A Correlation of

To the

South Carolina Academic Standards and Performance Indicators for Science Grades 6-8
Introduction

This document demonstrates how *Pearson Online Learning Exchange* meets and supports the South Carolina Academic Standards and Performance Indicators for Science. References are to the program assets, such as NBC Learn Videos, Interactive Media Activities, Documents, Links, and Images.

*Pearson’s Online Learning Exchange* is a supplemental, Web-and mobile-ready destination featured curated K-12 content from Pearson, our Partners, and the best of the Web. Pearson has partnered with several providers of premier educational materials. So with OLE, you’re not just getting the best of Pearson, you’re getting the best of NASA, GettyImages, SchoolTube, PhET, Untamed Science, BBC, Gooru, and more!

The Literacy content library will help save you valuable time searching for quality Common Core aligned teaching resources including videos, interactive media, assessments, and more.

How can OLE help?

- Save time searching for standards-based, Common Core aligned materials
- Access quality, safe content
- Create and customize digital lessons and tests
- Upload your content to keep everything in one place
- Collaborate with students and teachers
- Use OLE with any mobile device
A Correlation of Pearson OLE, Grades 6-8, to the
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<td><strong>NOTE</strong>: Scientific investigations should always be done in the context of content knowledge expected at this grade level. The standard describes how students should learn and demonstrate knowledge of the content outlined in the other standards.</td>
<td><strong>Standard 6.S.1</strong>: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content.</td>
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Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet  
Forces Image: Rube Goldberg Machine  
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Investigative Processes Image: Lab Equipment  
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Light Image: Double Slit Experiment  
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Nature of Science Image: Marine Biology  
Nature of Science Image: Optical Topography Device  
Nature of Science Image: Satellite Signals  
Nature of Science Image: Science Teacher  
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Cells Interactivity: How Can You Observe Cells?  
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Earth’s Structure Interactivity: Monitoring a Volcano  
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Nature of Science Interactivity: Exploring Engineering  
Nature of Science Interactivity: Inquiry Diagram  
Nature of Science Interactivity: Making Observations of Our Solar System  
Nature of Science Interactivity: Redi’s and Pasteur’s Experiments  
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Nature of Science Interactivity: Scientific Stumbling Blocks  
Nature of Science Interactivity: Space Spinoffs  
Nature of Science Interactivity: What Is Scientific Inquiry?  
Nature of Science Interactivity: When Science Sparks Controversy  
Nature of Science Interactivity: Where Did Computers Come From?  
Nature of Science Video: What Is Science, Anyway?  
**Link:** Interactive Science: Earth Science Online Student Editions, Science and Technology  
Investigative Processes Video: Scientific Method Overview  
Nature of Science Interactivity: A Student’s Guide to Global Climate Change  
Nature of Science Interactivity: Aviary Architect  
Nature of Science Interactivity: Build a Bridge  
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Scientific Measurement Video: How Folding Paper Can Get You to the Moon |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

### Pearson OLE Online Learning Exchange

**6.S.1A. Conceptual Understanding:** The practices of science and engineering support the development of science concepts, develop the habits of mind that are necessary for scientific thinking, and allow students to engage in science in ways that are similar to those used by scientists and engineers.

**Performance Indicators:** Students who demonstrate this understanding can:

**6.S.1A.1** Ask questions to (1) generate hypotheses for scientific investigations, (2) refine models, explanations, or designs, or (3) extend the results of investigations or challenge claims.

**Assets**
- **Video:** Earth’s Surface Video: Building a Dinosaur 101
- Nature of Science Video: What Is Science, Anyway?
- Investigative Processes Video: Baboon Research
- Investigative Processes Video: Principles of Scientific Principles
- **Document:** Investigative Processes Lab: Theories and Laws
- Astronomy and Space Lesson: The Big Bang
- Gooru Webquest
- Diversity of Life Lesson: Natural Selection Gooru Webquest
- Earth’s Surface Lab: Exploring Geologic Time
- Through Core Samples
- Nature of Science Lab: Keeping Flowers Fresh
- Diversity of Life Lab: Nature at Work
- Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants
- Natural Resources Lab: Waste Away
- Ecology Lab: Carbon and Oxygen Blues
- Animals Lab: One for Al

**Image:** Nature of Science Image: Laboratory Notebook

**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?
- Nature of Science Interactivity: Scientific Stumbling Blocks
- Nature of Science Interactivity: Building a Theory
- Genetics Interactivity: Mendel’s Experiments
- Nature of Science Interactivity: Inquiry Diagram

**Link:** Nature of Science Interactivity: A Student’s Guide to Global Climate Change
- Investigative Processes Video: Scientific Method Overview
- Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105
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| 6.S.1A.2 Develop, use, and refine models to (1) understand or represent phenomena, processes, and relationships, (2) test devices or solutions, or (3) communicate ideas to others. | **Assets**  
**Video:** Earth’s Surface Video: Building a Dinosaur 101  
Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Astronomy and Space Lesson: The Big Bang  
Gooru Webquest  
Natural Resources Lab: Shelterwood Cutting  
Earth’s Surface Lab: Exploring Geologic Time Through Core Samples  
Matter Lesson: Atomic Models Gooru Webquest  
Scientific Measurement Lab: Measuring Mass  
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Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Science Teacher  
Nature of Science Image: Marine Biology  
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Nature of Science Interactivity: Scientific Stumbling Blocks  
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Genetics Interactivity: Mendel’s Experiments  
Nature of Science Interactivity: Inquiry Diagram  
Earth’s Structure Interactivity: Monitoring a Volcano  
Nature of Science Interactivity: Making Observations of Our Solar System  
Investigative Processes Interactivity: Why Make a Model?  
Investigative Processes Interactivity: The Need for Numbers  
**Link:** Nature of Science Interactivity: A Student’s Guide to Global Climate Change  
Investigative Processes Video: Scientific Method Overview  
Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105 |
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| **6.S.1A.3** Plan and conduct controlled scientific investigations to answer questions, test hypotheses, and develop explanations: (1) formulate scientific questions and testable hypotheses, (2) identify materials, procedures, and variables, (3) select and use appropriate tools or instruments to collect qualitative and quantitative data, and (4) record and represent data in an appropriate form. Use appropriate safety procedures. | **Assets**  
**NBC Learn:** Animal Behavior Video: Inside a Chimpanzee Research Lab  
**Video:** Nature of Science Video: What Is Science, Anyway?  
Investigative Processes Video: Baboon Research  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab:  
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Nature of Science Image: Laboratory Notebook  
Nature of Science Image: Science Teacher  
Nature of Science Image: Marine Biology  
Investigative Processes Image: Student Lab Safety  
Investigative Processes Image: Lab Equipment  
Investigative Processes Image: Petri Dishes  
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Nature of Science Interactivity: Redi's and Pasteur's Experiments  
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Investigative Processes Interactivity: Safety in the Physical Science Lab  
Investigative Processes Interactivity: Tools Used in Physical Science |
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<td><strong>6.S.1A.4</strong> Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulation, graphing, or statistical analysis) to (1) reveal patterns and construct meaning or (2) support hypotheses, explanations, claims, or designs. (Continued)</td>
<td><strong>(Continued)</strong> Interactive Media Activity: Nature of Science Interactivity: What Is Scientific Inquiry? Nature of Science Interactivity: Scientific Stumbling Blocks Nature of Science Interactivity: Building a Theory Genetics Interactivity: Mendel’s Experiments Nature of Science Interactivity: Inquiry Diagram Nature of Science Interactivity: Reviving the 1918 Virus Earth’s Water Interactivity: Mutation Mystery Earth’s Structure Interactivity: Monitoring a Volcano Nature of Science Interactivity: Making Observations of Our Solar System Genetics Interactivity: DNA Fingerprinting Nature of Science Interactivity: A Walk in the Forest Investigative Processes Interactivity: Plotting a Line Graph Electricity and Magnetism Interactivity: Discovering Ohm’s Law Investigative Processes Interactivity: The Need for Numbers <strong>Link:</strong> Nature of Science Interactivity: A Student’s Guide to Global Climate Change Investigative Processes Video: Scientific Method Overview Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105</td>
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| **6.S.1A.5** Use mathematical and computational thinking to (1) use and manipulate appropriate metric units, (2) collect and analyze data, (3) express relationships between variables for models and investigations, or (4) use grade-level appropriate statistics to analyze data. | **Assets**
Video: Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Scientific Measurement Video: Measuring Up  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Nature of Science Lab: History of Measurement  
Natural Resources Lab: Future Energy Use  
Nature of Science Lab: Keeping Flowers Fresh  
Scientific Measurement Lab: Measuring Mass  
Diversity of Life Lab: Nature at Work  
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants  
Viruses Lab: How Many Viruses Fit on a Pin?  
**Image:** Nature of Science Image: Laboratory Notebook  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Marine Biology  
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Investigative Processes Interactivity: The Need for Numbers  
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**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change  
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| 6.S.1A.6 Construct explanations of phenomena using (1) primary or secondary scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams. | **Assets**

**Video:** Nature of Science Video: What Is Science, Anyway?
Investigative Processes Video: Baboon Research
Investigative Processes Video: Principles of Scientific Principles

**Document:** Investigative Processes Lab: Theories and Laws
Electricity and Magnetism Lab: Electrons and Magnetism
Astronomy and Space Lesson: The Big Bang
Gooru Webquest
Earth’s Structure Lab: Moving the Continents
Natural Resources Lab: Future Energy Use
Diversity of Life Lesson: Natural Selection Gooru Webquest
The Atmosphere Lesson: Ozone Hole Gooru Webquest
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Animals Lab: One for All

**Image:** Light Image: Double Slit Experiment
Nature of Science Image: Laboratory Notebook
Genetics Image: Human Genome
Nature of Science Image: DNA Sequence
Nature of Science Image: Science Teacher

**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?
Nature of Science Interactivity: Scientific Stumbling Blocks
Nature of Science Interactivity: Building a Theory
Genetics Interactivity: Mendel’s Experiments
Nature of Science Interactivity: Inquiry Diagram
Earth’s Water Interactivity: Mutation Mystery
Earth’s Structure Interactivity: Monitoring a Volcano
Nature of Science Interactivity: Making Observations of Our Solar System
Nature of Science Interactivity: A Walk in the Forest
Electricity and Magnetism Interactivity: Discovering Ohm’s Law

**Link:** Nature of Science Interactivity: A Student’s Guide to Global Climate Change
Investigative Processes Video: Scientific Method Overview |
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<td><strong>(Continued)</strong> Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105</td>
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| **6.S.1A.7** Construct and analyze scientific arguments to support claims, explanations, or designs using evidence from observations, data, or informational texts. | **Assets** | **Video:** Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Electricity and Magnetism Lab: Electrons and Magnetism  
Astronomy and Space Lesson: The Big Bang  
Gooru Webquest  
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Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Science Teacher
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

(Continued)

6.S.1A.7 Construct and analyze scientific arguments to support claims, explanations, or designs using evidence from observations, data, or informational texts.

### Pearson OLE Online Learning Exchange

(Continued)

**Interactive Media Activity:** Nature of Science Interactivity: When Science Sparks Controversy

- Nature of Science Interactivity: What Is Scientific Inquiry?
- Nature of Science Interactivity: Scientific Stumbling Blocks
- Nature of Science Interactivity: Building a Theory
- Genetics Interactivity: Mendel's Experiments
- Nature of Science Interactivity: Inquiry Diagram
- Nature of Science Interactivity: Reviving the 1918 Virus
- Earth's Water Interactivity: Mutation Mystery
- Earth's Structure Interactivity: Monitoring a Volcano
- Nature of Science Interactivity: Making Observations of Our Solar System
- Genetics Interactivity: DNA Fingerprinting
- Nature of Science Interactivity: A Walk in the Forest
- Electricity and Magnetism Interactivity: Discovering Ohm's Law

**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change

Investigative Processes Video: Scientific Method Overview

Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

#### 6.S.1A.8 Obtain and evaluate scientific information to (1) answer questions, (2) explain or describe phenomena, (3) develop models, (4) evaluate hypotheses, explanations, claims, or designs or (5) identify and/or fill gaps in knowledge. Communicate using the conventions and expectations of scientific writing or oral presentations by (1) evaluating grade-appropriate primary or secondary scientific literature, or (2) reporting the results of student experimental investigations.

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<td>Nature of Science Video: Red Shift and the Expanding Universe</td>
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<td>Document:</td>
<td>Earth's Water Lesson: Ocean Dead</td>
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<tr>
<td>Gooru Webquest</td>
<td>Zones Gooru Webquest</td>
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<td>Gooru Webquest</td>
<td>Astronomy and Space Lesson: The Big Bang</td>
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<td>Earth's Structure Lab: Moving the Continents</td>
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<td>Diversity of Life Lesson: Natural Selection Gooru Webquest</td>
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<td>The Atmosphere Lesson: Ozone Hole Gooru Webquest</td>
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<td>Investigative Processes Image: Surveyor</td>
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<td>Nature of Science Image: Science Teacher</td>
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<td>Nature of Science Image: DNA Sequence</td>
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<td>Nature of Science Interactivity: What Is Scientific Inquiry?</td>
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<td>Nature of Science Interactivity: Scientific Stumbling Blocks</td>
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<td>Nature of Science Interactivity: Reviving the 1918 Virus</td>
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<td>Nature of Science Interactivity: Making Observations of Our Solar System</td>
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<td>Nature of Science Interactivity: A Walk in the Forest</td>
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<td>Investigative Processes Interactivity: Plotting a Line Graph</td>
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<td>Interactive Media Activity: Nature of Science Interactivity: When Science Sparks Controversy</td>
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<td>Nature of Science Image: Human Genome</td>
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<td>Investigative Processes Interactivity: Plotting a Line Graph</td>
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<td>Link: Nature of Science Interactivity: A Student's Guide to Global Climate Change</td>
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<tr>
<td>Nature of Science Interactivity: Scientific Method Lab</td>
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<tr>
<td>Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105</td>
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</table>
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

#### 6.S.1B. Conceptual Understanding:
Technology is any modification to the natural world created to fulfill the wants and needs of humans. The engineering design process involves a series of iterative steps used to solve a problem and often leads to the development of a new or improved technology.

#### Performance Indicators:
Students who demonstrate this understanding can:

**6.S.1B.1** Construct devices or design solutions using scientific knowledge to solve specific problems or needs: (1) ask questions to identify problems or needs, (2) ask questions about the criteria and constraints of the device or solutions, (3) generate and communicate ideas for possible devices or solutions, (4) build and test devices or solutions, (5) determine if the devices or solutions solved the problem and refine the design if needed, and (6) communicate the results.

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<tr>
<td><strong>Assets</strong></td>
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<tr>
<td>Video: Nature of Science Video: GPS Today--Mapping with Satellites</td>
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<td>Nature of Science Video: Fracking for Energy Resources</td>
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<td>Energy Video: Waves of the Future--Electricity from the Ocean?</td>
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<td>Nature of Science Video: Asteroid Mining</td>
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<td>Ecology Video: The Great Macaw Debate</td>
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<td>Nature of Science Video: Mimicking Nature</td>
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<td>Nature of Science Video: Farming the Wind</td>
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<td>Nature of Science Video: Environmental Control on the ISS</td>
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<td>Nature of Science Video: TriATHLETE - The Engineering Design Process in Action</td>
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<td>Nature of Science Video: NASA and a Dinosaur Named Dakota</td>
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<td>Nature of Science Video: Earth's Largest Radio Telescope</td>
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<td>Nature of Science Lab: Storm Safety Forces Video: Remodeling Stonehenge</td>
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<td><strong>Document:</strong> Nature of Science Lab: Branches of Engineering</td>
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<td>Electricity and Magnetism Lab: Detecting Fake Coins</td>
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<td>Investigative Processes Lab: Build a Crystal Radio</td>
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<td>Nature of Science Lab: Advances in Transportation</td>
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<td>Sound Lab: Design and Build Hearing Protectors</td>
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<td>Nature of Science Lab: Designing a Solution</td>
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<td>Earth's Structure Lab: Design a Seismograph</td>
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<td>Natural Resources Lab: Waste Away</td>
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<td>Natural Resources Lab: Design and Build a Solar Cooker</td>
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A Correlation of Pearson OLE, Grades 6-8, to the South Carolina Academic Standards and Performance Indicators for Science

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## South Carolina Academic Standards and Performance Indicators for Science – Grade 6

### EARTH SCIENCE: EARTH’S WEATHER AND CLIMATE

**Standard 6.E.2:** The student will demonstrate an understanding of the interactions within Earth’s systems (flow of energy) that regulate weather and climate.

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<tr>
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<td>Earth’s Structure Video: Beyond</td>
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<td>Video: Trapped Greenhouse</td>
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<td>Gases May Bring Bigger</td>
<td>Earth’s Water Video: Ever</td>
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<td>Storms and Natural</td>
<td>Changing Lake</td>
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<td>Disasters Video: Science</td>
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<td>Sustainability—Sierra</td>
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<td>Weather and Climate Video:</td>
<td>Weather and Climate Lab: Climate</td>
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<td>Melt</td>
<td>Searching for the Perfect</td>
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<td>Weather and Climate Lesson:</td>
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<td>Image: Earth’s Structure</td>
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<td>Image: Carbon and Nitrogen</td>
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<td>Earth’s Water Image:</td>
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<td>Swiss Alps River</td>
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<td>Ecology Image: Ocean</td>
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<td>Ecology Image: Volcanic Gas</td>
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<td>Ecology Interactivity:</td>
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<td>The Extreme Ice Survey</td>
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<td>Nature of Science Image:</td>
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<td>Doppler Radar</td>
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<td>Altocumulus Clouds</td>
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<td>Doppler Radar Station</td>
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Standard 6.E.2: The student will demonstrate an understanding of the interactions within Earth’s systems (flow of energy) that regulate weather and climate.

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<td>Weather and Climate Image: Global Climate Distribution Map</td>
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<td>Weather and Climate Image: Hurricane Katrina Damage</td>
<td>Weather and Climate Image: Hurricane Katrina Damage</td>
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<td>Weather and Climate Image: Nimbostratus Cloud</td>
<td>Weather and Climate Image: Nimbostratus Cloud</td>
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<td>Weather and Climate Image: Ocean Currents Map</td>
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<td>Weather and Climate Image: Ozone Influencers</td>
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<td>Weather and Climate Image: Tornado</td>
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<td>Weather and Climate Image: Tornado Damaged Home</td>
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<td>Weather and Climate Image: Tree Trunk</td>
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**Interactive Media Activity:** Earth's Water Interactivity: Analyzing Data
Earth's Water Interactivity: How Does Groundwater Collect?
Weather and Climate Interactivity: Climate and Temperature
Weather and Climate Interactivity: Climate Change: Causes, Effects, Solutions
Weather and Climate Interactivity: Different Conditions, Different Storms
Weather and Climate Interactivity: El Niño
Weather and Climate Interactivity: Global Winds
Weather and Climate Interactivity: Greenhouse Effect
Weather and Climate Interactivity: How Does Precipitation Form?
Weather and Climate Interactivity: Predicting the Weather
Weather and Climate Interactivity: Types of Clouds
Weather and Climate Interactivity: Weather Fronts
Weather and Climate Interactivity: What Do Temperature and Volume Have to Do with Air Pressure?

