

<b>THE BRAIN: OUR SENSE OF SELF</b>		
<b>Ohio Academic Standards for Science - Grades 6, 7, 8</b>		
<b>Grade 6</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
2, 3, 4	Life 1	Explain that many of the basic functions of organisms are carried out by or within cells and are similar in all organisms.
2, 3, 4	Life 2	Explain that multicellular organisms have a variety of specialized cells, tissues, organs and organ systems that perform specialized functions.
2, 4	Physical 4	Describe that chemical and physical changes occur all around us (e.g., in the human body, cooking and industry).
2	Sci & Tech 1	Explain how technology influences the quality of life.
2, 3, 4	Inquiry 1	Explain that there are not fixed procedures for guiding scientific investigations; however, the nature of an investigation determines the procedures needed.
3, 4	Inquiry 2	Choose the appropriate tools or instruments and use relevant safety procedures to complete scientific investigations.
1, 2, 3, 4	Inquiry 3	Distinguish between observation and inference.
2, 3, 4	Ways of Knowing 1	Identify that hypotheses are valuable even when they are not supported.
3, 4	Ways of Knowing 2	Describe why it is important to keep clear, thorough and accurate records.
1, 2, 3, 4	Ways of Knowing 3	Identify ways scientific thinking is helpful in a variety of everyday settings.
<b>Grade 7</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
2, 3	Life 1	Investigate the great variety of body plans and internal structures found in multicellular organisms.
3	Physical 3	Identify different forms of energy (e.g., electrical, mechanical, chemical, thermal, nuclear, radiant and acoustic).
2, 4	Sci & Tech 3	Recognize that science can only answer some questions and technology can only solve some human problems.
4	Inquiry 1	Explain that variables and controls can affect the results of an investigation and that ideally one variable should be tested at a time; however it is not always possible to control all variables.
4	Inquiry 2	Identify simple independent and dependent variables.
3, 4	Inquiry 3	Formulate and identify questions to guide scientific investigations that connect to science concepts and can be answered through scientific investigations.

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4	<b>Inquiry 4</b>	Choose the appropriate tools and instruments and use relevant safety procedures to complete scientific investigations.
2, 4	<b>Inquiry 5</b>	Analyze alternative scientific explanations and predictions and recognize that there may be more than one good way to interpret a given set of data.
4	<b>Inquiry 6</b>	Identify faulty reasoning and statements that go beyond the evidence or misinterpret the evidence.
3, 4	<b>Inquiry 7</b>	Use graphs, tables and charts to study physical phenomena and infer mathematical relationships between variables (e.g., speed and density).
4	<b>Ways of Knowing 1</b>	Show that the reproducibility of results is essential to reduce bias in scientific investigations.
4	<b>Ways of Knowing 2</b>	Describe how repetition of an experiment may reduce bias.
1, 2, 3, 4	<b>Ways of Knowing 3</b>	Describe how the work of science requires a variety of human abilities and qualities that are helpful in daily life (e.g., reasoning, creativity, skepticism and openness).

**Grade 8**

<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
4	<b>Inquiry 1</b>	Choose the appropriate tools or instruments and use relevant safety procedures to complete scientific investigations.
4	<b>Inquiry 2</b>	Describe the concepts of sample size and control and explain how these affect scientific investigations.
2, 3, 4	<b>Inquiry 3</b>	Read, construct and interpret data in various forms produced by self and others in both written and oral form (e.g., tables, charts, maps, graphs, diagrams and symbols).
4	<b>Inquiry 4</b>	Apply appropriate math skills to interpret quantitative data (e.g., mean, median and mode).
1, 2, 3, 4	<b>Ways of Knowing 1</b>	Identify the difference between description (e.g., observation and summary) and explanation (e.g., inference, prediction, significance and importance).
4	<b>Ways of Knowing 2</b>	Explain why it is important to examine data objectively and not let bias affect observations.

