



## Ohio Content Standards: Be<sup>3</sup> Smart

Grade Seven - Science Model Curriculum Ohio Department of Education

### Grade Band Theme: Order and Organization

All Lessons in the program apply to the Science Inquiry and Application standards.

#### Science Inquiry and Application

*During the years of grades 5-8, all students must use the following scientific processes, with appropriate laboratory safety techniques, knowledge and understanding in all science content areas:*

- Identify questions that can be answered through scientific investigations;
- Design and conduct a scientific investigation;
- Use appropriate mathematics, tools and techniques to gather data and information;
- Analyze and interpret data;
- Develop descriptions, models, explanations and predictions;
- Think critically and logically to connect evidence and explanations;
- Recognize and analyze alternative explanations and predictions; and
- Communicate scientific procedures and explanations.

Strand	Physical Science	page 251
Topic	Conservation of Mass and Energy	
Content Statement	Energy can be transformed or transferred but it is never lost.	
Content Elaboration	<p>A system is separated from its surroundings by either a physical or mental boundary. A closed system is one that does not interact with its surroundings. Matter and energy cannot get into or out of a closed system. Most systems on Earth are open systems. Matter and energy can be transferred into or out of an open system. If energy appears to be gained or lost, it has just transformed or transferred into a different system. Examples of systems include ecosystems, the atmosphere, the hydrosphere, the solar system and the human body.</p> <p>When energy transfers to a large system, it may be difficult to measure the effects of the added energy. Dissipated energy (energy that is transformed into thermal energy and released into the surroundings) is difficult or impossible to recapture. Some systems dissipate less energy than others, leaving more energy to use.</p>	
Lessons	Lesson 1: Introduction to Energy, Lesson 2: Light bulb or Heat Bulb, Lesson 3: Insulation and Air Leaks, Lesson 4: Heating and Cooling, Lesson 6 Appliances and Energy	

Strand	Physical Science	page 257
Topic	Conservation of Mass and Energy	
Content Statement	Energy can be transformed through a variety of different ways.	
Content Elaboration	<p>Mechanical energy can be transferred when objects push or pull on each other over a distance.</p> <p>Electromagnetic waves transfer energy when they interact with matter.</p> <p>Thermal energy can be transferred through radiation, convection and conduction.</p> <p>Electrical energy transfers when an electrical source is connected in a complete electrical circuit to an electrical device.</p>	

<b>Lessons</b>	Lesson 1: Introduction to Energy, Lesson 2: Light bulb or Heat Bulb, Lesson 3: Insulation and Air Leaks, Lesson 4: Heating and Cooling, Lesson 6 Appliances and Energy
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### **National Energy Literacy Principles**

1. Energy is a physical quantity that follows precise natural laws. 1.1, 1.2, 1.3, 1.4
2. Physical processes on Earth are the result of energy flow through the Earth system. 2.1
4. Various Sources of energy can be used to power human activities, and often this energy must be transferred from source to destination. 4.1
5. Energy decisions are influenced by economic, political, environmental, and social factors. 5.1, 5.4, 5.6
6. The amount of energy used by human societies depends on many factors. 6.2, 6.4, 6.6, 6.7, 6.8
7. The quality of life of individuals and societies is affected by energy choices. 7.1, 7.3

Theme	World Studies from 750 B.C. to 1600 A.D.: Ancient Greece to the First Global Age page 28
Strand	Economics
Topic	<b>Economic Decision Making and Skills</b> Effective economic decision making requires students to be able to reason logically about key economic issues that affect their lives as consumers, producers, savers, investors and citizens. Economic decision making and skills engage students in the practice of analyzing costs and benefits, collecting and organizing economic evidence, and proposing alternatives to economic problems.
Content Statement	<b>19. Individuals, governments and businesses must analyze costs and benefits when making economic decisions. A cost-benefit analysis consists of determining the potential costs and benefits of an action and then balancing the costs against the benefits.</b>
Content Elaboration	Economic decisions, whether they are made by individuals, governments or businesses, are generally made by weighing the costs with the benefits. The desired choice is when the benefits of a decision exceed the costs. This decision-making process is referred to as cost-benefit analysis.
Lessons	Lesson 1: Introduction to Energy, Lesson 2: Light bulb or Heat Bulb, Lesson 3: Insulation and Air Leaks , Lesson 4: Heating and Cooling, Lesson 5: Saving Water and Energy, Lesson 6: Appliances and Energy, Lesson 7: Energy Synopsis