**Link:** Interactive Science: Earth Science Online Student Editions, Water and the Atmosphere
Weather and Climate Interactivity: Hurricane Basics
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

**6.E.2A. Conceptual Understanding:** Earth’s atmosphere, an envelope of gases that surround the planet, makes conditions on Earth suitable for living things and influences weather. Water is always moving between the atmosphere (troposphere) and the surface of Earth as a result of the force of gravity and energy from the Sun. The Sun is the driving energy source for heating Earth and for the circulation of Earth’s atmosphere.

**Performance Indicators:** Students who demonstrate this understanding can:

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<th>Performance Indicators</th>
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<tr>
<td><strong>6.E.2A.1</strong> Develop and use models to exemplify the properties of the atmosphere (including the gases, temperature and pressure differences, and altitude changes) and the relative scale in relation to the size of Earth.</td>
<td><strong>Assets</strong>&lt;br&gt;Video: Weather and Climate Video: Gliding Through the Atmosphere&lt;br&gt;Document: The Atmosphere Lesson: Ozone Hole Gooru Webquest&lt;br&gt;Image: Satellite image of Earth’s atmosphere&lt;br&gt;Weather and Climate Image: Ozone Influencers&lt;br&gt;Interactive Media Activity: Weather and Climate Interactivity: Greenhouse Effect&lt;br&gt;Link: Interactive Science: Earth Science Online Student Editions, Water and the Atmosphere, Chapter 3, pp. 74-89</td>
</tr>
</tbody>
</table>
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

**6.E.2A.3** Construct explanations of the processes involved in the cycling of water through Earth’s systems (including transpiration, evaporation, condensation and crystallization, precipitation, and downhill flow of water on land).

### Pearson OLE Online Learning Exchange

**Assets**
- NBC Learn: Water Cycle Video: Sustainability—Sierra Nevada Snow Pack and Snow Melt
- Video: Earth’s Water Video: Water Cyclists
- Earth’s Water Video: Ever Changing Lake
- Document: Weather and Climate Lab: How Clouds Form
- Earth’s Water Lab: Water From Trees

**Image:**
- Ecology Image: Ocean
- Earth’s Water Image: Swiss Alps River
- Ecology Interactivity: The Extreme Ice Survey
- Ecology Image: Icebergs
- Weather and Climate Image: Anvil Cloud
- Weather and Climate Image: Cumulonimbus Cloud
- Weather and Climate Image: Nimbostratus Cloud
- Weather and Climate Image: Stratocumulus Clouds
- Weather and Climate Image: Altostratus Clouds
- Weather and Climate Image: Altocumulus Clouds
- Weather and Climate Image: Cirrus Cloud
- Weather and Climate Image: Cirrostratus Cloud

**Interactive Media Activity:**
- Weather and Climate Interactivity: How Does Precipitation Form?
- Earth’s Water Interactivity: Analyzing Data
- Earth’s Water Interactivity: How Does Groundwater Collect?

**Link:** Interactive Science: Earth Science Online Student Editions, Water and the Atmosphere, Chapter 4, pp. 118-119
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

**6.E.2B. Conceptual Understanding:** The complex patterns of changes and movement of water in the atmosphere determined by winds, landforms, ocean temperatures and currents, and convection are major determinants of local weather patterns and climate. Technology has enhanced our ability to measure and predict weather patterns.

**Performance Indicators:** Students who demonstrate this understanding can:

- **6.E.2B.1** Analyze and interpret data from weather conditions (including wind speed and direction, air temperature, humidity, cloud types, and air pressure), weather maps, satellites, and radar to predict local weather patterns and conditions.

| Assets | Document: Weather and Climate Lesson: Weather Maps Gooru Webquest  
Weather and Climate Lesson: Hurricanes Gooru Webquest  
Weather and Climate Lab: Reading a Weather Map  
Weather and Climate Lab: Where Do Hurricanes Come From?  
Image: Nature of Science Image: Doppler Radar  
Weather and Climate Image: Doppler Radar Station  
Weather and Climate Image: Satellite Image of Earth's atmosphere.  
Weather and Climate Image: Warm and Cold Fronts  
Weather and Climate Image: Hurricane from Satellite  
Interactive Media Activity: Weather and Climate Interactivity: What Do Temperature and Volume Have to Do with Air Pressure?  
Weather and Climate Interactivity: El Niño  
Weather and Climate Interactivity: Different Conditions, Different Storms  
Weather and Climate Interactivity: Predicting the Weather  
Weather and Climate Interactivity: Weather Fronts  
Link: Weather and Climate Interactivity: Hurricane Basics  
Interactive Science: Earth Science Online Student Editions, Water and the Atmosphere, Chapter 4, pp. 114-161 |
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<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 6</th>
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</table>
| **6.E.2B.2** Develop and use models to explain how relationships between the movement and interactions of air masses, high and low pressure systems, and frontal boundaries result in weather conditions and storms (including thunderstorms, hurricanes and tornadoes). | **Assets**
| **NBC Learn:** Climate Change Video: Trapped Greenhouse Gases May Bring Bigger Storm Surges to U.S.  
Storms and Natural Disasters Video: Science Behind the News—Tornadoes  
**Video:** Weather and Climate Video: Twisted Adventures  
**Document:** The Atmosphere Lesson: Heat Transfer Gooru Webquest  
Earth’s Water Lesson: El Nino Gooru Webquest  
Weather and Climate Lesson: Hurricanes Gooru Webquest  
Weather and Climate Lab: Reading a Weather Map  
Weather and Climate Lab: Where Do Hurricanes Come From?  
**Image:** Nature of Science Image: Doppler Radar  
Weather and Climate Image: Anvil Cloud  
Weather and Climate Image: Cumulonimbus Cloud  
Weather and Climate Image: Nimbostratus Cloud  
Weather and Climate Image: Stratocumulus Clouds  
Weather and Climate Image: Altostratus Clouds  
Weather and Climate Image: Altocumulus Clouds  
Weather and Climate Image: Cirrus Cloud  
Weather and Climate Image: Cirrocumulus Cloud  
Weather and Climate Image: Tornado Damaged Home  
Weather and Climate Image: Satellite Image of Earth's atmosphere.  
Weather and Climate Image: Warm and Cold Fronts  
Weather and Climate Image: Hurricane from Satellite  
Weather and Climate Image: Hurricane Katrina Damage  
Weather and Climate Image: Tornado  
**Interactive Media Activity:** Weather and Climate Interactivity: What Do Temperature and Volume Have to Do with Air Pressure?  
Weather and Climate Interactivity: El Niño  
Weather and Climate Interactivity: Different Conditions, Different Storms  
Weather and Climate Interactivity: Predicting the Weather  
Weather and Climate Interactivity: Weather Fronts  
Weather and Climate Interactivity: Types of Clouds |
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<tr>
<td><strong>6.E.2B.2</strong> Develop and use models to explain how relationships between the movement and interactions of air masses, high and low pressure systems, and frontal boundaries result in weather conditions and storms (including thunderstorms, hurricanes and tornadoes).</td>
<td><strong>(Continued)</strong>&lt;br&gt;<strong>Link:</strong> Weather and Climate Interactivity: Hurricane Basics&lt;br&gt;Interactive Science: Earth Science Online Student Editions, Water and the Atmosphere, Chapter 4, pp. 132-139</td>
</tr>
<tr>
<td><strong>6.E.2B.3</strong> Develop and use models to represent how solar energy and convection impact Earth’s weather patterns and climate conditions (including global winds, the jet stream, and ocean currents).</td>
<td><strong>Assets</strong>&lt;br&gt;<strong>Document:</strong> Earth’s Water Lesson: El Nino Gooru Webquest&lt;br&gt;Weather and Climate Lesson: Hurricanes Gooru Webquest&lt;br&gt;Earth’s Water Lesson: El Nino Gooru Webquest&lt;br&gt;<strong>Image:</strong> Weather and Climate Image: Satellite Image of Earth’s atmosphere.&lt;br&gt;Weather and Climate Image: Ocean Currents Map&lt;br&gt;Weather and Climate Image: Hurricane from Satellite&lt;br&gt;<strong>Interactive Media Activity:</strong> Weather and Climate Interactivity: El Niño&lt;br&gt;Weather and Climate Interactivity: Climate Change: Causes, Effects, Solutions&lt;br&gt;Weather and Climate Interactivity: Climate and Temperature&lt;br&gt;Weather and Climate Interactivity: Global Winds&lt;br&gt;<strong>Link:</strong> Interactive Science: Earth Science Online Student Editions; Water and the Atmosphere, Chapter 2, p. 55; Chapter 3, pp. 98-99; Chapter 4, p. 135</td>
</tr>
<tr>
<td><strong>6.E.2B.4</strong> Construct explanations for how climate is determined in an area (including latitude, elevation, shape of the land, distance from water, global winds, and ocean currents).</td>
<td><strong>Assets</strong>&lt;br&gt;<strong>Video:</strong> Weather and Climate Video: Searching for the Perfect Climate&lt;br&gt;<strong>Document:</strong> Weather and Climate Lab: Climate Clues&lt;br&gt;Earth’s Water Lesson: El Nino Gooru Webquest&lt;br&gt;<strong>Image:</strong> Ecology Image: Ocean&lt;br&gt;Weather and Climate Image: Tree Trunk&lt;br&gt;Weather and Climate Image: Ocean Currents Map&lt;br&gt;Weather and Climate Image: Global Climate Distribution Map&lt;br&gt;<strong>Interactive Media Activity:</strong> Weather and Climate Interactivity: Climate Change: Causes, Effects, Solutions&lt;br&gt;Weather and Climate Interactivity: Climate and Temperature&lt;br&gt;Weather and Climate Interactivity: Global Winds&lt;br&gt;<strong>Link:</strong> Interactive Science: Earth Science Online Student Editions, Water and the Atmosphere, Chapter 5, pp. 162-189</td>
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### PHYSICAL SCIENCE: ENERGY TRANSFER AND CONSERVATION

**Standard 6.P.3:** The student will demonstrate an understanding of the properties of energy, the transfer and conservation of energy, and the relationship between energy and forces.

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<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 6</th>
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</table>
| **Assets** | **Video:** Electricity and Magnetism Video: Magnetism: What's the Attraction?  
Electricity and Magnetism Video: The Power of Pedaling (Part 1)  
Electricity and Magnetism Video: The Power of Pedaling (Part 2)  
Energy Video: Energy From the Sun (Part 1)  
Energy Video: Energy From the Sun (Part 2)  
Energy Video: Why Is This Inner Tube So Hot?  
Energy Video: Work, Force, Energy and Motion  
Forces Video: Remodeling Stonehenge  
**Document:** Electricity and Magnetism Image: Electromagnetic Experiment  
Electricity and Magnetism Lab: Electrons and Magnetism  
Energy Lab: Investigating Power  
Energy Lab: Law of Conservation of Energy  
The Atmosphere Lesson: Heat Transfer Gooru Webquest  
**Image:** Electricity and Magnetism Image: Circuit  
Electricity and Magnetism Image: Commercial Electromagnet  
Electricity and Magnetism Image: Electric Circuit  
Electricity and Magnetism Image: Electric Motor  
Electricity and Magnetism Image: Electromagnetic Experiment  
Electricity and Magnetism Image: Lab Electromagnet  
Electricity and Magnetism Image: Magnet Attracting Paper Clips  
Electricity and Magnetism Image: Magnetic Field  
Energy Image: Boiling Water  
Energy Image: Convection Heating  
Energy Image: Lightning  
Energy Image: Pole Vaulting  
Energy Image: Roller Coaster Energy  
Energy Image: Rollercoaster  
Energy Image: Skateboarding Competition  
Energy Image: Swinging Pendulum  
Energy Image: Trampoline  
Forces Image: Apple Peeler  
Forces Image: Chopsticks  
Forces Image: Lever  
Forces Image: Newton’s Cradle  
Forces Image: Nutcracker  
Forces Image: Pulley  
Forces Image: Rube Goldberg Machine  
Forces Image: See-Saw  
Forces Image: Tow Truck  
Forces Image: Wheelchair on Ramp  
Matter Image: Neon Sign |
A Correlation of Pearson OLE, Grades 6-8, to the South Carolina Academic Standards and Performance Indicators for Science

<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 6</th>
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</thead>
<tbody>
<tr>
<td><strong>6.P.3A. Conceptual Understanding:</strong> Energy manifests itself in multiple forms, such as mechanical (kinetic energy and potential energy), electrical, chemical, radiant (solar), and thermal energy. According to the principle of conservation of energy, energy cannot be created nor destroyed, but it can be transferred from one place to another and transformed between systems.</td>
<td><strong>Performance Indicators:</strong> Students who demonstrate this understanding can:</td>
</tr>
</tbody>
</table>

**6.P.3A.1** Analyze and interpret data to describe the properties and compare sources of different forms of energy (including mechanical, electrical, chemical, radiant, and thermal).

- **Assets**
  - **Video:** Energy Video: Why Is This Inner Tube So Hot?
  - Energy Video: Energy From the Sun (Part 1)
  - Energy Video: Energy From the Sun (Part 2)
  - Electricity and Magnetism Video: The Power of Pedaling (Part 2)
  - **Document:** Energy Lab: Investigating Power
  - **Image:** Matter Image: Neon Sign
  - Energy Image: Convection Heating
  - Energy Image: Boiling Water
  - Energy Image: Lightning
  - **Interactive Media Activity:** Energy
  - Energy Interactivity: Types of Energy
  - **Link:** Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 4, pp. 114-119

**6.P.3A.2** Develop and use models to exemplify the conservation of energy as it is transformed from kinetic to potential (gravitational and elastic) and vice versa.

- **Assets**
  - **Video:** Energy Video: Why Is This Inner Tube So Hot?
  - Energy Video: Work, Force, Energy and Motion
  - **Document:** Energy Lab: Law of Conservation of Energy
  - **Image:** Energy Image: Rollercoaster
  - Energy Image: Roller Coaster Energy
  - Energy Image: Swinging Pendulum
  - Energy Image: Skateboarding Competition
  - Energy Image: Pole Vaulting
  - Energy Image: Trampoline
  - Forces Image: Newton's Cradle
  - **Interactive Media Activity:** Energy
  - Energy Interactivity: Energy Transformations
  - Energy Interactivity: Kinetic and Potential Energy
  - Energy Interactivity: Roller Coaster Physics
  - **Link:** Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 4, pp. 124-125
<table>
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</table>
| 6.P.3A.3 Construct explanations for how energy is conserved as it is transferred and transformed in electrical circuits. | **Assets**
Image: Electricity and Magnetism Image: Magnet Attracting Paper Clips
Electricity and Magnetism Image: Circuit
Electricity and Magnetism Image: Electric Circuit
Electricity and Magnetism Image: Electric Motor
**Interactive Media Activity:** Electricity and Magnetism Interactivity: Discovering Ohm’s Law
Electricity and Magnetism Interactivity: Conductors and Insulators
Electricity and Magnetism Interactivity: Series and Parallel Circuits
Electricity and Magnetism Interactivity: Electric Current
Electricity and Magnetism Interactivity: Changing Circuits
**Link:** Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 6, pp. 174-181 |
| 6.P.3A.4 Develop and use models to exemplify how magnetic fields produced by electrical energy flow in a circuit is interrelated in electromagnets, generators, and simple electrical motors. | **Assets**
Video: Electricity and Magnetism Video: Magnetism: What’s the Attraction?
Electricity and Magnetism Video: The Power of Pedaling (Part 1)
Electricity and Magnetism Video: The Power of Pedaling (Part 2)
**Document:** Electricity and Magnetism Image: Electromagnetic Experiment
Electricity and Magnetism Lab: Electrons and Magnetism
Image: Electricity and Magnetism Image: Lab Electromagnet
Electricity and Magnetism Image: Commercial Electromagnet
Electricity and Magnetism Image: Magnetic Field
Electricity and Magnetism Image: Magnet Attracting Paper Clips
Electricity and Magnetism Image: Electric Motor
Electricity and Magnetism Image: Electromagnetic Experiment |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

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| **6.P.3A.4** Develop and use models to exemplify how magnetic fields produced by electrical energy flow in a circuit is interrelated in electromagnets, generators, and simple electrical motors. | **(Continued)**
| **Interactive Media Activity:** Electricity and Magnetism Interactivity: Exploring Electromagnetism Electricity and Magnetism Interactivity: Motors and Generators Electricity and Magnetism Interactivity: Electric Current Electricity and Magnetism Interactivity: Changing Circuits Electricity and Magnetism Interactivity: Faraday's Law **Link:** Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 7, pp. 206-225 |
| **6.P.3A.5** Develop and use models to describe and compare the directional transfer of heat through convection, radiation, and conduction. | **Assets**
| **6.P.3A.6** Design and test devices that minimize or maximize heat transfer by conduction, convection, or radiation. | **Assets**
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

**6.P.3B. Conceptual Understanding:** Energy transfer occurs when two objects interact thereby exerting force on each other. It is the property of an object or a system that enables it to do work (force moving an object over a distance). Machines are governed by this application of energy, work, and conservation of energy.

