

<b>DOING SCIENCE: THE PROCESS OF SCIENTIFIC INQUIRY</b>		
<b>Massachusetts Science Learning Standards: Grades 6 — 8</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
All lessons	<b>Inquiry 1</b>	Formulate a testable hypothesis.
All lessons	<b>Inquiry 2</b>	Design and conduct an experiment specifying variables to be changed, controlled, and measured.
1, 3, 4	<b>Inquiry 3</b>	Select appropriate tools and technology (e.g., calculators, computers, thermometers, meter sticks, balances, graduated cylinders, and microscopes), and make quantitative observations.
1, 3, 4	<b>Inquiry 4</b>	Present and explain data and findings using multiple representations, including tables, graphs, mathematical and physical models, and demonstrations.
1, 3, 4	<b>Inquiry 5</b>	Draw conclusions based on data or evidence presented in tables or graphs, and make inferences based on patterns or trends in the data.
All lessons	<b>Inquiry 6</b>	Communicate procedures and results using appropriate science and technology terminology.
All lessons	<b>Inquiry 7</b>	Offer explanations of procedures, and critique and revise them.
<b>Massachusetts Mathematics Learning Standards: Grades 6, 7, 8</b>		
<b>Grade 6</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
3, 4	<b>6.N.5</b>	Identify and determine common equivalent fractions, mixed numbers, decimals, and percents.
3, 4	<b>6.N.9</b>	Select and use appropriate operations to solve problems involving addition, subtraction, multiplication, division, and positive integer exponents with whole numbers, and with positive fractions, mixed numbers, decimals, and percents.
3, 4	<b>6.N.13</b>	Accurately and efficiently add, subtract, multiply, and divide (with double-digit divisors) whole numbers and positive decimals.
3, 4	<b>6.N.15</b>	Add and subtract integers, with the exception of subtracting negative integers.
3, 4	<b>6.P.4</b>	Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols, e.g., input-output tables.
3	<b>6.P.6</b>	Produce and interpret graphs that represent the relationship between two variables in everyday situations.
3	<b>6.D.2</b>	Construct and interpret stem-and-leaf plots, line plots, and circle graphs.
<b>Grade 7</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
3, 4	<b>7.N.1</b>	Compare, order, estimate, and translate among integers, fractions and mixed numbers (i.e., rational numbers),

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		decimals, and percents.
3, 4	7.N.7	Estimate and compute with fractions (including simplification of fractions), integers, decimals, and percents (including those greater than 100 and less than 1).
3, 4	7.N.8	Determine when an estimate rather than an exact answer is appropriate and apply in problem situations.
3, 4	7.N.9	Select and use appropriate operations—addition, subtraction, multiplication, division, and positive integer exponents—to solve problems with rational numbers (including negatives).
3, 4	7.P.1	Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic expressions. Include arithmetic and geometric progressions, e.g., compounding.
3	7.P.6	Use linear equations to model and analyze problems involving proportional relationships. Use technology as appropriate.
1	7.M.1	Select, convert (within the same system of measurement), and use appropriate units of measurement or scale.
3, 4	7.D.1	Select, create, interpret, and utilize the following tabular and graphical representations of data: circle graphs, Venn diagrams, stem-and-leaf plots, tables, and charts.

**Grade 8**

Lesson	Standard	Description
3, 4	8.N.1	Compare, order, estimate, and translate among integers, fractions and mixed numbers (i.e., rational numbers), decimals, and percents.
3, 4	8.N.11	Determine when an estimate rather than an exact answer is appropriate and apply in problem situations.
3, 4	8.N.12	Select and use appropriate operations—addition, subtraction, multiplication, division, and positive integer exponents—to solve problems with rational numbers (including negatives).
1	8.M.1	Select, convert (within the same system of measurement), and use appropriate units of measurement or scale.
3, 4	8.D.1	Describe the characteristics and limitations of a data sample. Identify different ways of selecting a sample, e.g., convenience sampling, responses to a survey, random sampling.
3, 4	8.D.2	Select, create, interpret, and utilize various tabular and graphical representations of data, e.g., circle graphs, Venn diagrams, scatterplots, stem-and-leaf plots, box-and-whisker plots, histograms, tables, and charts. Differentiate between continuous and discrete data and ways to represent them.

**Massachusetts English Language Arts Learning Standards: Grades 6, 7, 8**

Lesson	Standard	Description
All lessons	1.3	Apply understanding of agreed-upon rules and individual roles in order to make decisions.
2, 3, 4	4.17	Determine the meaning of unfamiliar words using context clues ( <i>definition, example</i> ).
2, 3, 4	4.20	Determine the meaning of unfamiliar words using context clues ( <i>contrast, cause and effect</i> ).
All lessons	8.10	Restate main ideas.

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All lessons	8.15	Locate facts that answer the reader's questions.
All lessons	8.16	Distinguish cause from effect.
All lessons	8.17	Distinguish fact from opinion or fiction.
All lessons	8.22	Identify and analyze main ideas, supporting ideas, and supporting details.
All lessons	13.21	Recognize use of arguments for and against an issue.
All lessons	13.22	Identify evidence used to support an argument.
All lessons	19.16	Write brief research reports with clear focus and supporting detail.
3	19.23	Write multi-paragraph compositions that have clear topic development, logical organization, effective use of detail, and variety in sentence structure.
All lessons	20.2	Use appropriate language for different audiences ( <i>other students, parents</i> ) and purposes ( <i>letter to a friend, thank you note, invitation</i> ).
All lessons	22.7	Use additional knowledge of correct mechanics ( <i>apostrophes, quotation marks, comma use in compound sentences, paragraph indentations</i> ), correct sentence structure ( <i>elimination of fragments and run-ons</i> ), and correct standard English spelling ( <i>commonly used homophones</i> ) when writing, revising, and editing.
All lessons	22.8	Use knowledge of types of sentences ( <i>simple, compound, complex</i> ), correct mechanics ( <i>comma after introductory structures</i> ), correct usage ( <i>pronoun reference</i> ), sentence structure ( <i>complete sentences, properly placed modifiers</i> ), and standard English spelling when writing and editing.
All lessons	23.7	Group related ideas and place them in logical order when writing summaries or reports.
3, 4	23.8	Organize information about a topic into a coherent paragraph with a topic sentence, sufficient supporting detail, and a concluding sentence.

**Massachusetts Comprehensive Health Learning Standards: Grade 8**

Lesson	Standard	Description
All lessons	7.5	Apply attentive listening, feedback, and assertiveness skills to enhance positive interpersonal communication.
3, 4	8.5	Identify ways individuals can reduce risk factors related to communicable and chronic diseases.
3, 4	8.7	Explain the need to follow prescribed health care procedures given by parents and health care providers.
3, 4	12.8	Identify ways consumer decisions and actions can influence physical and mental health.
3, 4	12.a	Identify the contribution of state and federal public health laws and of government agencies for the protection of the consumer.
3, 4	14.a	Describe local, state, and national laws and regulations that promote public health and the safety of the community.