Theme	World Studies from 750 B.C. to 1600 A.D.: Ancient Greece to the First Global Age page 29
Strand	Economics
Topic	<b>Scarcity</b> There are not enough resources to produce all the goods and services that people desire.
Content Statement	<b>20. The variability in the distribution of productive resources in the various regions of the world contributed to specialization, trade and interdependence.</b>
Content Elaboration	Productive resources are not distributed equally around the world. Productive resources (i.e., natural resources, human resources and capital goods) are the resources used to make goods and services. The abundance or lack of resources in a region contributes to specialization and trade with other regions.
Lessons	Lesson 1: Introduction to Energy, Lesson 2: Light bulb or Heat Bulb, Lesson 3: Insulation and Air Leaks , Lesson 4: Heating and Cooling, Lesson 5: Saving Water and Energy, Lesson 6: Appliances and Energy, Lesson 7: Energy Synopsis

## Ohio Content Standards: Be<sup>3</sup> Smart

### Grade Seven - Mathematics Model Curriculum Ohio Department of Education

No specific energy efficiency content standards.

## Ohio Content Standards: Be<sup>3</sup> Smart

### Grade Seven - English Language Arts Model Curriculum Ohio Department of Education

<b>Strand</b>	<b>Reading: Informational Text</b> <span style="float: right;"><b>page 11</b></span>
<b>Topic</b>	<b>Key Ideas and Details</b>
<b>Standard Statement</b>	1. Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
<b>Content Elaboration</b>	Readers are expected to analyze (separate text into parts for individual study) several pieces of textual evidence in order to identify the central ideas in a text which may be expressed explicitly as well as from inferences (general conclusions from information given) drawn from text.
<b>Lessons</b>	All lessons – resources and support materials

<b>Strand</b>	<b>Reading: Informational Text</b> <span style="float: right;"><b>page 13</b></span>
<b>Topic</b>	<b>Craft and Structure</b>
<b>Standard Statement</b>	4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone. 5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas. 6. Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.
<b>Content Elaboration</b>	By analyzing text structure (e.g., expository, cause-effect, comparison-contrast) and text organization, a reader is able to understand how an author's use of craft and structure contributes to the development of ideas in text.
<b>Lessons</b>	All lessons – resources and support materials

<b>Strand</b>	<b>Reading: Informational Text</b> <span style="float: right;"><b>page 17</b></span>
<b>Topic</b>	<b>Range of Reading and Level of Text Complexity</b>
<b>Standard Statement</b>	10. By the end of the year, read and comprehend literary nonfiction in the grades 6-8 text complexity band proficiently, with scaffolding as needed at the high end of the range.
<b>Content Elaboration</b>	Students, through more exposure to informational text and the development of important reading skills and strategies that aid in reading this text, will gain knowledge as well as familiarity with various text structures and elements.
<b>Lessons</b>	All lessons – resources and support materials

Strand	Writing	page 19
Topic	Text Types and Purposes	
Standard Statement	<p>1. Write arguments to support claims with clear reasons and relevant evidence.</p> <p>a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.</p> <p>b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.</p> <p>c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.</p> <p>d. Establish and maintain a formal style.</p> <p>e. Provide a concluding statement or section that follows from and supports the argument presented.</p> <p>2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.</p> <p>b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. Establish and maintain a formal style.</p> <p>f. Provide a concluding statement or section that follows from and supports the information or explanation presented.</p>	
Content Elaboration	The focus of this topic, Text Types and Purposes, is the understanding that writers develop complete, logically sequenced text with credible evidence and detail using language appropriate for the topic and audience.	
Lessons	All lesson journals	

Strand	Language	page 33
Topic	Conventions of Standard English	
Standard Statement	<p>1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</p> <p>a. Explain the function of phrases and clauses in general and their function in specific sentences.</p> <p>b. Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.</p> <p>c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.</p> <p>2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.</p> <p>a. Use a comma to separate coordinate adjectives (e.g., <i>It was a fascinating, enjoyable movie</i> but not <i>He wore an old[,] green shirt</i>).</p> <p>b. Spell correctly.</p>	

<b>Content Elaboration</b>	The focus of this topic, Conventions of Standard English, is the understanding that knowing and using writing conventions and grammatical structures appropriate for seventh grade helps students communicate clearly and concisely.
<b>Lessons</b>	All lessons and journals

<b>Strand</b>	<b>Language</b> <span style="float: right;"><b>page 35</b></span>
<b>Topic</b>	<b>Knowledge of Language</b>
<b>Standard Statement</b>	3. Use knowledge of language and its conventions when writing, speaking, reading, or listening. a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.
<b>Content Elaboration</b>	When applying writing conventions to written work, students vary sentence patterns, maintain a consistent writing style (the author's distinctive manner of expression) and tone (the author's attitude toward his or her subject).
<b>Lessons</b>	All lessons and journals