**Performance Indicators:** Students who demonstrate this understanding can:

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<tr>
<td><strong>LIFE SCIENCE: DIVERSITY OF LIFE – CLASSIFICATION AND ANIMALS</strong></td>
<td><strong>Assets</strong></td>
</tr>
</tbody>
</table>
| **Standard 6.L.4:** The student will demonstrate an understanding of how scientists classify organisms and how the structures, processes, behaviors, and adaptations of animals allow them to survive. | **NBC Learn:** Animal Behavior Video: Are Elephants Smarter than a 5th Grader?  
Classification Video: Marine Census Finds Thousands of New (and Weird) Sea Creatures  
Types of Animals Video: Namibia’s Unique Wildlife  
**Video:** Animals Video: Eating Like an Animal  
Animals Video: Elephant Herd at Waterhole  
Animals Video: Is That Dance Just for Me?  
Animals Video: Science in a Bat Cave  
Ecology Video: Black Bear Hibernation  
Ecology Video: Mass Strandings  
Evolution Video: Finned Kin  
Plants Video: Know Your Plants  
**Document:** Animals Lab: Compare Nervous Systems  
Animals Lab: One for All  
**Image:** Animals Image: Armadillo  
Animals Image: Armadillo Defenses  
Animals Image: Bee Eater  
Animals Image: Bee Swarm  
Animals Image: Bison Rut Season  
Animals Image: Brood Parasite  
Animals Image: Brown Bats  
Animals Image: Capuchin Using a Tool  
Animals Image: Central Newt  
Animals Image: Emperor Penguin and Chick  
Animals Image: Glass Frog Eggs  
Animals Image: Horseshoe Crabs  
Animals Image: Howler Monkey  
Animals Image: Killer Whales  
Animals Image: Leaf-Cutter Ants  
Animals Image: Manatees Eating  
Animals Image: Mole Hill  
Animals Image: Nesting House Mice  
Animals Image: Oxpeckers on Antelope  
Animals Image: Peacock Flounder  
Animals Image: Pink Comb Jellyfish  
Animals Image: Predator  
Animals Image: Queen Bee  
Animals Image: Reindeer Herd  
Animals Image: Remoras  
Animals Image: Ruff  
Animals Image: Salamander  
Animals Image: Sardine Run  
Animals Image: Sea Otter  
Animals Image: Sea Turtle Flipper  
Animals Image: Spider Web  
Animals Image: Striped Burrfish  
Animals Image: Village Weaver  
Animals Image: Water Snake |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

**Standard 6.L.4:** The student will demonstrate an understanding of how scientists classify organisms and how the structures, processes, behaviors, and adaptations of animals allow them to survive.

### Pearson OLE Online Learning Exchange

**Interactive Media Activity:** Animals
- Animals Image: Willow Ptarmigan
- Cells Image: Hemoglobin
- Earth's Surface Image: Stromatolites
- Ecology Image: Coyote Prey
- Ecology Image: Cranes Roosting
- Ecology Image: Migrating Caribou
- Ecology Image: Taiga Lynx
- Ecology Image: Turtle Predation
- Ecosystems Image: Blue Crab in Chesapeake Bay
- Evolution Image: Sharp-beaked Ground Finch
- Plants Image: Fiddlehead
- Plants Image: Horsetail
- Plants Image: Lichen
- Plants Image: Liverworts
- Plants Image: Oak
- Plants Image: Thallose Liverwort

**Interactive Media Activity:** Diversity of Life
- Diversity of Life Interactivity: Comparing Structures
- Diversity of Life Interactivity: Finding a Common Ancestor
- Diversity of Life Interactivity: Introduction to Classifying Life
- Plants Interactivity: Classifying Plants
- Plants Interactivity: Plant and Animal Cells
- Plants Interactivity: Types of Plants

**Interactive Media Activity:** Plants
- Plants Image: Fiddlehead
- Plants Image: Horsetail
- Plants Image: Lichen
- Plants Image: Liverworts
- Plants Image: Oak
- Plants Image: Thallose Liverwort

**Interactive Media Activity:** Cells
- Cells Image: Hemoglobin

**Interactive Media Activity:** Evolution
- Evolution Image: Sharp-beaked Ground Finch

**Interactive Media Activity:** Interactive Science: Life Science Online Student Editions, Diversity of Life
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

#### 6.L.4A. Conceptual Understanding:
Life is the quality that differentiates living things (organisms) from nonliving objects or those that were once living. All organisms are made up of cells, need food and water, a way to dispose of waste, and an environment in which they can live. Because of the diversity of life on Earth, scientists have developed a way to organize groups of organisms according to their characteristic traits, making it easier to identify and study them.

**Performance Indicators:** Students who demonstrate this understanding can:

<table>
<thead>
<tr>
<th>6.L.4A.1</th>
<th>Obtain and communicate information to support claims that living organisms (1) obtain and use resources for energy, (2) respond to stimuli, (3) reproduce, and (4) grow and develop.</th>
</tr>
</thead>
</table>

**Assets**
- **NBC Learn:** Types of Animals Video: Namibia’s Unique Wildlife
- **Video:** Animals Video: Eating Like an Animal
- **Image:** Animals Image: Remoras
- Animals Image: Sea Otter
- Animals Image: Salamander
- Animals Image: Willow Ptarmigan
- Animals Image: Bison Rut Season
- Animals Image: Glass Frog Eggs
- Animals Image: Water Snake
- Ecology Image: Coyote Prey
- Ecology Image: Turtle Predation
- Animals Image: Spider Web
- Animals Image: Central Newt
- Animals Image: Killer Whales
- Animals Image: Emperor Penguin and Chick
- Plants Image: Lichen

**Link:** Animals Image: Bee Swarm

Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapters 5-7
<table>
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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 6</th>
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</table>
| 6.L.4A.2 Develop and use models to classify organisms based on the current hierarchical taxonomic structure (including the kingdoms of protists, plants, fungi, and animals). | **Assets**  
**NBC Learn:** Classification Video: Marine Census Finds Thousands of New (and Weird) Sea Creatures  
**Video:** Evolution Video: Finned Kin  
Plants Video: Know Your Plants  
**Image:** Earth’s Surface Image: Stromatolites  
Plants Image: Horsetail  
Plants Image: Thallose Liverwort  
Plants Image: Liverworts  
Plants Image: Fiddlehead  
Plants Image: Oak  
**Interactive Media Activity:** Animals  
Interactivity: Classifying Animals  
Diversity of Life Interactivity: Comparing Structures  
Diversity of Life Interactivity: Finding a Common Ancestor  
Diversity of Life Interactivity: Introduction to Classifying Life  
Plants Interactivity: Classifying Plants  
Plants Interactivity: Types of Plants  
Cells Interactivity: Prokaryotic and Eukaryotic Cells  
**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapters 1-4, pp. 1-169 |
<table>
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<tr>
<td><strong>6.L.4B. Conceptual Understanding:</strong> The Animal Kingdom includes a diversity of organisms that have many characteristics in common. Classification of animals is based on structures that function in growth, reproduction, and survival. Animals have both structural and behavioral adaptations that increase the chances of reproduction and survival in changing environments.</td>
<td></td>
</tr>
<tr>
<td><strong>Performance Indicators:</strong> Students who demonstrate this understanding can:</td>
<td></td>
</tr>
</tbody>
</table>
| **6.L.4B.1** Analyze and interpret data related to the diversity of animals to support claims that all animals (vertebrates and invertebrates) share common characteristics. | **Assets**
Document: Animals Lab: Compare Nervous Systems
Image: Ecosystems Image: Blue Crab in Chesapeake Bay
Animals Image: Pink Comb Jellyfish
Cells Image: Hemoglobin
Animals Image: Howler Monkey
Animals Image: Glass Frog Eggs
Animals Image: Armadillo
Animals Image: Spider Web
Animals Image: Killer Whales
Animals Image: Horseshoe Crabs
Animals Image: Bee Swarm
**Interactive Media Activity:** Animals
Interactivity: Classifying Animals
Animals Interactivity: Types of Animals
Plants Interactivity: Plant and Animal Cells
**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 1 pp. 1-29 |
<table>
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</table>
| 6.L.4B.2 Obtain and communicate information to explain how the structural adaptations and processes of animals allow for defense, movement, or resource obtainment. | **Assets**
- NBC Learn: Types of Animals Video: Namibia's Unique Wildlife
- Video: Animals Video: Science in a Bat Cave
- Image: Animals Image: Remoras
- Animals Image: Sea Otter
- Ecosystems Image: Blue Crab in Chesapeake Bay
- Animals Image: Pink Comb Jellyfish
- Animals Image: Striped Burrfish
- Animals Image: Peacock Flounder
- Animals Image: Armadillo Defenses
- Animals Image: Leaf-Cutter Ants
- Animals Image: Bee Eater
- Animals Image: Howler Monkey
- Animals Image: Armadillo
- Animals Image: Mole Hill
- Animals Image: Nesting House Mice
- Animals Image: Water Snake
- Ecology Image: Coyote Prey
- Ecology Image: Turtle Predation
- Animals Image: Spider Web
- Evolution Image: Sharp-beaked Ground Finch
- Animals Image: Queen Bee
- Animals Image: Sea Turtle Flipper
- Animals Image: Manatees Eating
- Animals Image: Brown Bear

**Interactive Media Activity:** Animals Video: Eating Like an Animal
- Animals Interactivity: Animal Defense Strategies

**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapters 5-7, pp. 174-279
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

<table>
<thead>
<tr>
<th>6.L.4B.3 Construct explanations of how animal responses (including hibernation, migration, grouping, and courtship) to environmental stimuli allow them to survive and reproduce.</th>
</tr>
</thead>
</table>

### Pearson OLE Online Learning Exchange

**Assets**
- NBC Learn: Types of Animals Video: Namibia's Unique Wildlife
- Video: Ecology Video: Mass Strandings
- Animals Video: Elephant Herd at Waterhole
- Animals Video: Is That Dance Just for Me?
- Animals Video: Science in a Bat Cave
- Image: Animals Image: Sardine Run
- Animals Image: Striped Burrfish
- Animals Image: Bison Rut Season
- Animals Image: Leaf-Cutter Ants
- Animals Image: Brown Bats
- Animals Image: Nesting House Mice
- Animals Image: Reindeer Herd
- Ecology Image: Cranes Roosting
- Animals Image: Village Weaver
- Animals Image: Bee Swarm
- Ecology Image: Taiga Lynx
- Animals Image: Oxpeckers on Antelope
- Animals Image: Queen Bee
- Ecology Image: Migrating Caribou

**Interactive Media Activity:**
- Animals Interactivity: Predicting Animal Behavior
- Animals Interactivity: Animal Behavior
- Animals Lab: One for All

**Link:**
- Animals Video: How Smart Are Dogs?
- Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 7, pp. 262-279
<table>
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</table>
| **6.L.4B.4** Obtain and communicate information to compare and classify innate and learned behaviors in animals. | **Assets**  
**NBC Learn:** Animal Behavior Video: Are Elephants Smarter than a 5th Grader?  
**Video:** Animals Video: Is That Dance Just for Me?  
**Image:** Animals Image: Sardine Run  
Animals Image: Sea Otter  
Animals Image: Peacock Flounder  
Animals Image: Bison Rut Season  
Animals Image: Leaf-Cutter Ants  
Animals Image: Glass Frog Eggs  
Animals Image: Nesting House Mice  
Animals Image: Spider Web  
Animals Image: Reindeer Herd  
Animals Image: Village Weaver  
Animals Image: Ruff  
Animals Image: Predator  
Animals Image: Emperor Penguin and Chick  
Animals Image: Queen Bee  
Animals Image: Capuchin Using a Tool  
Animals Image: Brood Parasite  
**Interactive Media Activity:** Animals  
Interactivity: Predicting Animal Behavior  
Animals Interactivity: Animal Behavior  
**Link:** Animals Video: How Smart Are Dogs?  
Animals Interactivity: Pavlov's Dog  
Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 7, pp. 262-279 |
| **6.L.4B.5** Analyze and interpret data to compare how endothermic and ectothermic animals respond to changes in environmental temperature. | **Assets**  
**NBC Learn:** Types of Animals Video: Namibia's Unique Wildlife  
**Video:** Ecology Video: Black Bear Hibernation  
**Image:** Animals Image: Brown Bats  
Animals Image: Nesting House Mice  
Animals Image: Queen Bee  
**Interactive Media Activity:** Animals  
Interactivity: Where Could They Live?  
Animals Interactivity: Predicting Animal Behavior  
**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 4, p. 157 |
## LIFE SCIENCE: DIVERSITY OF LIFE – PROTISTS, FUNGI AND PLANTS

**Standard 6.L.5:** The student will demonstrate an understanding of the structures, processes, and responses that allow protists, fungi, and plants to survive and reproduce.

<table>
<thead>
<tr>
<th>Assets</th>
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</thead>
<tbody>
<tr>
<td><strong>Video:</strong> Cells Video: Yum...Eating Solar Energy</td>
</tr>
<tr>
<td>Plants Video: Amazing Plant Defenses</td>
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<tr>
<td>Plants Video: Plants Inside and Out</td>
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<tr>
<td>Plants Video: Water Lily Blooming</td>
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<tr>
<td>Viruses, Fungi, and Microorganisms Video:</td>
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<tr>
<td>Blooming Mushrooms</td>
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<tr>
<td>Viruses, Fungi, and Microorganisms Video:</td>
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<tr>
<td>Euglena</td>
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<tr>
<td>Viruses, Fungi, and Microorganisms Video:</td>
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<tr>
<td>Feeding Gastrotrich</td>
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<tr>
<td>Viruses, Fungi, and Microorganisms Video:</td>
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<tr>
<td>Rotting Strawberries</td>
</tr>
<tr>
<td>Viruses, Fungi, and Microorganisms Video:</td>
</tr>
<tr>
<td>Slime Mold Feeding</td>
</tr>
<tr>
<td><strong>Document:</strong> Earth's Water Lab: Water From Trees</td>
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<tr>
<td>Ecology Lab: Carbon and Oxygen Blues</td>
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<td><strong>Image:</strong> Earth's Surface Image: Stromatolite Structure</td>
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<tr>
<td>Earth's Surface Image: Stromatolites</td>
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<tr>
<td>Ecology Image: Acacia Tree</td>
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<td>Plants Image: Cacti</td>
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<td>Plants Image: Cattails</td>
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<tr>
<td>Plants Image: Coconut Seed Sprouting</td>
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<td>Plants Image: Cotton Plant</td>
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<td>Plants Image: Dandelion</td>
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<td>Plants Image: Fern Fossil</td>
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<td>Plants Image: Fiddlehead</td>
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<td>Plants Image: Fireweed</td>
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<td>Plants Image: Ginkgo Tree Fruit</td>
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<td>Plants Image: Horsetail</td>
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<td>Plants Image: Indian Pipe</td>
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<td>Plants Image: Kelp</td>
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<td>Plants Image: Kudzu</td>
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<td>Plants Image: Leaf Patterns</td>
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<td>Plants Image: Leaf Structure</td>
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<td>Plants Image: Lemon Leaves</td>
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<td>Plants Image: Lichen</td>
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<td>Plants Image: Liverworts</td>
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<td>Plants Image: Lotus</td>
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<td>Plants Image: Mangroves</td>
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<td>Plants Image: Milkweed</td>
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<td>Plants Image: Moss</td>
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<td>Plants Image: Nasturtium Stem</td>
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<td>Plants Image: Oak</td>
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<td>Plants Image: Organ Pipe Cacti</td>
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<td>Plants Image: Palmate Leaf</td>
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<td>Plants Image: Phototropism</td>
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<td>Plants Image: Pinnate Leaves</td>
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<td>Plants Image: Pitcher Plant</td>
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<td><strong>LIFE SCIENCE: DIVERSITY OF LIFE – PROTISTS, FUNGI AND PLANTS</strong></td>
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<tr>
<td><strong>Standard 6.L.5:</strong> The student will demonstrate an understanding of the</td>
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<tr>
<td>structures, processes, and responses that allow protists, fungi, and plants</td>
<td></td>
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<tr>
<td>to survive and reproduce.</td>
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**Standard 6.L.5:** The student will demonstrate an understanding of the structures, processes, and responses that allow protists, fungi, and plants to survive and reproduce.

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<td><strong>(Continued)</strong> Interactive Media Activity: Cells Interactivity: Cellular Respiration Cells Interactivity: Opposite Processes Cells Interactivity: The Cell as a Living Factory Cells Interactivity: The Inner Workings of Photosynthesis Plants Interactivity: Plant Processes and Structures Plants Interactivity: Plant Tropisms Plants Interactivity: Types of Plants <strong>Link:</strong> Interactive Science: Life Science Online Student Editions, Diversity of Life</td>
<td></td>
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</table>
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

**6.L.5A. Conceptual Understanding:** The Protist Kingdom is one of the most diverse groups and includes organisms that have characteristics similar to but are not classified as plants, animals, or fungi. These microorganisms live in moist environments and vary in how they obtain energy and move. The Fungi Kingdom consists of organisms that do not make their own food (heterotrophs) but obtain their nutrition through external absorption. Fungi can be grouped by their growth habit or fruiting structure and respond to changes in the environmental stimuli similar to plants.