**Ohio Academic Standards for English Language Arts – Grades 6, 7, 8**

<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
2, 3, 4, 5	<b>Vocabulary 1</b>	Define the meaning of unknown words by using context clues and the author’s use of: definition, restatement and example (6 & 7); comparison, contrast and cause and effect (8).
2, 3, 4, 5	<b>Reading Process 1</b>	Establish and adjust purposes for reading, including to find out, to understand, to interpret, to enjoy and to solve problems. (6 & 7) Apply reading comprehension strategies, including making predictions, comparing and contrasting, recalling and summarizing and making inferences and drawing conclusions (8).
<b>All lessons</b>	<b>Reading Process 2</b>	Answer literal, inferential, evaluative and synthesizing questions to demonstrate comprehension of grade-appropriate print texts and electronic and visual media (8).
2, 3, 4, 5	<b>Reading</b>	Summarize the information in texts, recognizing important ideas and supporting details, and noting (6) or referencing

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	<b>Process 4</b>	(7) gaps or contradictions.
<b>All lessons</b>	<b>Reading Process 6</b>	Answer literal, inferential, evaluative and synthesizing questions to demonstrate comprehension of grade-appropriate print texts and electronic and visual media (6 & 7).
<b>All lessons</b>	<b>Reading Applications 2</b>	Analyze examples of cause and effect and fact and opinion (6 & 7).
<b>All lessons</b>	<b>Reading Applications 5</b>	Analyze information found in maps, charts, tables, graphs, diagrams, cutaways (6) and overlays (7 & 8).
<b>2, 3, 4, 5</b>	<b>Reading Applications 8</b>	Summarize information from informational text, identifying the treatment, scope and organization of ideas (6).
<b>3, 4, 5</b>	<b>Writing Process 3</b>	Establish a thesis statement for informational writing or a plan for narrative writing.
<b>All lessons</b>	<b>Writing Process 4</b>	Determine a purpose and audience (6 & 7) and plan strategies (e.g., adapting focus, content structure and point of view) to address purpose and audience (8).
<b>All lessons</b>	<b>Writing Process 7</b>	Vary simple, compound and complex sentence structures.
<b>All lessons</b>	<b>Writing Process 9</b>	Vary language and style as appropriate to audience and purpose (6).
<b>3, 4</b>	<b>Writing Process 17</b>	Prepare for publication (e.g., for display or for sharing with others) writing that follows a format appropriate to the purpose, using such techniques as electronic resources, principles of design (e.g., margins, tabs, spacing and columns) and graphics (e.g., drawings, charts and graphs) to enhance the final product.
<b>3, 4</b>	<b>Writing Applications 4</b>	Write informational essays or reports, including research.
<b>5</b>	<b>Writing Applications 5</b>	Write persuasive essays that: establish a clear position and include organized and relevant information to support ideas (6 & 7); establish and develop a controlling idea, support arguments with detailed evidence, exclude irrelevant information, and cite sources of information (8).
<b>All lessons</b>	<b>Writing Applications 6</b>	Produce informal writings (e.g., journals, notes and poems) for various purposes.
<b>All lessons</b>	<b>Writing Conventions 1</b>	Spell frequently misspelled (6) and high frequency words correctly (7). Use correct spelling conventions (8).
<b>3, 4</b>	<b>Research 1</b>	Generate a topic, assigned or personal interest, and open-ended questions for research and develop a plan for gathering information (6 & 7). Compose open-ended questions for research, assigned or personal interest, and modify questions as necessary during inquiry and investigation (8).
<b>3, 4</b>	<b>Research 2</b>	Identify appropriate sources, and gather relevant information from multiple sources (e.g., school library catalogs, online databases, electronic resources and Internet-based resources).
<b>All lessons</b>	<b>Research 8</b>	Use a variety of communication techniques, including oral, visual, written or multimedia reports, to present information that supports a clear position with organized and relevant evidence about the topic or research question.

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All lessons	<b>Communication 1</b>	Demonstrate active listening strategies (e.g., asking focused questions, responding to cues, making visual contact) (6 & 7). Apply active listening strategies (e.g., monitoring message for clarity, selecting and organizing essential information, noting cues such as changes in pace) (8).
All lessons	<b>Communication 2</b>	Summarize the main idea and draw conclusions from presentations and visual media. (6) Draw logical inferences from presentations and visual media. (7)
All lessons	<b>Communication 3</b>	Interpret the speaker’s purpose in presentations and visual media (e.g., to inform, to entertain, to persuade) (6 & 7).
All lessons	<b>Communication 8</b>	Deliver informational presentations (e.g., expository, research) that: demonstrate an understanding of the topic and present events or ideas in a logical sequence; support the controlling idea or thesis with relevant facts, details, examples, quotations, statistics, stories and anecdotes; include an effective introduction and conclusion and use a consistent organizational structure (e.g., cause-effect, compare-contrast); use appropriate visual materials (e.g., diagrams, charts, illustrations) and available technology; and draw from multiple sources and identify sources used.

