

MASSACHUSETTS ALIGNMENT FOR NIH SUPPLEMENT THE BRAIN: OUR SENSE OF SELF

THE BRAIN: OUR SENSE OF SELF		
Massachusetts Science Learning Standards: Grades 6 — 8		
Lesson	Standard	Description
3, 4	Life 4	Recognize that within cells, many of the basic functions of organisms (e.g., extracting energy from food and getting rid of waste) are carried out. The way in which cells function is similar in all living organisms.
3, 4	Life 5	Describe the hierarchical organization of multicellular organisms from cells to tissues to organs to systems to organisms.
2, 3, 4	Life 6	Identify the general functions of the major systems of the human body (digestion, respiration, reproduction, circulation, excretion, protection from disease, and movement, control, and coordination) and describe ways that these systems interact with each other.
4	Life7	Recognize that every organism requires a set of instructions that specifies its traits. These instructions are stored in the organism's chromosomes. Heredity is the passage of these instructions from one generation to another.
2, 4	Life 10	Give examples of ways in which genetic variation and environmental factors are causes of evolution and the diversity of organisms.
3, 4	Inquiry 1	Formulate a testable hypothesis.
3, 4	Inquiry 2	Design and conduct an experiment specifying variables to be changed, controlled, and measured.
3, 4	Inquiry 3	Select appropriate tools and technology (e.g., calculators, computers, thermometers, meter sticks, balances, graduated cylinders, and microscopes), and make quantitative observations.
2, 3, 4	Inquiry 4	Present and explain data and findings using multiple representations, including tables, graphs, mathematical and physical models, and demonstrations.
2, 3, 4	Inquiry 5	Draw conclusions based on data or evidence presented in tables or graphs, and make inferences based on patterns or trends in the data.
2, 3, 4	Inquiry 6	Communicate procedures and results using appropriate science and technology terminology.
2, 3, 4	Inquiry 7	Offer explanations of procedures, and critique and revise them.
Massachusetts Mathematics Learning Standards: Grades 6, 7, 8		
Grade 6		
Lesson	Standard	Description
4	6.N.9	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.
4	6.N.13	Accurately and efficiently add, subtract, multiply, and divide (with double-digit divisors) whole numbers and positive decimals.
4	6.N.15	Add and subtract integers, with the exception of subtracting negative integers.

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4	6.P.4	Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols, e.g., input-output tables.
4	6.P.6	Produce and interpret graphs that represent the relationship between two variables in everyday situations.
4	6.D.2	Construct and interpret stem-and-leaf plots, line plots, and circle graphs.

Grade 7

Lesson	Standard	Description
4	7.N.6	Use the inverse relationships of addition and subtraction, and of multiplication and division, to simplify computations and solve problems, e.g., multiplying by $\frac{1}{2}$ or 0.5 is the same as dividing by 2.
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).
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).
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.
4	7.P.6	Use linear equations to model and analyze problems involving proportional relationships. Use technology as appropriate.
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
4	8.N.11	Determine when an estimate rather than an exact answer is appropriate and apply in problem situations.
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).
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.
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, 5	4.17	Determine the meaning of unfamiliar words using context clues (<i>definition, example</i>).
2, 3, 4, 5	4.20	Determine the meaning of unfamiliar words using context clues (<i>contrast, cause and effect</i>).

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2, 3, 4, 5	8.10	Restate main ideas.
2, 3, 4, 5	8.15	Locate facts that answer the reader's questions.
2, 3, 4, 5	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.
4	19.16	Write brief research reports with clear focus and supporting detail.
3	19.17	Write a short explanation of a process that includes a topic statement, supporting details, and a conclusion.
2, 5	19.22	Write and justify a personal interpretation of literary, informational, or expository reading that includes a topic statement, supporting details from the literature, and a conclusion.
5	19.23	Write multi-paragraph compositions that have clear topic development, logical organization, effective use of detail, and variety in sentence structure.
2, 3, 4, 5	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>).
2, 3, 4, 5	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.
2, 3, 4, 5	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.
2, 3, 4, 5	23.7	Group related ideas and place them in logical order when writing summaries or reports.
2, 4, 5	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
2, 3, 4, 5	1.7	Explain the function of human body systems and how body systems work together.
4	1.8	Describe the influence of health habits on growth and development.
4	1.9	Apply skills that increase immediate peak functioning of body systems (vigorous exercise, eating nutritious foods, adequate rest).
4	1.10	Define genes and the concept of heredity.
4	2.13	Explain the personal benefits of making positive health decisions and monitor progress towards personal wellness.
All lessons	7.5	Apply attentive listening, feedback, and assertiveness skills to enhance positive interpersonal communication.

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4	8.5	Identify ways individuals can reduce risk factors related to communicable and chronic diseases.
5	8.7	Explain the need to follow prescribed health care procedures given by parents and health care providers.
4, 5	12.8	Identify ways consumer decisions and actions can influence physical and mental health.