**Performance Indicators:** Students who demonstrate this understanding can:

**6.L.5A.1** Analyze and interpret data from observations to compare how the structures of protists (including euglena, paramecium, and amoeba) and fungi allow them to obtain energy and explore their environment.

| **Assets** | **Video:** Viruses, Fungi, and Microorganisms Video: Slime Mold Feeding  
Videos, Fungi, and Microorganisms Video: Blooming Mushrooms  
Videos, Fungi, and Microorganisms Video: Feeding Gastrotrich  
Videos, Fungi, and Microorganisms Video: Rotting Strawberries  
Videos, Fungi, and Microorganisms Video: Euglena  
**Image:** Viruses, Fungi, and Microorganisms Image: Bracket Fungi  
Earth’s Surface Image: Stromatolites  
Earth’s Surface Image: Stromatolite Structure  
Viruses, Fungi, and Microorganisms Image: Bird Nest Fungi  
Viruses, Fungi, and Microorganisms Image: Puffball  
Viruses, Microorganisms and Fungi Image: Tardigrade  
Viruses, Fungi, and Microorganisms Image: Penicillium  
Viruses, Fungi, and Microorganisms Image: Yogurt Cultures  
Viruses, Fungi, and Microorganisms Image: Moldy Orange  
Viruses, Fungi, and Microorganisms Image: Truffle  
Viruses, Fungi, and Microorganisms Image: Staphylococcus  
Viruses, Fungi, and Microorganisms Video: Rotting Strawberries  
Plants Image: Lichen  
**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 2, pp. 36-73 |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 6

<table>
<thead>
<tr>
<th><strong>6.L.5A.2</strong> Analyze and interpret data to describe how fungi respond to external stimuli (including temperature, light, touch, water, and gravity).</th>
<th><strong>Pearson OLE Online Learning Exchange</strong></th>
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<tbody>
<tr>
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<tr>
<td><strong>6.L.5B. Conceptual Understanding:</strong> The Plant Kingdom consists of organisms that primarily make their own food (autotrophs) and are commonly classified based on internal structures that function in the transport of food and water. Plants have structural and behavioral adaptations that increase the chances of reproduction and survival in changing environments.</td>
<td></td>
</tr>
<tr>
<td><strong>Performance Indicators:</strong> Students who demonstrate this understanding can:</td>
<td></td>
</tr>
</tbody>
</table>
| **6.L.5B.1** Construct explanations of how the internal structures of vascular and nonvascular plants transport food and water. | **Assets**  
Video: Plants Video: Plants Inside and Out  
Document: Earth's Water Lab: Water From Trees  
Image: Plants Image: Horsetail  
Plants Image: Thallose Liverwort  
Plants Image: Liverworts  
Plants Image: Stone Plants  
Plants Image: Pitcher Plant  
Plants Image: Fern Fossil  
Plants Image: Rain Forest Moss  
Plants Image: Moss  
Plants Image: Nasturtium Stem  
Plants Image: Leaf Patterns  
Plants Image: Mangroves  
Plants Image: Lemon Leaves  
Plants Image: Organ Pipe Cacti  
Plants Image: Plant Cells  
**Interactive Media Activity:** Plants Interactivity: Plant Processes and Structures  
Cells Interactivity: The Inner Workings of Photosynthesis  
Plants Interactivity: Types of Plants  
**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 3, pp. 100-109  |
| **6.L.5B.2** Analyze and interpret data to explain how the processes of photosynthesis, respiration, and transpiration work together to meet the needs of plants. | **Assets**  
Video: Cells Video: Yum...Eating Solar Energy  
Document: Ecology Lab: Carbon and Oxygen Blues  
Image: Plants Image: Plant Cell  
Plants Image: Plant  
Plants Image: Plant Cell Diagram  
Plants Image: Leaf Structure  
Plants Image: Palmate Leaf  
**Interactive Media Activity:** Cells Interactivity: The Inner Workings of Photosynthesis  
Plants Interactivity: Plant Processes and Structures  
Cells Interactivity: The Inner Workings of Photosynthesis  
Cells Interactivity: Opposite Processes  
Cells Interactivity: The Inner Workings of Photosynthesis  
Cells Interactivity: Cellular Respiration  
Cells Interactivity: The Cell as a Living Factory  
**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 3, pp. 100-123  |
<table>
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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 6</th>
<th>Pearson OLE Online Learning Exchange</th>
</tr>
</thead>
</table>
| **6.L.5B.3** Develop and use models to compare structural adaptations and processes that flowering plants use for defense, survival and reproduction. | **Assets**  
Video: Plants Video: Plants Inside and Out  
Plants Video: Water Lily Blooming  
Plants Video: Amazing Plant Defenses  
**Image:** Plants Image: Stone Plants  
Plants Image: Pitcher Plant  
Plants Image: Kudzu  
Ecology Image: Acacia Tree  
Plants Image: Fireweed  
Plants Image: Cacti  
Plants Image: Pollination  
Plants Image: Dandelion  
Plants Image: Coconut Seed Sprouting  
Plants Image: Nasturtium Stem  
Plants Video: Tulips Blooming  
Plants Image: Spiny Cocklebur  
Plants Image: Ginkgo Tree Fruit  
Plants Image: Cotton Plant  
Plants Image: Mangroves  
Plants Image: Lemon Leaves  
Plants Image: Rafflesia  
Plants Image: Venus Flytrap  
Plants Image: Organ Pipe Cacti  
Plants Image: Fiddlehead  
Plants Image: Oak  
Plants Image: Strangler Fig  
Plants Image: Kelp  
Plants Image: Lotus  
Plants Image: Lichen  
Plants Image: Milkweed  
Plants Image: Pinnate Leaves  
Plants Image: Spanish Moss  
Plants Image: Cattails  
Plants Image: Plant Growth  
Plants Image: Tulip Bulb  
Plants Image: Indian Pipe  
Plants Image: Leaf Structure  
**Interactive Media Activity:** Plants  
Interactivity: Plant Processes and Structures  
Interactivity: Types of Plants  
**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 3, pp. 100-123
<table>
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</thead>
</table>
| **6.L.5B.4** Plan and conduct controlled scientific investigations to determine how changes in environmental factors (such as air, water, light, minerals, or space) affect the growth and development of a flowering plant. | **Assets**
- NBC Learn: Plant Structure and Function Video: Chemistry of Changing Leaves
- **Video**: Plants Video: Water Lily Blooming
- **Image**: Plants Image: Stone Plants
- Plants Image: Pitcher Plant
- Plants Image: Kudzu
- Ecology Image: Acacia Tree
- Weather and Climate Image: Tree Trunk
- Plants Image: Fireweed
- Plants Image: Cacti
- Plants Image: Plant
- Plants Image: Coconut Seed Sprouting
- Plants Video: Tulips Blooming
- **Interactive Media Activity**: Plants
- Interactivity: Plant Tropisms
- **Link**: Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 3, pp. 118-123 |
| **6.L.5B.5** Analyze and interpret data to describe how plants respond to external stimuli (including temperature, light, touch, water, and gravity). | **Assets**
- **Video**: Plants Video: Water Lily Blooming
- **Image**: Plants Image: Phototropism
- Plants Image: Stone Plants
- Plants Image: Pitcher Plant
- Plants Image: Cacti
- **Link**: Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 3, pp. 118-123 |
<table>
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<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</th>
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<tbody>
<tr>
<td><strong>GRADE SEVEN</strong></td>
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<tr>
<td><strong>SCIENCE AND ENGINEERING PRACTICES</strong></td>
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</tr>
<tr>
<td><strong>NOTE</strong>: Scientific investigations should always be done in the context of content knowledge expected at this grade level. The standard describes how students should learn and demonstrate knowledge of the content outlined in the other standards.</td>
<td></td>
</tr>
<tr>
<td><strong>Standard 7.S.1</strong>: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content.</td>
<td><strong>Assets</strong></td>
</tr>
</tbody>
</table>
|  **NBC Learn**: Animal Behavior Video: Inside a Chimpanzee Research Lab  
Animal Structure and Function Video: Engineering a Solution for Penguins' Aching Feet Video:  
Earth's Surface Video: Building a Dinosaur 101  
Ecology Video: How Do You Count, Deer?  
Ecology Video: The Great Macaw Debate  
Energy Video: Waves of the Future--Electricity from the Ocean?  
Forces Video: Remodeling Stonehenge  
Genetics Video: Genetics Take Root  
Investigative Processes Video: Baboon Research  
Investigative Processes Video: Principles of Scientific Principles  
Nature of Science Lab: Storm Safety  
Nature of Science Video: Asteroid Mining  
Nature of Science Video: Earth's Largest Radio Telescope  
Nature of Science Video: Environmental Control on the ISS  
Nature of Science Video: Farming the Wind  
Nature of Science Video: Fracking for Energy Resources  
Nature of Science Video: GPS Today--Mapping with Satellites  
Nature of Science Video: Mimicking Nature  
Nature of Science Video: NASA and a Dinosaur Named Dakota  
Nature of Science Video: Red Shift and the Expanding Universe  
Nature of Science Video: TriATHLETE - The Engineering Design Process in Action  
Nature of Science Video: What Is Science, Anyway?  
Scientific Measurement Video: Measuring Up  
The Atmosphere Lesson: Ozone Hole Gooru Webquest |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

| Standard 7.S.1: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content. | (Continued) Document: Animals Lab: Design a Nervous System
Astronomy and Space Lesson: The Big Bang
Diversity of Life Lab: Nature at Work
Diversity of Life Lesson: Natural Selection Gooru Webquest
Earth’s Structure Lab: Design a Seismograph
Earth’s Structure Lab: Moving the Continents
Earth’s Surface Lab: Exploring Geologic Time Through Core Samples
Earth’s Water Lesson: Ocean Dead Zones Gooru Webquest
Ecology Lab: Carbon and Oxygen Blues
Ecology Lab: Competition and Predation
Ecology Lab: Elbow Room
Electricity and Magnetism Lab: Detecting Fake Coins
Electricity and Magnetism Lab: Electrons and Magnetism
Investigative Processes Lab: Be Prepared
Investigative Processes Lab: Build a Crystal Radio
Investigative Processes Lab: Safety Equipment in Your School?
Investigative Processes Lab: Theories and Laws
Matter Lesson: Atomic Models Gooru Webquest
Natural Resources Lab: Design and Build a Solar Cooker
Natural Resources Lab: Future Energy Use
Natural Resources Lab: Shelterwood Cutting
Natural Resources Lab: Waste Away
Nature of Science Lab: Advances in Transportation
Nature of Science Lab: Branches of Engineering
Nature of Science Lab: Designing a Solution
Nature of Science Lab: History of Measurement
Nature of Science Lab: How Does Technology Affect Your Life?
Nature of Science Lab: Keeping Flowers Fresh
Nature of Science Lab: Piecing Information Together
Scientific Measurement Lab: Measuring Mass
Sound Lab: Changing Pitch
Sound Lab: Design and Build Hearing Protectors
The Atmosphere Lesson: Ozone Hole Gooru Webquest
Viruses Lab: How Many Viruses Fit on a Pin?
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants |
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</table>
| **(Continued)** **Standard 7.S.1:** The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content. | **(Continued)**  
**Image:** Electricity and Magnetism Image: Maglev Train  
Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet  
Forces Image: Rube Goldberg Machine  
Genetics Image: Human Genome  
Investigative Processes Image: Lab Equipment  
Investigative Processes Image: Petri Dishes  
Investigative Processes Image: Student Lab Safety  
Investigative Processes Image: Surveyor  
Light Image: Double Slit Experiment  
Light Image: Optic Fibers  
Matter Image: Selenium Photocell  
Natural Resources Image: Wind Farm  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Laboratory Notebook  
Nature of Science Image: Marine Biology  
Nature of Science Image: Optical Topography Device  
Nature of Science Image: Satellite Signals  
Nature of Science Image: Science Teacher  
Nature of Science Lab: Keeping Flowers Fresh  
**Interactive Media Activity:** Astronomy and Space Interactivity: Build an Orbiter  
Cells Interactivity: How Can You Observe Cells?  
Earth's Structure Interactivity: Earthquake Engineering  
Earth's Structure Interactivity: Monitoring a Volcano  
Earth's Water Interactivity: Mutation Mystery  
Electricity and Magnetism Interactivity: Discovering Ohm's Law  
Forces Interactivity: Inclined Planes: Work of the Egyptians  
Genetics Image: Human Genome  
Genetics Interactivity: DNA Fingerprinting  
Genetics Interactivity: Mendel's Experiments  
Investigative Processes Interactivity: Average Speed for the Win  
Investigative Processes Interactivity: Global Positioning System  
Investigative Processes Interactivity: How Are Units Useful?  
Investigative Processes Interactivity: Intro to the Virtual Lab  
Investigative Processes Interactivity: Plotting a Line Graph  
Investigative Processes Interactivity: Safety in the Physical Science Lab  
Investigative Processes Interactivity: The Need for Numbers |
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### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

#### 7.S.1A. Conceptual Understanding:
The practices of science and engineering support the development of science concepts, develop the habits of mind that are necessary for scientific thinking, and allow students to engage in science in ways that are similar to those used by scientists and engineers.

#### Performance Indicators:
Students who demonstrate this understanding can:

<table>
<thead>
<tr>
<th>7.S.1A.1 Ask questions to (1) generate hypotheses for scientific investigations, (2) refine models, explanations, or designs, or (3) extend the results of investigations or challenge claims.</th>
</tr>
</thead>
</table>

### Pearson OLE Online Learning Exchange

**Assets**
- **Video:** Earth's Surface Video: Building a Dinosaur 101
- Nature of Science Video: What Is Science, Anyway?
- Investigative Processes Video: Baboon Research
- Investigative Processes Video: Principles of Scientific Principles

**Document:** Investigative Processes Lab: Theories and Laws
- Astronomy and Space Lesson: The Big Bang
- Gooru Webquest
- Diversity of Life Lesson: Natural Selection Gooru Webquest
- Earth's Surface Lab: Exploring Geologic Time Through Core Samples
- Nature of Science Lab: Keeping Flowers Fresh
- Diversity of Life Lab: Nature at Work
- Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants
- Natural Resources Lab: Waste Away
- Ecology Lab: Carbon and Oxygen Blues
- Animals Lab: One for Al

**Image:** Nature of Science Image: Laboratory Notebook

**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?
- Nature of Science Interactivity: Scientific Stumbling Blocks
- Nature of Science Interactivity: Building a Theory
- Genetics Interactivity: Mendel's Experiments
- Nature of Science Interactivity: Inquiry Diagram

**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change
- Investigative Processes Video: Scientific Method
- Overview
- Interactive Science: Earth Science Online
- Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

**7.S.1A.2** Develop, use, and refine models to (1) understand or represent phenomena, processes, and relationships, (2) test devices or solutions, or (3) communicate ideas to others.

### Pearson OLE Online Learning Exchange

**Assets**

- **Video:** Earth's Surface Video: Building a Dinosaur 101
- Ecology Video: How Do You Count, Deer?
- Nature of Science Video: What Is Science, Anyway?
- Investigative Processes Video: Principles of Scientific Principles

**Document:** Investigative Processes Lab: Theories and Laws

- Astronomy and Space Lesson: The Big Bang
- Gooru Webquest
- Natural Resources Lab: Shelterwood Cutting
- Earth's Surface Lab: Exploring Geologic Time Through Core Samples
- Matter Lesson: Atomic Models Gooru Webquest
- Scientific Measurement Lab: Measuring Mass
- Diversity of Life Lab: Nature at Work
- Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants
- Ecology Lab: Elbow Room
- Animals Lab: Design a Nervous System
- Viruses Lab: How Many Viruses Fit on a Pin?
- Ecology Lab: Competition and Predation
- Natural Resources Lab: Waste Away

**Image:** Light Image: Double Slit Experiment

- Nature of Science Image: Laboratory Notebook
- Genetics Image: Human Genome
- Nature of Science Image: DNA Sequence
- Nature of Science Image: Science Teacher
- Nature of Science Image: Marine Biology

**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?

- Nature of Science Interactivity: Scientific Stumbling Blocks
- Nature of Science Interactivity: Building a Theory
- Genetics Interactivity: Mendel's Experiments
- Nature of Science Interactivity: Inquiry Diagram
- Earth's Structure Interactivity: Monitoring a Volcano
- Nature of Science Interactivity: Making Observations of Our Solar System
- Investigative Processes Interactivity: Why Make a Model?
- Investigative Processes Interactivity: The Need for Numbers
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| (Continued) 7.S.1A.2 Develop, use, and refine models to (1) understand or represent phenomena, processes, and relationships, (2) test devices or solutions, or (3) communicate ideas to others. | (Continued)  
**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change  
Investigative Processes Video: Scientific Method Overview  
Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105 |
| 7.S.1A.3 Plan and conduct controlled scientific investigation to answer questions, test hypotheses, and develop explanations: (1) formulate scientific questions and testable hypotheses, (2) identify materials, procedures, and variables, (3) select and use appropriate tools or instruments to collect qualitative and quantitative data, and (4) record and represent data in an appropriate form. Use appropriate safety procedures. | **Assets**  
**NBC Learn:** Animal Behavior Video: Inside a Chimpanzee Research Lab  
**Video:** Nature of Science Video: What Is Science, Anyway?  
Investigative Processes Video: Baboon Research  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Electricity and Magnetism Lab: Electrons and Magnetism  
Earth's Surface Lab: Exploring Geologic Time Through Core Samples  
Nature of Science Lab: Keeping Flowers Fresh  
Nature of Science Lab: Piecing Information Together  
Investigative Processes Lab: Safety Equipment in Your School?  
Scientific Measurement Lab: Measuring Mass  
Diversity of Life Lab: Nature at Work  
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants  
Sound Lab: Changing Pitch  
Natural Resources Lab: Waste Away  
Ecology Lab: Carbon and Oxygen Blues  
Investigative Processes Lab: Be Prepared  
Animals Lab: One for Al  
**Image:** Light Image: Double Slit Experiment  
Investigative Processes Image: Surveyor  
Nature of Science Image: Laboratory Notebook  
Nature of Science Image: Science Teacher  
Nature of Science Image: Marine Biology  
Investigative Processes Image: Student Lab Safety  
Investigative Processes Image: Lab Equipment  
Investigative Processes Image: Petri Dishes |
**South Carolina Academic Standards and Performance Indicators for Science – Grade 7**

**Pearson OLE Online Learning Exchange**

**7.S.1A.3** Plan and conduct controlled scientific investigation to answer questions, test hypotheses, and develop explanations: (1) formulate scientific questions and testable hypotheses, (2) identify materials, procedures, and variables, (3) select and use appropriate tools or instruments to collect qualitative and quantitative data, and (4) record and represent data in an appropriate form. Use appropriate safety procedures.

**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?
Nature of Science Interactivity: Scientific Stumbling Blocks
Nature of Science Interactivity: Building a Theory
Genetics Interactivity: Mendel's Experiments
Nature of Science Interactivity: Inquiry Diagram
Nature of Science Interactivity: Redi's and Pasteur's Experiments
Investigative Processes Interactivity: Intro to the Virtual Lab
Cells Interactivity: How Can You Observe Cells?
Investigative Processes Interactivity: Safety in the Physical Science Lab
Investigative Processes Interactivity: Tools Used in Physical Science

**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change
Investigative Processes Video: Scientific Method Overview
Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105
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</table>
| **7.S.1A.4.** Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulation, graphing, or statistical analysis) to (1) reveal patterns and construct meaning or (2) support hypotheses, explanations, claims, or designs. | **Assets**  
Video: Earth's Surface Video: Building a Dinosaur 101  
Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Investigative Processes Video: Baboon Research  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Nature of Science Lab: History of Measurement  
Electricity and Magnetism Lab: Electrons and Magnetism  
Astronomy and Space Lesson: The Big Bang  
Gooru Webquest  
Earth's Structure Lab: Moving the Continents  
Natural Resources Lab: Future Energy Use  
Diversity of Life Lesson: Natural Selection Gooru Webquest  
Earth's Surface Lab: Exploring Geologic Time Through Core Samples  
Nature of Science Lab: Keeping Flowers Fresh  
Scientific Measurement Lab: Measuring Mass  
Diversity of Life Lab: Nature at Work  
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants  
Sound Lab: Changing Pitch  
Natural Resources Lab: Waste Away  
Ecology Lab: Carbon and Oxygen Blues  
Animals Lab: One for Al  
**Image:** Light Image: Double Slit Experiment  
Nature of Science Image: Laboratory Notebook  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Science Teacher  
Nature of Science Image: Marine Biology |
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| **(Continued)**  
**7.S.1A.4.** Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulation, graphing, or statistical analysis) to (1) reveal patterns and construct meaning or (2) support hypotheses, explanations, claims, or designs. | **(Continued)**  
**Interactive Media Activity:** Nature of Science  
Interactivity: What Is Scientific Inquiry?  
Nature of Science Interactivity: Scientific Stumbling Blocks  
Nature of Science Interactivity: Building a Theory  
Genetics Interactivity: Mendel's Experiments  
Nature of Science Interactivity: Inquiry Diagram  
Nature of Science Interactivity: Reviving the 1918 Virus  
Earth's Water Interactivity: Mutation Mystery  
Earth's Structure Interactivity: Monitoring a Volcano  
Nature of Science Interactivity: Making Observations of Our Solar System  
Genetics Interactivity: DNA Fingerprinting  
Nature of Science Interactivity: A Walk in the Forest  
Investigative Processes Interactivity: Plotting a Line Graph  
Electricity and Magnetism Interactivity: Discovering Ohm's Law  
Investigative Processes Interactivity: The Need for Numbers  
**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change  
Investigative Processes Video: Scientific Method Overview  
Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105 |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

**7.S.1A.5** Use mathematical and computational thinking to (1) use and manipulate appropriate metric units, (2) collect and analyze data, (3) express relationships between variables for models and investigations, or (4) use grade-level appropriate statistics to analyze data.