**Ohio Academic Standards for Mathematics – Grades 6, 7, 8**

**Grade 6**

Lesson	Standard	Description
4	<b>Patterns, Functions and Algebra 1</b>	Represent and analyze patterns, rules and functions, using physical materials, tables and graphs.
4	<b>Patterns, Functions and Algebra 5</b>	Produce and interpret graphs that represent the relationship between two variables.
4	<b>Data Analysis and Probability 1</b>	Read, construct and interpret line graphs, circle graphs and histograms.
2, 4	<b>Data Analysis and Probability 2</b>	Select, create and use graphical representations that are appropriate for the type of data collected.

**Grade 7**

Lesson	Standard	Description
4	<b>Patterns, Functions and Algebra 1</b>	Represent and analyze patterns, rules and functions with words, tables, graphs and simple variable expressions.
4	<b>Patterns, Functions and</b>	Analyze linear and simple nonlinear relationships to explain how a change in one variable results in the change of another.

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	<b>Algebra 10</b>	
4	<b>Data Analysis and Probability 1</b>	Read, create and interpret box-and-whisker plots, stem-and-leaf plots, and other types of graphs, when appropriate.
4	<b>Data Analysis and Probability 2</b>	Analyze how decisions about graphing affect the graphical representation; e.g., scale, size of classes in a histogram, number of categories in a circle graph.
4	<b>Data Analysis and Probability 5</b>	Compare data from two or more samples to determine how sample selection can influence results.

**Grade 8**

<b>Lesson</b>	<b>Standard</b>	<b>Description</b>
4	<b>Number, Number Sense, and Operations 6</b>	Estimate, compute and solve problems involving rational numbers, including ratio, proportion and percent, and judge the reasonableness of solutions.
4	<b>Data Analysis and Probability 1</b>	Use, create and interpret scatterplots and other types of graphs as appropriate.
4	<b>Data Analysis and Probability 9</b>	Construct convincing arguments based on analysis of data and interpretation of graphs.

**National Health Education Standards – Grades 6 – 8: cited from pre-publication document of National Health Education Standards, Pre K-12, American Cancer Society, December 2005 – August 2006**

<b>Lesson</b>	<b>Standard</b>	<b>Performance Indicator</b>
4	<b>1.8.1</b>	Analyze the relationship between healthy behaviors and personal health.
4	<b>1.8.3</b>	Analyze how the environment impacts personal health.
4	<b>1.8.4</b>	Describe how family history can impact personal health.
4	<b>1.8.7</b>	Describe the benefits and barriers to practicing healthy behaviors.
4	<b>1.8.8</b>	Examine the likelihood of injury or illness if engaging in unhealthy behaviors.
4	<b>1.8.9</b>	Examine the potential seriousness of injury or illness if engaging in unhealthy behaviors.
4	<b>2.8.1</b>	Examine how family influences the health of individuals.
4	<b>2.8.3</b>	Describe how peers influence healthy and unhealthy behaviors.

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4	2.8.8	Explain the influence of personal values and beliefs on individual health practices and behaviors.
4	2.8.9	Describe how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors.
4	3.8.1	Analyze the validity of health information, products, and services.
4	4.8.1	Apply effective verbal and nonverbal communication skills to enhance health.
4	5.8.1	Identify circumstances that can help or hinder healthy decision-making.
4	5.8.2	Determine when health-related situations require the application of a thoughtful decision-making process.
4	5.8.3	Distinguish when individual or collaborative decision-making is appropriate.
4	5.8.5	Predict the potential short and long-term impact of each alternative on self and others.
4	5.8.6	Choose healthy alternatives over unhealthy alternatives when making a decision.
4	5.8.7	Analyze the outcomes of a health-related decision.
4	6.8.1	Assess personal health practices.
4	6.8.2	Develop a goal to adopt, maintain, or improve a personal health practice.
4	6.8.3	Apply strategies and skills needed to attain a personal health goal.
4	6.8.4	Describe how personal health goals can vary with changing abilities, priorities, and responsibilities.
4	7.8.1	Explain the importance of assuming responsibility for personal health behaviors.
4	7.8.2	Demonstrate healthy practices and behaviors that will maintain or improve the health of self and others.
4	7.8.3	Demonstrate behaviors to avoid or reduce health risks to self and others.
4	8.8.1	State a health enhancing position on a topic and support it with accurate information.
4	8.8.2	Demonstrate how to influence and support others to make positive health choices.
4	8.8.4	Identify ways that health messages and communication techniques can be altered for different audiences.