus/controlling idea.
3, 4, 5	W6:8:2 W7:8:2	Selecting appropriate information to set context throughout the report; may include a lead/hook.

Lesson	G.E.	Statement
	W8:8:2	
3, 4, 5	**W6:8:3** **W7:8:4** **W8:8:4**	Writing a conclusion: that provides closure (6 & 0; by synthesizing information from the report (8).
3, 4, 5	**W6:9:1** **W7:9:1** **W8:9:1**	Stating and maintaining a focus/controlling idea/thesis (purpose).
4	**W6:10:1** **W7:10:1** **W8:10:1**	Including facts and details relevant to focus/controlling idea, and excluding extraneous information.
4	**W6:10:2** **W7:10:2** **W8:10:2**	Including sufficient details or facts for appropriate depth: naming, describing, explaining, comparing, use of visual images.
4	**W7:10:3** **W8:10:3**	Commenting on the significance of the information, when appropriate.
Vermont Health Education G.E.s: Grades 7 & 8	
Lesson	**G.E.**	**Statement**
5	**ATOD:HE2:c**	Differentiating between proper use and abuse of over-the-counter and other drugs.
5	**MEH:HE5:b**	Demonstrating ways to show respect for diversity, (e.g., mental and physical disabilities, culture, race/ethnicity, sexual orientation, age, socioeconomics).
4	**PHW:HE1:a**	Developing strategies and skills for healthy practices and behaviors that will maintain or improve the health of self and others.
4	**PHW:HE2:a**	Describing how lifestyle, pathogens, family history and other risk factors are related to the cause and prevention of disease and other health problems.
4	**PHW:HE2:b**	Explaining the relationship between positive health behaviors and the prevention of disease, (e.g., importance of sleep and rest, daily health care practices, healthy diet and physical activity).
5	**PHW:HE2:d**	Differentiating between communicable, chronic and degenerative disease processes.