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| **Assets** | **Video:** Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Scientific Measurement Video: Measuring Up  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Nature of Science Lab: History of Measurement  
Natural Resources Lab: Future Energy Use  
Nature of Science Lab: Keeping Flowers Fresh  
Scientific Measurement Lab: Measuring Mass  
Diversity of Life Lab: Nature at Work  
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants  
Viruses Lab: How Many Viruses Fit on a Pin?  
**Image:** Nature of Science Image: Laboratory Notebook  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Marine Biology  
**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?  
Nature of Science Interactivity: Scientific Stumbling Blocks  
Nature of Science Interactivity: Building a Theory  
Genetics Interactivity: Mendel's Experiments  
Nature of Science Interactivity: Inquiry Diagram  
Nature of Science Interactivity: A Walk in the Forest  
Investigative Processes Interactivity: Plotting a Line Graph  
Electricity and Magnetism Interactivity: Discovering Ohm's Law  
Investigative Processes Interactivity: Universe at Different Scales  
Investigative Processes Interactivity: How Are Units Useful?  
Investigative Processes Interactivity: The Need for Numbers  
Investigative Processes Interactivity: Average Speed for the Win  
**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change  
Scientific Measurement Video: How Folding Paper Can Get You to the Moon  
Investigative Processes Video: Scientific Method Overview Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105 |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

**7.S.1A.6** Construct explanations of phenomena using (1) primary or secondary scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams.

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| **Assets** | **Video:** Nature of Science Video: What Is Science, Anyway?  
Investigative Processes Video: Baboon Research  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Electricity and Magnetism Lab: Electrons and Magnetism  
Astronomy and Space Lesson: The Big Bang  
Gooru Webquest  
Earth’s Structure Lab: Moving the Continents  
Natural Resources Lab: Future Energy Use  
Diversity of Life Lesson: Natural Selection Gooru Webquest  
The Atmosphere Lesson: Ozone Hole Gooru Webquest  
Nature of Science Lab: Keeping Flowers Fresh  
Scientific Measurement Lab: Measuring Mass  
Diversity of Life Lab: Nature at Work  
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants  
Sound Lab: Changing Pitch  
Natural Resources Lab: Waste Away  
Ecology Lab: Carbon and Oxygen Blues  
Animals Lab: One for All  
**Image:** Light Image: Double Slit Experiment  
Nature of Science Image: Laboratory Notebook  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Science Teacher  
**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?  
Nature of Science Interactivity: Scientific Stumbling Blocks  
Nature of Science Interactivity: Building a Theory  
Genetics Interactivity: Mendel’s Experiments  
Nature of Science Interactivity: Inquiry Diagram  
Earth’s Water Interactivity: Mutation Mystery  
Earth’s Structure Interactivity: Monitoring a Volcano  
Nature of Science Interactivity: Making Observations of Our Solar System  
Nature of Science Interactivity: A Walk in the Forest  
Electricity and Magnetism Interactivity: Discovering Ohm’s Law |
<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</th>
<th>Pearson OLE Online Learning Exchange</th>
</tr>
</thead>
</table>
| **7.S.1A.6** Construct explanations of phenomena using (1) primary or secondary scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams. | **(Continued)**
| **Link:** Nature of Science Interactivity: A Student’s Guide to Global Climate Change | **Assets**
| Investigative Processes Video: Scientific Method Overview | Video: Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Investigative Processes Video: Principles of Scientific Principles |  
**Document:** Investigative Processes Lab: Theories and Laws  
Electricity and Magnetism Lab: Electrons and Magnetism  
Astronomy and Space Lesson: The Big Bang  
Gooru Webquest  
Earth’s Structure Lab: Moving the Continents  
Diversity of Life Lesson: Natural Selection Gooru Webquest  
The Atmosphere Lesson: Ozone Hole Gooru Webquest  
Earth’s Surface Lab: Exploring Geologic Time Through Core Samples  
Nature of Science Lab: Keeping Flowers Fresh  
Scientific Measurement Lab: Measuring Mass  
Diversity of Life Lab: Nature at Work  
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants  
Sound Lab: Changing Pitch  
Natural Resources Lab: Waste Away  
Ecology Lab: Carbon and Oxygen Blues  
Animals Lab: One for Al  
**Image:** Light Image: Double Slit Experiment  
Nature of Science Image: Laboratory Notebook  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Science Teacher |
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</thead>
<tbody>
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</tbody>
</table>
| 7.S.1A.8 Obtain and evaluate scientific information to (1) answer questions, (2) explain or describe phenomena, (3) develop models, (4) evaluate hypotheses, explanations, claims, or designs or (5) identify and/or fill gaps in knowledge. Communicate using the conventions and expectations of scientific writing or oral presentations by (1) evaluating grade-appropriate primary or secondary scientific literature, or (2) reporting the results of student experimental investigations. | **Assets**
**NBC Learn:** Animal Structure and Function Video: Engineering a Solution for Penguins' Aching Feet
Genetics Video: Genetics Take Root
Nature of Science Video: Red Shift and the Expanding Universe
**Document:** Earth's Water Lesson: Ocean Dead Zones Gooru Webquest
Astronomy and Space Lesson: The Big Bang Gooru Webquest
Earth's Structure Lab: Moving the Continents Diversity of Life Lesson: Natural Selection Gooru Webquest
The Atmosphere Lesson: Ozone Hole Gooru Webquest
**Image:** Investigative Processes Image: Surveyor
Nature of Science Image: Science Teacher
Nature of Science Lab: Keeping Flowers Fresh
Nature of Science Interactivity: Scientific Stumbling Blocks
Nature of Science Interactivity: Building a Theory
Nature of Science Interactivity: Inquiry Diagram
Nature of Science Interactivity: Reviving the 1918 Virus
Nature of Science Interactivity: Making Observations of Our Solar System
Nature of Science Interactivity: A Walk in the Forest
Investigative Processes Interactivity: Plotting a Line Graph
**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change Nature of Science Interactivity: Scientific Method Lab
Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105 |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

#### Conceptual Understanding:
Technology is any modification to the natural world created to fulfill the wants and needs of humans. The engineering design process involves a series of iterative steps used to solve a problem and often leads to the development of a new or improved technology.

#### Performance Indicators:
Students who demonstrate this understanding can:

<table>
<thead>
<tr>
<th>Performance Indicators</th>
<th>Assets</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7.S.1B.1 Construct devices or design solutions using scientific knowledge to solve specific problems or needs:</strong> (1) ask questions to identify problems or needs, (2) ask questions about the criteria and constraints of the device or solutions, (3) generate and communicate ideas for possible devices or solutions, (4) build and test devices or solutions, (5) determine if the devices or solutions solved the problem and refine the design if needed, and (6) communicate the results.</td>
<td><strong>Video:</strong> Nature of Science Video: GPS Today--Mapping with Satellites&lt;br&gt;Nature of Science Video: Fracking for Energy Resources&lt;br&gt;Energy Video: Waves of the Future--Electricity from the Ocean?&lt;br&gt;Nature of Science Video: Asteroid Mining&lt;br&gt;Ecology Video: The Great Macaw Debate&lt;br&gt;Nature of Science Video: Mimicking Nature&lt;br&gt;Nature of Science Video: Farming the Wind&lt;br&gt;Nature of Science Video: Environmental Control on the ISS&lt;br&gt;Nature of Science Video: TriATHLETE - The Engineering Design Process in Action&lt;br&gt;Nature of Science Video: NASA and a Dinosaur Named Dakota&lt;br&gt;Nature of Science Video: Earth's Largest Radio Telescope&lt;br&gt;The Atmosphere Lesson: Ozone Hole Gooru Webquest&lt;br&gt;Nature of Science Lab: Storm Safety&lt;br&gt;Forces Video: Remodeling Stonehenge&lt;br&gt;<strong>Document:</strong> Nature of Science Lab: Branches of Engineering&lt;br&gt;Electricity and Magnetism Lab: Detecting Fake Coins&lt;br&gt;Investigative Processes Lab: Build a Crystal Radio&lt;br&gt;Nature of Science Interactivity: Inquiry Diagram&lt;br&gt;Nature of Science Lab: How Does Technology Affect Your Life?&lt;br&gt;Natural Resources Lab: Future Energy Use&lt;br&gt;Nature of Science Lab: Advances in Transportation&lt;br&gt;Sound Lab: Design and Build Hearing Protectors&lt;br&gt;Nature of Science Lab: Designing a Solution&lt;br&gt;Earth’s Structure Lab: Design a Seismograph&lt;br&gt;Natural Resources Lab: Waste Away&lt;br&gt;Natural Resources Lab: Design and Build a Solar Cooker</td>
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</table>
A Correlation of Pearson OLE, Grades 6-8, to the South Carolina Academic Standards and Performance Indicators for Science

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</table>
| **(Continued)** 7.S.1B.1 Construct devices or design solutions using scientific knowledge to solve specific problems or needs: (1) ask questions to identify problems or needs, (2) ask questions about the criteria and constraints of the device or solutions, (3) generate and communicate ideas for possible devices or solutions, (4) build and test devices or solutions, (5) determine if the devices or solutions solved the problem and refine the design if needed, and (6) communicate the results. | **(Continued)**  
**Image**: Nature of Science Image: Satellite Signals  
Light Image: Optic Fibers  
Investigative Processes Image: Surveyor  
Nature of Science Image: Optical Topography Device  
Forces Image: Rube Goldberg Machine  
Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet  
Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet  
Nature of Science Image: Laboratory Notebook  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Matter Image: Selenium Photocell  
Natural Resources Image: Wind Farm  
Electricity and Magnetism Image: Maglev Train  
**Interactive Media Activity**: Nature of Science Video: What Is Science, Anyway?  
Astronomy and Space Interactivity: Build an Orbiter  
Earth's Structure Interactivity: Earthquake Engineering  
Nature of Science Interactivity: Where Did Computers Come From?  
Nature of Science Interactivity: Exploring Engineering  
Earth's Water Interactivity: Mutation Mystery  
Nature of Science Interactivity: Space Spinoffs  
Nature of Science Interactivity: Evolving Technology  
Investigative Processes Interactivity: Global Positioning System  
Forces Interactivity: Inclined Planes: Work of the Egyptians  
**Link**: Nature of Science Interactivity: Build a Bridge  
Nature of Science Interactivity: Construct an Aqueduct  
Nature of Science Interactivity: Aviary Architect  
Interactive Science: Earth Science Online Student Editions, Science and Technology, Chapter 4, pp. 116-145 |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

#### PHYSICAL SCIENCE: CLASSIFICATION AND CONSERVATION OF MATTER

**Standard 7.P.2:** The student will demonstrate an understanding of the structure and properties of matter and that matter is conserved as it undergoes changes.

**Assets**
- Video: The Atom Video: The Elements of Hockey
- Matter and Its Properties Video: What's the Matter
- Matter Video: Organizing Like Mendeleev

**Document:** Chemistry Lesson: Balancing Equations Gooru Webquest
- Chemistry Lesson: Chemical Bonds Gooru Webquest
- Matter Lab: Modeling Atoms and Molecules
- Matter Lesson: Atomic Models Gooru Webquest
- Matter Lesson: Chemical Change Gooru Webquest
- Scientific Measurement Lab: Measuring Mass

**Image:**
- Atomic Structure Image: Teaching the Periodic Table
- Chemical Bonding Image: Double Bond
- Chemical Bonding Image: Ionic Bonds
- Chemical Reactions Image: Balancing Chemical Equations
- Chemistry Image: Household Cleaner Litmus Test
- Investigative Processes Image: Atomic Model
- Matter and Its Properties Image: Fruit Salad
- Matter Image: Atomic Structure
- Matter Image: Cereal Mixture
- Matter Image: Density Scale
- Matter Image: Milk
- Matter Image: Mixtures
- Matter Image: Molecular Model
- Matter Image: Oil and Vinegar
- Matter Image: Ruthenium Compounds
- Matter Image: Salt Solution

**Interactive Media Activity:**
- Chemistry Interactivity: Acid, Base, or Neutral?
- Chemistry Interactivity: Balancing Equations
- Chemistry Interactivity: Bonding in Polar Molecules
- Chemistry Interactivity: Build an Ionic Compound
- Chemistry Interactivity: Classifying Solutions
- Chemistry Interactivity: Conservation of Matter
- Chemistry Interactivity: Will It React?
- Matter Interactivity: Build an Atom
- Matter Interactivity: Changes of State
- Matter Interactivity: Density
- Matter Interactivity: Properties of Metals and Nonmetals
- Matter Interactivity: What Element Is It?
- Matter Interactivity: Will It Float? Density of Solids and Liquids
<table>
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<th>Pearson OLE Online Learning Exchange</th>
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</thead>
</table>
| **Standard 7.P.2**: The student will demonstrate an understanding of the structure and properties of matter and that matter is conserved as it undergoes changes. | *(Continued)*  
**Link**: Chemistry Interactivity: Alien Juice Bar  
Interactive Science: Nature of Science Online Student Edition  
Interactive Science: Physical Science Online Student Editions, Introduction to Chemistry  
Matter Interactivity: Cooking up Physical and Chemical Changes  
Matter Interactivity: Periodic Table Tour  
Matter Video: Molly Molecule and Physical Processes |

**7.P.2A. Conceptual Understanding**: All substances are composed of one or more elements. Elements are pure substances which contain only one kind of atom. The periodic table organizes these elements based on similar properties. Compounds are substances composed of two or more elements. Chemical formulas can be used to describe compounds.

**Performance Indicators**: Students who demonstrate this understanding can:

**7.P.2A.1** Develop and use simple atomic models to illustrate the components of elements (including the relative position and charge of protons, neutrons, and electrons).

**Assets**  
**Video**: The Atom Video: The Elements of Hockey  
**Document**: Matter Lesson: Atomic Models Gooru Webquest  
**Image**: Chemical Bonding Image: Double Bond Investigative Processes Image: Atomic Model  
**Interactive Media Activity**: Matter Interactivity: Build an Atom  
**Link**: Interactive Science: Physical Science Online Student Editions, Introduction to Chemistry, Chapter 3, pp. 72-79

**7.P.2A.2** Obtain and use information about elements (including chemical symbol, atomic number, atomic mass, and group or family) to describe the organization of the periodic table.

**Assets**  
**Video**: Matter Video: Organizing Like Mendeleev  
**Image**: Atomic Structure Image: Teaching the Periodic Table  
**Interactive Media Activity**: Matter Interactivity: Build an Atom  
**Chemistry Interactivity**: Will It React?  
**Link**: Matter Interactivity: Periodic Table Tour  
Interactive Science: Physical Science Online Student Editions, Introduction to Chemistry, Chapter 3, pp. 80-113
<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</th>
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</tr>
</thead>
</table>
| **7.P.2A.3** Analyze and interpret data to describe and classify matter as pure substances (elements or compounds) or mixtures (heterogeneous or homogeneous) based on composition. | **Assets**
- Video: The Atom Video: The Elements of Hockey
- Matter and Its Properties Video: What’s the Matter
- **Document**: Matter Lesson: Chemical Change
- Gooru Webquest
- Matter Lab: Modeling Atoms and Molecules
- **Image**: Matter Image: Mixtures
- Matter Image: Cereal Mixture
- Matter Image: Oil and Vinegar
- Matter Image: Milk
- Matter Image: Ruthenium Compounds
- Matter and Its Properties Image: Fruit Salad
- Matter Image: Molecular Model
- **Interactive Media Activity**: Matter
- Interactivity: What Makes Up Matter?
- **Link**: Matter Interactivity: Cooking up Physical and Chemical Changes
- Interactive Science: Physical Science Online Student Editions; Introduction to Chemistry; Chapter 1, pp. 9-13; Chapter 6, pp. 198-201 |
| **7.P.2A.4** Construct explanations for how compounds are classified as ionic (metal bonded to nonmetal) or covalent (nonmetals bonded together) using chemical formulas. | **Assets**
- Video: The Atom Video: The Elements of Hockey
- **Document**: Chemistry Lesson: Chemical Bonds
- Gooru Webquest
- **Image**: Chemical Bonding Image: Double Bond
- Chemical Bonding Image: Ionic Bonds
- Matter Image: Molecular Model
- **Interactive Media Activity**: Matter
- Interactivity: Properties of Metals and Nonmetals
- Chemistry Interactivity: Build an Ionic Compound
- Chemistry Interactivity: Will It React?
- Chemistry Interactivity: Bonding in Polar Molecules
- **Link**: Interactive Science: Physical Science Online Student Editions, Introduction to Chemistry, Chapter 4, pp. 124-151 |
### 7.P.2B. Conceptual Understanding: Substances (such as metals or acids) are identified according to their physical or chemical properties. Changes to substances can either be physical or chemical. Many substances react chemically with other substances to form new substances with different properties. According to the law of conservation of matter, total mass does not change in a chemical reaction.

#### 7.P.2B.1 Analyze and interpret data to describe substances using physical properties (including state, boiling/melting point, density, conductivity, color, hardness, and magnetic properties) and chemical properties (the ability to burn or rust).

<table>
<thead>
<tr>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interactive Media Activity:</strong> Matter Interactivity: What Element Is It?</td>
</tr>
<tr>
<td><strong>Interactive Media Activity:</strong> Matter Interactivity: Changes of State</td>
</tr>
<tr>
<td><strong>Link:</strong> Interactive Science: Physical Science Online Student Editions; Introduction to Chemistry; Chapter 1, pp. 4-7; Chapter 5, pp. 164-169</td>
</tr>
</tbody>
</table>

#### 7.P.2B.2 Use mathematical and computational thinking to describe the relationship between the mass, volume, and density of a given substance.

<table>
<thead>
<tr>
<th>Assets</th>
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</thead>
<tbody>
<tr>
<td><strong>Document:</strong> Scientific Measurement Lab: Measuring Mass</td>
</tr>
<tr>
<td><strong>Image:</strong> Matter Image: Density Scale</td>
</tr>
<tr>
<td><strong>Interactive Media Activity:</strong> Matter Interactivity: Will It Float? Density of Solids and Liquids</td>
</tr>
<tr>
<td><strong>Matter Interactivity:</strong> Density</td>
</tr>
<tr>
<td><strong>Link:</strong> Interactive Science: Nature of Science Online Student Edition, Chapter 3, pp. 73-77</td>
</tr>
</tbody>
</table>

#### 7.P.2B.3 Analyze and interpret data to compare the physical properties, chemical properties (neutralization to form a salt, reaction with metals), and pH of various solutions and classify solutions as acids or bases.

<table>
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<tr>
<th>Assets</th>
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<tbody>
<tr>
<td><strong>Image:</strong> Matter Image: Salt Solution</td>
</tr>
<tr>
<td><strong>Chemistry Image:</strong> Household Cleaner Litmus Test</td>
</tr>
<tr>
<td><strong>Interactive Media Activity:</strong> Chemistry Interactivity: Classifying Solutions</td>
</tr>
<tr>
<td>Chemistry Interactivity: Acid, Base, or Neutral?</td>
</tr>
<tr>
<td><strong>Link:</strong> Interactive Science: Physical Science Online Student Editions, Introduction to Chemistry, Chapter 6, pp. 194-223</td>
</tr>
</tbody>
</table>

#### 7.P.2B.4 Plan and conduct controlled scientific investigations to answer questions about how physical and chemical changes affect the properties of different substances.

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<tr>
<td><strong>Image:</strong> Matter Image: Salt Solution</td>
</tr>
<tr>
<td><strong>Interactive Media Activity:</strong> Chemistry Interactivity: Classifying Solutions</td>
</tr>
<tr>
<td>Chemistry Interactivity: Acid, Base, or Neutral?</td>
</tr>
<tr>
<td><strong>Link:</strong> Matter Video: Molly Molecule and Physical Processes</td>
</tr>
<tr>
<td>Chemistry Interactivity: Alien Juice Bar</td>
</tr>
<tr>
<td>Interactive Science: Physical Science Online Student Editions, Introduction to Chemistry, Chapter 5, pp. 162-187</td>
</tr>
<tr>
<td>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</td>
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<tr>
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<tr>
<td><strong>7.P.2B.5</strong> Develop and use models to explain how chemical reactions are supported by the law of conservation of matter.</td>
</tr>
</tbody>
</table>

### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

#### Standard 7.L.3:
The student will demonstrate an understanding of how the levels of organization within organisms support the essential functions of life.

(Continued)

**Pearson OLE Online Learning Exchange**

(Continued)

- Viruses, Fungi, and Microorganisms Image: E. coli
- Viruses, Fungi, and Microorganisms Image: Staphylococcus
- Viruses, Fungi, and Microorganisms Image: Yogurt Cultures

**Interactive Media Activity:**
- Cells Interactivity: Plant and Animal Cells
- Cells Interactivity: Prokaryotic and Eukaryotic Cells
- Cells Interactivity: The Cell as a Living Factory
- Human Body Interactivity: Body Systems
- Human Body Interactivity: Build a Skeleton
- Human Body Interactivity: Dance of Development
- Human Body Interactivity: Support Tissues Up Close
- Viruses, Fungi, and Microorganisms Interactivity: Using Organisms in the Environment

**Link:**
- Human Body Video: How the Body Responds to Exercise
- Human Body Video: Sex Determination
- Interactive Science: Life Science Online Student Editions, Cells and Heredity
- Interactive Science: Life Science Online Student Editions, Diversity of Life
- Interactive Science: Life Science Online Student Editions, Human Body Systems
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

#### 7.L.3A. Conceptual Understanding

Cells are the most basic unit of any living organism. All organisms are composed of one (unicellular) or many cells (multicellular) and require food and water, a way to dispose of waste, and an environment in which they can live in order to survive. Through the use of technology, scientists have discovered special structures within individual cells that have specific functions that allow the cell to grow, survive, and reproduce. Bacteria are one-celled organisms found almost everywhere and can be both helpful and harmful. They can be simply classified by their size, shape and whether or not they can move.

**Performance Indicators:** Students who demonstrate this understanding can:

<table>
<thead>
<tr>
<th>7.L.3A.1</th>
<th>Obtain and communicate information to support claims that (1) organisms are made of one or more cells, (2) cells are the basic unit of structure and function of organisms, and (3) cells come only from existing cells.</th>
</tr>
</thead>
</table>
| **Assets** | **Video:** Cells Video: Leaf and Plant Cell Structure  
Cells Video: Animal Cell Structure  
**Image:** Cells Image: Animal Cell  
Cells Image: SEM Plant Cell  
**Interactive Media Activity:** Cells Interactivity: Prokaryotic and Eukaryotic Cells  
**Link:** Interactive Science: Life Science Online  
Student Editions, Cells and Heredity, Chapter 1, pp. 4-11 |

<table>
<thead>
<tr>
<th>7.L.3A.2</th>
<th>Analyze and interpret data from observations to describe different types of cells and classify cells as plant, animal, protist, or bacteria.</th>
</tr>
</thead>
</table>
| **Assets** | **Video:** Cells Video: Leaf and Plant Cell Structure  
Cells Video: Animal Cell Structure  
**Document:** Cells Lesson: Animal and Plant Cells  
Gooru Webquest  
**Image:** Cells Image: Animal Cell  
Cells Image: SEM Plant Cell  
**Interactive Media Activity:** Cells Interactivity: Plant and Animal Cells  
Cells Interactivity: Prokaryotic and Eukaryotic Cells  
**Link:** Interactive Science: Life Science Online  
Student Editions, Cells and Heredity, Chapter 2, pp. 12-19 |

<table>
<thead>
<tr>
<th>7.L.3A.3</th>
<th>Develop and use models to explain how the relevant structures within cells (including cytoplasm, cell membrane, cell wall, nucleus, mitochondria, chloroplasts, lysosomes, and vacuoles) function to support the life of plant, animal, and bacterial cells.</th>
</tr>
</thead>
</table>
| **Assets** | **Video:** Cells Video: Leaf and Plant Cell Structure  
Cells Video: Animal Cell Structure  
**Document:** Cells Lesson: Animal and Plant Cells  
Gooru Webquest  
**Image:** Cells Image: Animal Cell  
Cells Image: SEM Plant Cell  
**Interactive Media Activity:** Cells Interactivity: Plant and Animal Cells  
Cells Interactivity: Prokaryotic and Eukaryotic Cells  
Cells Interactivity: The Cell as a Living Factory  
**Link:** Interactive Science: Life Science Online  
Student Editions, Cells and Heredity, Chapter 1, pp. 15-19 |
### A Correlation of Pearson OLE, Grades 6-8, to the South Carolina Academic Standards and Performance Indicators for Science

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</table>
| 7.L.3A.4 Construct scientific arguments to support claims that bacteria are both helpful and harmful to other organisms and the environment. | **Assets**
**Image:** Viruses, Fungi, and Microorganisms
**Image:** Cleaning Up an Oil Spill with Bacteria
**Viruses, Fungi, and Microorganisms Image:** Staphylococcus
**Viruses, Fungi, and Microorganisms Image:** Yogurt Cultures
**Viruses, Fungi, and Microorganisms Image:** E. coli
**Interactive Media Activity:** Viruses, Fungi, and Microorganisms Interactivity: Using Organisms in the Environment
**Link:** Interactive Science: Life Science Online Student Editions, Diversity of Life, Chapter 1, pp. 47-55 |

| 7.L.3B. Conceptual Understanding: Multicellular organisms (including humans) are complex systems with specialized cells that perform specific functions. Organs and organ systems are composed of cells that function to serve the needs of cells which in turn serve the needs of the organism. | **Performance Indicators:** Students who demonstrate this understanding can:

| 7.L.3B.1 Develop and use models to explain how the structural organizations within multicellular organisms function to serve the needs of the organism. | **Assets**
**Video:** Cells Video: Leaf and Plant Cell Structure
**Cells Video:** Animal Cell Structure
**Human Body Video:** Zen Diving
**Human Body Video:** Upper Digestive System
**Human Body Video:** Nervous System - Neuron Pathway
**Human Body Video:** Renal System and Abdomen
**Human Body Video:** Lungs and Heart
**Human Body Video:** Lungs and Heart
**Document:** Cells Lesson: Animal and Plant Cells
Gooru Webquest
Animals Lab: Compare Nervous Systems
**Image:** Human Body Image: Lymphatic System
**Human Body Image:** Muscles
**Human Body Image:** Lymph
**Human Body Image:** Human Body Muscles
**Human Body Image:** Respiratory System
**Human Body Image:** Female Endocrine System
**Human Body Image:** Human circulatory system.
**Human Body Image:** Nervous System
**Human Body Image:** Nervous System
**Human Body Image:** Urinary System
**Human Body Image:** Human Heart
**Human Body Image:** Respiratory System
**Human Body Image:** Human Skeleton
**Human Body Image:** Male Nervous System
**Human Body Image:** Human Digestive System
**Human Body Image:** X-Ray of Skull |
<table>
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</table>
| **(Continued)**  
**7.L.3B.1** Develop and use models to explain how the structural organizations within multicellular organisms function to serve the needs of the organism. | **(Continued)**  
**Interactive Media Activity:** Cells Interactivity: Plant and Animal Cells  
Cells Interactivity: The Cell as a Living Factory  
Human Body Interactivity: Support Tissues Up Close  
Human Body Interactivity: Body Systems  
Human Body Interactivity: Build a Skeleton  
Human Body Interactivity: Dance of Development  
**Link:** Human Body Video: How the Body Responds to Exercise  
Human Body Video: Sex Determination  
Interactive Science: Life Science Online Student Editions; Cells and Heredity; Chapter 1, pp. 20-21; Chapter 4, pp. 142-147; Chapter 5, 174-195; Chapter 6, pp. 206-233 |
| **7.L.3B.2** Construct explanations for how systems in the human body (including circulatory, respiratory, digestive, excretory, nervous, and musculoskeletal systems) work together to support the essential life functions of the body. | **Assets**  
**Video:** Human Body Video: Zen Diving  
Human Body Video: Upper Digestive System  
Human Body Video: Nervous System - Neuron Pathway  
Human Body Video: Renal System and Abdomen  
Human Body Video: Lungs and Heart  
Human Body Video: Lungs and Heart  
**Document:** Animals Lab: Compare Nervous Systems  
**Image:** Cells Image: Red Blood Cells  
Cells Image: Nerve Cell  
Cells Image: Sensory Hair Cells  
Cells Image: Nerve Fibers  
Cells Image: Embryonic Stem Cells  
Human Body Image: Lymphatic System  
Human Body Image: Muscles  
Human Body Image: Lymph  
Human Body Image: Human Body Muscles  
Human Body Image: Respiratory System  
Human Body Image: Female Endocrine System  
Human Body Image: Human circulatory system.  
Human Body Image: Nervous System  
Human Body Image: Nervous System  
Human Body Image: Urinary System  
Human Body Image: Human Heart  
Human Body Image: Respiratory System  
Human Body Image: Human Skeleton  
Human Body Image: Male Nervous System  
Human Body Image: Human Digestive System  
Human Body Image: X-Ray of Skull |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

**7.L.3B.2** Construct explanations for how systems in the human body (including circulatory, respiratory, digestive, excretory, nervous, and musculoskeletal systems) work together to support the essential life functions of the body.

### Interactive Media Activity:
- **Cells Interactivity:** The Cell as a Living Factory
- **Human Body Interactivity:** Support Tissues Up Close
- **Human Body Interactivity:** Body Systems
- **Human Body Interactivity:** Build a Skeleton
- **Link:** Human Body Video: How the Body Responds to Exercise
- **Human Body Video:** Sex Determination
- **Interactive Science:** Life Science Online Student Editions, Human Body Systems, Chapters 1-9, pp. 1-281

### LIFE SCIENCE: HEREDITY – INHERITANCE AND VARIATION OF TRAITS

**Standard 7.L.4:** The student will demonstrate an understanding of how genetic information is transferred from parent to offspring and how environmental factors and the use of technologies influence the transfer of genetic information.

### Assets
- **NBC Learn:** Genetic Engineering and Technology Video: No Bull—Genetic Manipulation Lets Breeders Select for Female Cows
- **Video:** Ecology Video: Cloned Asian Ox
- **Genetics Video:** Genetics Take Root
- **Genetics Video:** The Case of the X-Linked Gene
- **Genetics Video:** Where'd You Get Those Genes?
- **Genetics Video:** Why Is This Lobster Blue?
- **Document:** Genetics Lesson: Fruit Fly Mutations
- **Gooru Webquest**
- **Image:** Cells Image: Mitosis and Meiosis
- **Genetics Image:** DNA Structure
- **Genetics Image:** Human DNA
- **Genetics Image:** Human Genome
- **Genetics Image:** Peas
- **Genetics Image:** Plasmids
- **Nature of Science Image:** DNA Technician

### Interactive Media Activity:
- **Cells Interactivity:** Meiosis
- **Cells Interactivity:** The Cell Cycle
- **Genetics Interactivity:** Changing Rice Production
- **Genetics Interactivity:** Effects of Environment on Genetic Traits
- **Genetics Interactivity:** Mendel's Experiments
- **Genetics Interactivity:** Pedigree Analysis
- **Genetics Interactivity:** Punnett Squares
- **Genetics Interactivity:** Track Down the Genetic Mutation
- **Genetics Interactivity:** Understanding Genetic Engineering
- **Genetics Interactivity:** Why Does My Brother Have It and I Don't?
<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</th>
<th>Pearson OLE Online Learning Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Continued) <strong>Standard 7.L.4:</strong> The student will demonstrate an understanding of how genetic information is transferred from parent to offspring and how environmental factors and the use of technologies influence the transfer of genetic information.</td>
<td>(Continued) <strong>Link:</strong> Genetics Interactivity: Track Down the Genetic Mutation Interactive Science: Life Science Online Student Editions, Cells and Heredity, Interactive Science: Life Science Online Student Editions; Diversity of Life</td>
</tr>
</tbody>
</table>

**7.L.4A. Conceptual Understanding:** Inheritance is the key process causing similarities between parental organisms and their offspring. Organisms that reproduce sexually transfer genetic information (DNA) to their offspring. This transfer of genetic information through inheritance leads to greater similarity among individuals within a population than between populations. Technology allows humans to influence the transfer of genetic information.

**Performance Indicators:** Students who demonstrate this understanding can:

| **7.L.4A.1** Obtain and communicate information about the relationship between genes and chromosomes to construct explanations of their relationship to inherited characteristics. | **Assets** **Video:** Genetics Video: Genetics Take Root Genetics Video: The Case of the X-Linked Gene Genetics Video: Where’d You Get Those Genes? **Document:** Genetics Lesson: Fruit Fly Mutations Gooru Webquest **Image:** Genetics Image: Peas **Interactive Media Activity:** Genetics Interactivity: Mendel's Experiments Genetics Interactivity: Track Down the Genetic Mutation Genetics Interactivity: Effects of Environment on Genetic Traits Genetics Interactivity: Pedigree Analysis Genetics Interactivity: Why Does My Brother Have It and I Don’t? Genetics Interactivity: Punnett Squares Genetics Interactivity: Track Down the Genetic Mutation Cells Interactivity: Meiosis **Link:** Interactive Science: Life Science Online Student Editions; Cells and Heredity; Chapter 3, pp. 92-97; Chapter 5, pp. 134-139 |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

#### 7.L.4A.2 Construct explanations for how genetic information is transferred from parent to offspring in organisms that reproduce sexually.

**Assets**
- Video: Genetics Video: Genetics Take Root
- Video: Genetics Video: The Case of the X-Linked Gene
- Video: Genetics Video: Where'd You Get Those Genes?
- Video: Genetics Video: Why Is This Lobster Blue?

**Document**:
- Genetics Lesson: Fruit Fly Mutations
- Gooru Webquest

**Image**:
- Genetics Image: Peas
- Cells Image: Mitosis and Meiosis

**Interactive Media Activity**:
- Genetics Interactivity: Genetics Interactivity: Mendel’s Experiments
- Genetics Interactivity: Track Down the Genetic Mutation
- Genetics Interactivity: Effects of Environment on Genetic Traits
- Genetics Interactivity: Pedigree Analysis
- Genetics Interactivity: Why Does My Brother Have It and I Don’t?
- Genetics Interactivity: Punnett Squares
- Genetics Interactivity: Track Down the Genetic Mutation
- Cells Interactivity: Meiosis
- Cells Interactivity: The Cell Cycle

**Link**:
- Interactive Science: Life Science Online Student Editions; Diversity of Life; Chapter 3, pp. 90-99; Chapter 7, pp. 244-251

#### 7.L.4A.3 Develop and use models (Punnett squares) to describe and predict patterns of the inheritance of single genetic traits from parent to offspring (including dominant and recessive traits, incomplete dominance, and codominance).

**Assets**
- Video: Genetics Video: The Case of the X-Linked Gene
- Video: Genetics Video: Where’d You Get Those Genes?
- Video: Genetics Video: Why Is This Lobster Blue?

**Document**:
- Genetics Lesson: Fruit Fly Mutations
- Gooru Webquest

**Image**:
- Genetics Image: Peas

**Interactive Media Activity**:
- Genetics Interactivity: Genetics Interactivity: Mendel’s Experiments
- Genetics Interactivity: Track Down the Genetic Mutation
- Genetics Interactivity: Effects of Environment on Genetic Traits
- Genetics Interactivity: Pedigree Analysis
- Genetics Interactivity: Why Does My Brother Have It and I Don’t?
- Genetics Interactivity: Punnett Squares
- Genetics Interactivity: Track Down the Genetic Mutation

**Link**:
- Interactive Science: Life Science Online Student Editions; Cells and Heredity; Chapter 3, pp. 75-85; Chapter 5, pp. 134-139
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

<table>
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</table>
| **7.L.4A.4** Use mathematical and computational thinking to predict the probability of phenotypes and genotypes based on patterns of inheritance. | **Assets**
| **Video**: Genetics Video: Genetics Take Root
| Genetics Video: The Case of the X-Linked Gene
| Genetics Video: Why Is This Lobster Blue?
| **Document**: Genetics Lesson: Fruit Fly Mutations
| Gooru Webquest
| **Image**: Genetics Image: Peas
| **Interactive Media Activity**: Genetics
| Interactivity: Mendel’s Experiments
| Genetics Interactivity: Track Down the Genetic Mutation
| Genetics Interactivity: Effects of Environment on Genetic Traits
| Genetics Interactivity: Pedigree Analysis
| Genetics Interactivity: Punnett Squares
| Genetics Interactivity: Track Down the Genetic Mutation
| Genetics Interactivity: Why Does My Brother Have It and I Don’t?
| **Link**: Interactive Science: Life Science Online Student Editions; Cells and Heredity; Chapter 3, pp. 80-85; Chapter 5, pp. 134-139 |

| **7.L.4A.5** Construct scientific arguments using evidence to support claims for how changes in genes (mutations) may have beneficial, harmful, or neutral effects on organisms. | **Assets**
| **Video**: Genetics Video: The Case of the X-Linked Gene
| Genetics Video: Why Is This Lobster Blue?
| **Image**: Cells Image: Mitosis and Meiosis
| **Interactive Media Activity**: Genetics
| Interactivity: Track Down the Genetic Mutation
| Genetics Interactivity: Pedigree Analysis
| Genetics Interactivity: Why Does My Brother Have It and I Don’t?
| Genetics Interactivity: Effects of Environment on Genetic Traits
| Genetics Interactivity: Understanding Genetic Engineering
| Genetics Interactivity: Changing Rice Production
| Cells Interactivity: Meiosis
| Cells Interactivity: The Cell Cycle
| **Link**: Genetics Interactivity: Track Down the Genetic Mutation
| Interactive Science: Life Science Online Student Editions; Cells and Heredity; Chapter 4, pp. 118-123, 129; Chapter 5, pp. 140-145 |
## South Carolina Academic Standards and Performance Indicators for Science – Grade 7

### 7.L.4A.6
Construct scientific arguments using evidence to support claims concerning the advantages and disadvantages of the use of technology (such as selective breeding, genetic engineering, or biomedical research) in influencing the transfer of genetic information.

<table>
<thead>
<tr>
<th>Assets</th>
</tr>
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<tbody>
<tr>
<td><strong>NBC Learn:</strong> Genetic Engineering and Technology Video: No Bull—Genetic Manipulation</td>
</tr>
<tr>
<td><strong>Video:</strong> Ecology Video: Cloned Asian Ox</td>
</tr>
<tr>
<td><strong>Image:</strong> Genetics Image: Plasmids</td>
</tr>
<tr>
<td>Genetics Image: Human DNA</td>
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<tr>
<td>Genetics Image: DNA Structure</td>
</tr>
<tr>
<td>Nature of Science Image: DNA Technician</td>
</tr>
<tr>
<td>Genetics Image: Human Genome</td>
</tr>
<tr>
<td>Genetics Image: DNA Sequence</td>
</tr>
</tbody>
</table>

| **Interactive Media Activity:** Genetics    |
| **Interactivity:** Understanding Genetic Engineering |

| **Link:** Interactive Science: Life Science Online |
| Student Editions, Cells and Heredity, Chapter 5, pp. 134-155 |

## ECOLOGY: INTERACTIONS OF LIVING SYSTEMS AND THE ENVIRONMENT

### Standard 7.EC.5:
The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environments.

<table>
<thead>
<tr>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NBC Learn:</strong> Ecosystems and Biomes Video: Global Warming—Ecosystems Could Disappear</td>
</tr>
<tr>
<td><strong>Video:</strong> Ecology Video: Clown(fish)ing Around</td>
</tr>
<tr>
<td>Ecology Video: How Do You Count, Deer?</td>
</tr>
<tr>
<td>Ecology Video: Nature’s Tangled Web</td>
</tr>
<tr>
<td>Investigative Processes Video: Census Consensus</td>
</tr>
</tbody>
</table>

| **Document:** Earth's Surface Lab: Investigating Soils and Drainage |
| Earth's Water Lab: Soil Percolation          |
| Ecology Lab: Competition and Predation      |
| Ecology Lab: Elbow Room                      |
| Ecology Lesson: Ecosystems Gooru Webquest   |
| Ecology Lesson: Food Webs Gooru Webquest    |
| Ecology Lesson: Invasive Species Gooru Webquest |
(Continued)

**Standard 7.EC.5:** The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environments.

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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</th>
<th>Pearson OLE Online Learning Exchange</th>
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</table>
| **Image:** Animals Image: Brood Parasite  
Animals Image: Brown Bear
Animals Image: Food Competition
Animals Image: Reindeer Herd
Animals Image: Remoras
Animals Image: Salamander
Animals Image: Sea Otter
Animals Image: Spider Web
Animals Image: Water Snake
Diversity of Life Image: Coral Reef
Ecology Image: Coyote Prey
Ecology Image: Cranes Roosting
Ecology Image: Lion Eating Zebra
Ecology Image: Loosestrife
Ecology Image: Succession
Ecology Image: Turtle Predation
Plants Image: Kudzu
Plants Image: Strangler Fig
Plants Image: Sundew
Plants Image: Venus Flytrap
Viruses, Fungi, and Microorganisms Image: Bracket Fungi

**Interactive Media Activity:** Ecology  
Interactivity: An Ecological Mystery
Ecology Interactivity: Energy Pyramid
Ecology Interactivity: Predator-Prey Interactions
Ecology Interactivity: Primary and Secondary Succession
Ecology Interactivity: Rabbit Population Growth
Ecology Interactivity: Where's All the Food?

**Link:** Interactive Science: Life Science Online Student Editions, Ecology and Environment
Interactive Science: Earth Science Online Student Editions, Earth’s Surface
## South Carolina Academic Standards and Performance Indicators for Science – Grade 7

### 7.EC.5A. Conceptual Understanding:
In all ecosystems, organisms and populations of organisms depend on their environmental interactions with other living things (biotic factors) and with physical (abiotic) factors (such as light, temperature, water, or soil quality). Disruptions to any component of an ecosystem can lead to shifts in its diversity and abundance of populations.

**Performance Indicators:** Students who demonstrate this understanding can:

#### 7.EC.5A.1 Develop and use models to describe the characteristics of the levels of organization within ecosystems (including species, populations, communities, ecosystems, and biomes).

**Assets**
- NBC Learn: Ecosystems and Biomes Video: Global Warming—Ecosystems Could Disappear
- Populations Video: Yellowstone's Grey Wolf Population—From 66 to 850 in 10 Years
- Video: Ecology Video: Nature's Tangled Web
- Video: Ecology Video: Clownfishing Around
- Document: Ecology Lesson: Ecosystems Gooru Webquest
- Ecology Lesson: Food Webs Gooru Webquest
- Image: Animals Image: Food Competition
- Animals Image: Sea Otter
- Ecology Image: Coyote Prey
- Plants Image: Kudzu
- Ecology Image: Loosestrife
- Diversity of Life Image: Coral Reef
- Viruses, Fungi, and Microorganisms Image: Bracket Fungi
- Ecology Image: Cranes Roosting
- Animals Image: Reindeer Herd

**Interactive Media Activity:**
- Ecology Interactivity: An Ecological Mystery
- Ecology Interactivity: Rabbit Population Growth

**Link:** Interactive Science: Life Science Online Student Editions, Ecology and Environment, Chapters 1-2, pp 4-75

#### 7.EC.5A.2 Construct explanations of how soil quality (including composition, texture, particle size, permeability, and pH) affects the characteristics of an ecosystem using evidence from soil profiles.

**Assets**
- Document: Earth's Water Lab: Soil Percolation
- Earth's Surface Lab: Investigating Soils and Drainage

**Interactive Media Activity:**
- Link: Interactive Science: Earth Science Online Student Editions, Earth’s Surface, Chapter 3, pp. 70-79
A Correlation of Pearson OLE, Grades 6-8, to the South Carolina Academic Standards and Performance Indicators for Science

<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</th>
<th>Pearson OLE Online Learning Exchange</th>
</tr>
</thead>
</table>
| **7.EC.5A.3** Analyze and interpret data to predict changes in the number of organisms within a population when certain changes occur to the physical environment (such as changes due to natural hazards or limiting factors). | **Assets**
**NBC Learn:** Ecosystems and Biomes Video: Global Warming—Ecosystems Could Disappear
Populations Video: Yellowstone's Grey Wolf Population—From 66 to 850 in 10 Years
**Video:** Ecology Video: How Do You Count, Deer?
Investigative Processes Video: Census Consensus
**Document:** Ecology Lesson: Ecosystems Gooru Webquest
**Image:** Ecology Image: Succession
**Interactive Media Activity:** Ecology Interactivity: Primary and Secondary Succession
Ecology Interactivity: An Ecological Mystery
Ecology Interactivity: Rabbit Population Growth
**Link:** Interactive Science: Life Science Online Student Editions, Ecology and Environment, Chapter 1, pp. 10-17 |
<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</th>
<th>Pearson OLE Online Learning Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7.EC.5B. Conceptual Understanding:</strong> Organisms in all ecosystems interact with and depend upon each other. Organisms with similar needs compete for limited resources. Food webs and energy pyramids are models that demonstrate how energy is transferred within an ecosystem.</td>
<td><strong>Performance Indicators:</strong> Students who demonstrate this understanding can:</td>
</tr>
</tbody>
</table>
| **7.EC.5B.1** Develop and use models to explain how organisms interact in a competitive or mutually beneficial relationship for food, shelter, or space (including competition, mutualism, commensalism, parasitism, and predator-prey relationships). | **Assets**
Video: Ecology Video: Clown(fish)ing Around
Document: Ecology Lesson: Ecosystems Gooru Webquest
Ecology Lesson: Food Webs Gooru Webquest
Ecology Lab: Competition and Predation
Image: Animals Image: Food Competition
Animals Image: Sea Otter
Ecology Image: Coyote Prey
Animals Image: Remoras
Animals Image: Salamander
Animals Image: Water Snake
Ecology Image: Turtle Predation
Animals Image: Spider Web
Plants Image: Venus Flytrap
Plants Image: Strangler Fig
Animals Image: Brown Bear
Plants Image: Sundew
Ecology Image: Lion Eating Zebra
Viruses, Fungi, and Microorganisms Image: Bracket Fungi
Animals Image: Brood Parasite
**Interactive Media Activity:** Ecology
Interactivity: Primary and Secondary Succession
Ecology Interactivity: Where's All the Food?
Ecology Interactivity: An Ecological Mystery
Ecology Interactivity: Predator-Prey Interactions
Ecology Interactivity: Rabbit Population Growth
Link: Interactive Science: Life Science Online Student Editions, Ecology and Environment, Chapter 1, pp. 18-27 |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 7

<table>
<thead>
<tr>
<th>7.EC.5B.2</th>
<th>Develop and use models (food webs and energy pyramids) to exemplify how the transfer of energy in an ecosystem supports the concept that energy is conserved.</th>
</tr>
</thead>
</table>
| **Assets** | Ecology Video: Nature's Tangled Web  
Document: Ecology Lesson: Ecosystems Gooru Webquest  
Ecology Lesson: Food Webs Gooru Webquest  
Image: Animals Image: Food Competition  
Animals Image: Sea Otter  
Ecology Image: Coyote Prey  
Animals Image: Salamander  
Animals Image: Water Snake  
Ecology Image: Turtle Predation  
Animals Image: Spider Web  
Plants Image: Venus Flytrap  
Animals Image: Brown Bear  
Plants Image: Sundew  
Ecology Image: Lion Eating Zebra  
**Interactive Media Activity:** Ecology  
Interactivity: Where's All the Food?  
Ecology Interactivity: Energy Pyramid  
**Link:** Interactive Science: Life Science Online Student Editions, Ecology and Environment, Chapter 2, pp. 42-49 |

<table>
<thead>
<tr>
<th>7.EC.5B.3</th>
<th>Analyze and interpret data to predict how changes in the number of organisms of one species affects the balance of an ecosystem.</th>
</tr>
</thead>
</table>
| **Assets** | NBC Learn: Ecosystems and Biomes Video: Global Warming—Ecosystems Could Disappear  
Populations Video: Yellowstone's Grey Wolf  
Population—From 66 to 850 in 10 Years  
Video: Ecology Video: How Do You Count, Deer?  
Ecology Video: Nature's Tangled Web  
Investigative Processes Video: Census Consensus  
Document: Ecology Lesson: Invasive Species Gooru Webquest  
Ecology Lab: Elbow Room  
Image: Plants Image: Kudzu  
**Interactive Media Activity:** Ecology  
Interactivity: Primary and Secondary Succession  
Ecology Interactivity: Where's All the Food?  
Ecology Interactivity: An Ecological Mystery  
Ecology Interactivity: Rabbit Population Growth  
**Link:** Interactive Science: Life Science Online Student Editions, Ecology and Environment, Chapter 1, pp. 10-17 and 28-31 |
<table>
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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 7</th>
<th>Pearson OLE Online Learning Exchange</th>
</tr>
</thead>
</table>
| **7.EC.5B.4** Define problems caused by the introduction of a new species in an environment and design devices or solutions to minimize the impact(s) to the balance of an ecosystem. | **Assets**  
**NBC Learn:** Human Impact Video: Non-Native Giant Goldfish Invade Lake Tahoe  
**Document:** Ecology Lesson: Invasive Species  
**Image:** Plants Image: Kudzu  
**Ecology Image:** Loosestrife  
**Interactive Media Activity:** Ecology Interactivity: Where's All the Food?  
**Link:** Interactive Science: Life Science Online Student Editions, Ecology and Environment, Chapter 2, p. 74 |
### A Correlation of Pearson OLE, Grades 6-8, to the South Carolina Academic Standards and Performance Indicators for Science

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<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
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<tbody>
<tr>
<td><strong>GRADE EIGHT</strong></td>
<td></td>
</tr>
<tr>
<td><strong>SCIENCE AND ENGINEERING PRACTICES</strong></td>
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</tr>
<tr>
<td><strong>NOTE</strong>: Scientific investigations should always be done in the context of content knowledge expected at this grade level. The standard describes how students should learn and demonstrate knowledge of the content outlined in the other standards.</td>
<td></td>
</tr>
<tr>
<td><strong>Standard 8.S.1</strong>: The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content.</td>
<td><strong>Assets</strong></td>
</tr>
<tr>
<td><strong>NBC Learn</strong>: Animal Behavior Video: Inside a Chimpanzee Research Lab</td>
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</tr>
<tr>
<td>Animal Structure and Function Video: Engineering a Solution for Penguins' Aching Feet</td>
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<tr>
<td><strong>Video</strong>:</td>
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<tr>
<td>Earth's Surface Video: Building a Dinosaur 101</td>
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<tr>
<td>Ecology Video: How Do You Count, Deer?</td>
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<tr>
<td>Ecology Video: The Great Macaw Debate</td>
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<tr>
<td>Energy Video: Waves of the Future--Electricity from the Ocean?</td>
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<td>Forces Video: Remodeling Stonehenge</td>
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<td>Genetics Video: Genetics Take Root</td>
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<td>Investigative Processes Video: Baboon Research</td>
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<td>Investigative Processes Video: Principles of Scientific Principles</td>
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<td>Nature of Science Lab: Storm Safety</td>
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<tr>
<td>Nature of Science Video: Asteroid Mining</td>
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<td>Nature of Science Video: Earth's Largest Radio Telescope</td>
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<td>Nature of Science Video: Environmental Control on the ISS</td>
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<td>Nature of Science Video: Farming the Wind</td>
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<td>Nature of Science Video: Fracking for Energy Resources</td>
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<td>Nature of Science Video: GPS Today--Mapping with Satellites</td>
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<td>Nature of Science Video: Mimicking Nature</td>
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<td>Nature of Science Video: NASA and a Dinosaur Named Dakota</td>
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<td>Nature of Science Video: Red Shift and the Expanding Universe</td>
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<td>Nature of Science Video: TriATHLETE - The Engineering Design Process in Action</td>
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<td>Nature of Science Video: What Is Science, Anyway?</td>
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<tr>
<td>Scientific Measurement Video: Measuring Up</td>
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<tr>
<td>The Atmosphere Lesson: Ozone Hole Gooru Webquest</td>
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<tr>
<td><strong>(Continued)</strong></td>
<td><strong>Image:</strong></td>
</tr>
</tbody>
</table>
| **Standard 8.S.1:** The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content. | Electricity and Magnetism Image: Maglev Train  
Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet  
Forces Image: Rube Goldberg Machine  
Genetics Image: Human Genome  
Investigative Processes Image: Lab Equipment  
Investigative Processes Image: Petri Dishes  
Investigative Processes Image: Student Lab Safety  
Investigative Processes Image: Surveyor  
Light Image: Double Slit Experiment  
Light Image: Optic Fibers  
Material Image: Selenium Photocell  
Natural Resources Image: Wind Farm  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Laboratory Notebook  
Nature of Science Image: Marine Biology  
Nature of Science Image: Optical Topography Device  
Nature of Science Image: Satellite Signals  
Nature of Science Image: Science Teacher  
Nature of Science Lab: Keeping Flowers Fresh  
**Interactive Media Activity:** Astronomy and Space Interactivity: Build an Orbiter  
Cells Interactivity: How Can You Observe Cells?  
Earth's Structure Interactivity: Earthquake Engineering  
Earth's Structure Interactivity: Monitoring a Volcano  
Earth's Water Interactivity: Mutation Mystery  
Electricity and Magnetism Interactivity: Discovering Ohm’s Law  
Forces Interactivity: Inclined Planes: Work of the Egyptians  
Genetics Image: Human Genome  
Genetics Interactivity: DNA Fingerprinting  
Genetics Interactivity: Mendel’s Experiments  
Investigative Processes Interactivity: Average Speed for the Win  
Investigative Processes Interactivity: Global Positioning System  
Investigative Processes Interactivity: How Are Units Useful?  
Investigative Processes Interactivity: Intro to the Virtual Lab  
Investigative Processes Interactivity: Plotting a Line Graph  
Investigative Processes Interactivity: Safety in the Physical Science Lab  
Investigative Processes Interactivity: The Need for Numbers  
Investigative Processes Interactivity: Tools Used in Physical Science |
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<td><strong>Standard 8.S.1:</strong> The student will use the science and engineering practices, including the processes and skills of scientific inquiry, to develop understandings of science content. (Continued)</td>
<td>Investigative Processes Interactivity: Universe at Different Scales</td>
</tr>
<tr>
<td></td>
<td>Investigative Processes Interactivity: Why Make a Model?</td>
</tr>
<tr>
<td></td>
<td>Nature of Science Image: DNA Sequence</td>
</tr>
<tr>
<td></td>
<td>Nature of Science Interactivity: A Walk in the Forest</td>
</tr>
<tr>
<td></td>
<td>Nature of Science Interactivity: Building a Theory</td>
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<tr>
<td></td>
<td>Nature of Science Interactivity: Evolving Technology</td>
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<td></td>
<td>Nature of Science Interactivity: Exploring Engineering</td>
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<td></td>
<td>Nature of Science Interactivity: Inquiry Diagram</td>
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<td></td>
<td>Nature of Science Interactivity: Making Observations of Our Solar System</td>
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<tr>
<td></td>
<td>Nature of Science Interactivity: Redi’s and Pasteur’s Experiments</td>
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<td>Nature of Science Interactivity: Reviving the 1918 Virus</td>
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<td>Nature of Science Interactivity: Scientific Stumbling Blocks</td>
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<td>Nature of Science Interactivity: Space Spinoffs</td>
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<td>Nature of Science Interactivity: When Science Sparks Controversy</td>
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<td>Nature of Science Interactivity: Where Did Computers Come From?</td>
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<tr>
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<td>Nature of Science Video: What Is Science, Anyway?</td>
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<tr>
<td><strong>Link:</strong> Interactive Science: Earth Science Online Student Editions, Science and Technology Investigative Processes Video: Scientific Method Overview</td>
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<td>Nature of Science Interactivity: A Student’s Guide to Global Climate Change</td>
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<td>Nature of Science Interactivity: Aviary Architect</td>
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<td>Nature of Science Interactivity: Build a Bridge</td>
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<td>Nature of Science Interactivity: Construct an Aqueduct</td>
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<td>Nature of Science Interactivity: Scientific Method Lab</td>
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<td>Scientific Measurement Video: How Folding Paper Can Get You to the Moon</td>
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</tbody>
</table>
### 8.S.1A. Conceptual Understanding:
The practices of science and engineering support the development of science concepts, develop the habits of mind that are necessary for scientific thinking, and allow students to engage in science in ways that are similar to those used by scientists and engineers.

**Performance Indicators:** Students who demonstrate this understanding can:

<p>| <strong>8.S.1A.1</strong> Ask questions to (1) generate hypotheses for scientific investigations, (2) refine models, explanations, or designs, or (3) extend the results of investigations or challenge claims. |
|---|---|</p>
<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
<th>Pearson OLE Online Learning Exchange</th>
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### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
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<tbody>
<tr>
<td><strong>8.S.1A.2</strong> Develop, use, and refine models to (1) understand or represent phenomena, processes, and relationships, (2) test devices or solutions, or (3) communicate ideas to others.</td>
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<tr>
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<tbody>
<tr>
<td><strong>(Continued)</strong> Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105</td>
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<tr>
<th>Assets</th>
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<tbody>
<tr>
<td><strong>NBC Learn:</strong> Animal Behavior Video: Inside a Chimpanzee Research Lab</td>
</tr>
<tr>
<td><strong>Video:</strong> Nature of Science Video: What Is Science, Anyway?</td>
</tr>
<tr>
<td>Investigative Processes Video: Baboon Research</td>
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<tr>
<td>Investigative Processes Video: Principles of Scientific Principles</td>
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<tr>
<td><strong>Document:</strong> Investigative Processes Lab: Theories and Laws</td>
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<tr>
<td>Electricity and Magnetism Lab: Electrons and Magnetism</td>
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<tr>
<td>Earth's Surface Lab: Exploring Geologic Time Through Core Samples</td>
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<tr>
<td>Nature of Science Lab: Keeping Flowers Fresh</td>
</tr>
<tr>
<td>Nature of Science Lab: Piecing Information Together</td>
</tr>
<tr>
<td>Investigative Processes Lab: Safety Equipment in Your School?</td>
</tr>
<tr>
<td>Scientific Measurement Lab: Measuring Mass</td>
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<tr>
<td>Diversity of Life Lab: Nature at Work</td>
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<td>Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants</td>
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<td>Sound Lab: Changing Pitch</td>
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<tr>
<td>Natural Resources Lab: Waste Away</td>
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<tr>
<td>Ecology Lab: Carbon and Oxygen Blues</td>
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<tr>
<td>Investigative Processes Lab: Be Prepared</td>
</tr>
<tr>
<td>Animals Lab: One for Al</td>
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<tr>
<td><strong>Image:</strong> Light Image: Double Slit Experiment</td>
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<tr>
<td>Investigative Processes Image: Surveyor</td>
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<tr>
<td>Nature of Science Image: Laboratory Notebook</td>
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<td>Nature of Science Image: Science Teacher</td>
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<tr>
<td>Nature of Science Image: Marine Biology</td>
</tr>
<tr>
<td>Investigative Processes Image: Student Lab Safety</td>
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<td>Investigative Processes Image: Lab Equipment</td>
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<td>Investigative Processes Image: Petri Dishes</td>
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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
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<tbody>
<tr>
<td>(Continued) 8.S.1A.3 Plan and conduct controlled scientific investigations to answer questions, test hypotheses, and develop explanations: (1) formulate scientific questions and testable hypotheses, (2) identify materials, procedures, and variables, (3) select and use appropriate tools or instruments to collect qualitative and quantitative data, and (4) record and represent data in an appropriate form. Use appropriate safety procedures.</td>
<td>(Continued) <strong>Interactive Media Activity:</strong> Nature of Science Interactivity: What Is Scientific Inquiry? Nature of Science Interactivity: Scientific Stumbling Blocks Nature of Science Interactivity: Building a Theory Genetics Interactivity: Mendel's Experiments Nature of Science Interactivity: Inquiry Diagram Nature of Science Interactivity: Redi's and Pasteur's Experiments Investigative Processes Interactivity: Intro to the Virtual Lab Cells Interactivity: How Can You Observe Cells? Investigative Processes Interactivity: Safety in the Physical Science Lab Investigative Processes Interactivity: Tools Used in Physical Science <strong>Link:</strong> Nature of Science Interactivity: A Student's Guide to Global Climate Change Investigative Processes Video: Scientific Method Overview Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105</td>
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| **8.S.1A.4** Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulation, graphing, or statistical analysis) to (1) reveal patterns and construct meaning or (2) support hypotheses, explanations, claims, or designs. | **Assets**  
Video: Earth’s Surface Video: Building a Dinosaur 101  
Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Investigative Processes Video: Baboon Research  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Nature of Science Lab: History of Measurement  
Electricity and Magnetism Lab: Electrons and Magnetism  
Astronomy and Space Lesson: The Big Bang  
Gooru Webquest  
Earth’s Structure Lab: Moving the Continents  
Natural Resources Lab: Future Energy Use  
Diversity of Life Lesson: Natural Selection Gooru Webquest  
Earth’s Surface Lab: Exploring Geologic Time Through Core Samples  
Nature of Science Lab: Keeping Flowers Fresh  
Scientific Measurement Lab: Measuring Mass  
Diversity of Life Lab: Nature at Work  
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants  
Sound Lab: Changing Pitch  
Natural Resources Lab: Waste Away  
Ecology Lab: Carbon and Oxygen Blues  
Animals Lab: One for Al  
**Image:** Light Image: Double Slit Experiment  
Nature of Science Image: Laboratory Notebook  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Science Teacher  
Nature of Science Image: Marine Biology |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

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<th>8.S.1A.4 Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulation, graphing, or statistical analysis) to (1) reveal patterns and construct meaning or (2) support hypotheses, explanations, claims, or designs.</th>
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<td>Nature of Science Interactivity: Inquiry Diagram</td>
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<td>Nature of Science Interactivity: Reviving the 1918 Virus</td>
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<td>Earth's Water Interactivity: Mutation Mystery</td>
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<tr>
<td>Earth's Structure Interactivity: Monitoring a Volcano</td>
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<td>Nature of Science Interactivity: Making Observations of Our Solar System</td>
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<td>Genetics Interactivity: DNA Fingerprinting</td>
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<td>Nature of Science Interactivity: A Walk in the Forest</td>
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<tr>
<td>Investigative Processes Interactivity: Plotting a Line Graph</td>
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<td>Electricity and Magnetism Interactivity: Discovering Ohm's Law</td>
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<td>Investigative Processes Interactivity: The Need for Numbers</td>
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<tr>
<td><strong>Link:</strong> Nature of Science Interactivity: A Student's Guide to Global Climate Change</td>
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<td>Investigative Processes Video: Scientific Method Overview</td>
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<td>Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105</td>
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| **8.S.1A.5** Use mathematical and computational thinking to (1) use and manipulate appropriate metric units, (2) collect and analyze data, (3) express relationships between variables for models and investigations, or (4) use grade-level appropriate statistics to analyze data. | **Assets**  
Video: Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Scientific Measurement Video: Measuring Up  
Investigative Processes Video: Principles of Scientific Principles  
**Document:** Investigative Processes Lab: Theories and Laws  
Nature of Science Lab: History of Measurement  
Natural Resources Lab: Future Energy Use  
Nature of Science Lab: Keeping Flowers Fresh  
Scientific Measurement Lab: Measuring Mass  
Diversity of Life Lab: Nature at Work  
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants  
Viruses Lab: How Many Viruses Fit on a Pin?  
**Image:** Nature of Science Image: Laboratory Notebook  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Image: Marine Biology  
**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?  
Nature of Science Interactivity: Scientific Stumbling Blocks  
Nature of Science Interactivity: Building a Theory  
Genetics Interactivity: Mendel's Experiments  
Nature of Science Interactivity: Inquiry Diagram  
Nature of Science Interactivity: A Walk in the Forest  
Investigative Processes Interactivity: Plotting a Line Graph  
Electricity and Magnetism Interactivity: Discovering Ohm's Law  
Investigative Processes Interactivity: Universe at Different Scales  
Investigative Processes Interactivity: How Are Units Useful?  
Investigative Processes Interactivity: The Need for Numbers  
Investigative Processes Interactivity: Average Speed for the Win  
**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change  
Scientific Measurement Video: How Folding Paper Can Get You to the Moon  
Investigative Processes Video: Scientific Method Overview Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105 |
## A Correlation of Pearson OLE, Grades 6-8, to the South Carolina Academic Standards and Performance Indicators for Science

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| **8.S.1A.6** Construct explanations of phenomena using (1) primary or secondary scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams. | **Assets**

**Video:** Nature of Science Video: What Is Science, Anyway?
Investigative Processes Video: Baboon Research
Investigative Processes Video: Principles of Scientific Principles

**Document:** Investigative Processes Lab: Theories and Laws
Electricity and Magnetism Lab: Electrons and Magnetism
Astronomy and Space Lesson: The Big Bang
Gooru Webquest
Earth's Structure Lab: Moving the Continents
Natural Resources Lab: Future Energy Use
Diversity of Life Lesson: Natural Selection Gooru Webquest
The Atmosphere Lesson: Ozone Hole Gooru Webquest
Nature of Science Lab: Keeping Flowers Fresh
Scientific Measurement Lab: Measuring Mass
Diversity of Life Lab: Nature at Work
Viruses, Fungi, and Microorganisms Lab: Comparing Disinfectants
Sound Lab: Changing Pitch
Natural Resources Lab: Waste Away
Ecology Lab: Carbon and Oxygen Blues
Animals Lab: One for Al

**Image:** Light Image: Double Slit Experiment
Nature of Science Image: Laboratory Notebook
Genetics Image: Human Genome
Nature of Science Image: DNA Sequence
Nature of Science Image: Science Teacher

**Interactive Media Activity:** Nature of Science Interactivity: What Is Scientific Inquiry?
Nature of Science Interactivity: Scientific Stumbling Blocks
Nature of Science Interactivity: Building a Theory
Genetics Interactivity: Mendel's Experiments
Nature of Science Interactivity: Inquiry Diagram
Earth's Water Interactivity: Mutation Mystery
Earth's Structure Interactivity: Monitoring a Volcano
Nature of Science Interactivity: Making Observations of Our Solar System
Nature of Science Interactivity: A Walk in the Forest
Electricity and Magnetism Interactivity: Discovering Ohm's Law |
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</table>
| **8.S.1A.8** Obtain and evaluate scientific information to (1) answer questions, (2) explain or describe phenomena, (3) develop models, (4) evaluate hypotheses, explanations, claims, or designs or (5) identify and/or fill gaps in knowledge. Communicate using the conventions and expectations of scientific writing or oral presentations by (1) evaluating grade-appropriate primary or secondary scientific literature, or (2) reporting the results of student experimental investigations. | **Assets**  
**NBC Learn:** Animal Structure and Function  
**Video:** Engineering a Solution for Penguins’ Aching Feet  
**Video:** Nature of Science Video: Asteroid Mining  
Ecology Video: How Do You Count, Deer?  
Nature of Science Video: What Is Science, Anyway?  
Genetics Video: Genetics Take Root  
Nature of Science Video: Red Shift and the Expanding Universe  
**Document:** Earth's Water Lesson: Ocean Dead Zones Gooru Webquest  
Astronomy and Space Lesson: The Big Bang Gooru Webquest  
Earth's Structure Lab: Moving the Continents Gooru Webquest  
Diversity of Life Lesson: Natural Selection Gooru Webquest  
The Atmosphere Lesson: Ozone Hole Gooru Webquest  
Scientific Measurement Lab: Measuring Mass  
Matter Lesson: Atomic Models Gooru Webquest  
**Image:** Investigative Processes Image: Surveyor  
Nature of Science Image: Science Teacher  
Nature of Science Lab: Keeping Flowers Fresh  
**Interactive Media Activity:** Nature of Science Interactivity: When Science Sparks Controversy  
Genetics Image: Human Genome  
Nature of Science Image: DNA Sequence  
Nature of Science Interactivity: What Is Scientific Inquiry?  
Nature of Science Interactivity: Scientific Stumbling Blocks  
Nature of Science Interactivity: Building a Theory  
Nature of Science Interactivity: Inquiry Diagram  
Nature of Science Interactivity: Reviving the 1918 Virus  
Nature of Science Interactivity: Making Observations of Our Solar System  
Nature of Science Interactivity: A Walk in the Forest  
Investigative Processes Interactivity: Plotting a Line Graph  
**Link:** Nature of Science Interactivity: A Student's Guide to Global Climate Change  
Nature of Science Interactivity: Scientific Method Lab  
Interactive Science: Earth Science Online Student Editions; Science and Technology; Chapter 1, pp. 4-26; Chapter 3, pp. 70-105 |
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<td><strong>Performance Indicators:</strong> Students who demonstrate this understanding can:</td>
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<tr>
<td><strong>8.S.1B.1</strong> Construct devices or design solutions using scientific knowledge to solve specific problems or needs: (1) ask questions to identify problems or needs, (2) ask questions about the criteria and constraints of the device or solutions, (3) generate and communicate ideas for possible devices or solutions, (4) build and test devices or solutions, (5) determine if the devices or solutions solved the problem and refine the design if needed, and (6) communicate the results.</td>
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<p>| <strong>Image:</strong> Nature of Science Image: Satellite Signals | <strong>Image:</strong> Nature of Science Image: Satellite Signals |
| Light Image: Optic Fibers | Light Image: Optic Fibers |
| Investigative Processes Image: Surveyor | Investigative Processes Image: Surveyor |
| Nature of Science Image: Optical Topography Device | Nature of Science Image: Optical Topography Device |
| Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet | Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet |
| Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet | Electricity and Magnetism Image: Nuclear Magnetic Resonance (NMRI) Electromagnet |
| Nature of Science Image: Laboratory Notebook | Nature of Science Image: Laboratory Notebook |
| Genetics Image: Human Genome | Genetics Image: Human Genome |
| Nature of Science Image: DNA Sequence | Nature of Science Image: DNA Sequence |
| Natural Resources Image: Wind Farm | Natural Resources Image: Wind Farm |
| Electricity and Magnetism Image: Maglev Train | Electricity and Magnetism Image: Maglev Train |
| <strong>Interactive Media Activity:</strong> Nature of Science Video: What Is Science, Anyway? | <strong>Interactive Media Activity:</strong> Nature of Science Video: What Is Science, Anyway? |
| Astronomy and Space Interactivity: Build an Orbiter | Astronomy and Space Interactivity: Build an Orbiter |
| Earth's Structure Interactivity: Earthquake Engineering | Earth's Structure Interactivity: Earthquake Engineering |
| Nature of Science Interactivity: Exploring Engineering | Nature of Science Interactivity: Exploring Engineering |
| Earth's Water Interactivity: Mutation Mystery | Earth's Water Interactivity: Mutation Mystery |
| Nature of Science Interactivity: Space Spinoffs | Nature of Science Interactivity: Space Spinoffs |
| Nature of Science Interactivity: Evolving Technology | Nature of Science Interactivity: Evolving Technology |
| Investigative Processes Interactivity: Global Positioning System | Investigative Processes Interactivity: Global Positioning System |
| <strong>Link:</strong> Nature of Science Interactivity: Build a Bridge | <strong>Link:</strong> Nature of Science Interactivity: Build a Bridge |
| Nature of Science Interactivity: Construct an Aqueduct | Nature of Science Interactivity: Construct an Aqueduct |</p>
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<tr>
<td><strong>PHYSICAL SCIENCE: FORCES AND MOTION</strong></td>
<td><strong>Assets</strong></td>
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</tbody>
</table>
| **Standard 8.P.2:** The student will demonstrate an understanding of the effects of forces on the motion and stability of an object. | **NBC Learn:** Friction Video: Science Friction—Curling  
Newton's Laws of Motion Video: Nick Goepper & the Physics of Slopestyle Skiing  
Newton's Laws of Motion Video: Science of NFL Football—Newton's Third Law of Motion  
Speed, Velocity, and Acceleration Video: G-Forces and the Safety of Roller Coaster  
**Video:** Forces Video: Fun With Forces (Part 1)  
Forces Video: Fun With Forces (Part 2)  
Forces Video: Skydiving  
Motion Video: Sir Isaac Visits the Circus  
Motion Video: The Adventures of Velocity Girl  
**Document:** Astronomy and Space Lesson: Mystery of Gravity Gooru Webquest  
Forces Lab: Forced to Accelerate  
Forces Lab: Sticky Sneakers  
**Image:** Astronomy and Space Image: Satellite Orbit  
Energy Image: Roller Coaster Energy  
Forces Image: Buoyant Force  
Motion Image: Dog Sled  
Motion Image: Gymnast Flipping  
Motion Image: Law of Inertia  
Motion Image: Law of Inertia  
Motion Image: Newton's First Law of Motion  
Motion Image: Newton's Second Law of Motion  
Motion Image: Newton's Third Law of Motion  
Motion Image: Shopping Cart  
Waves Image: Swing  
**Interactive Media Activity:** Forces  
Interactivity: Force and Motion in Everyday Life  
Forces Interactivity: Friction  
Forces Interactivity: Get a Rocket into Orbit  
Forces Interactivity: What Affects Gravity?  
Motion Interactivity: How Can You Measure Acceleration?  
Motion Interactivity: Math of Speed and Acceleration  
**Link:** Astronomy and Space Interactivity: Watt's Notebook on Force and Motion  
Energy Interactivity: Energy Skate Park  
Forces Interactivity: Mission Impossible High—Friction  
Interactive Science: Physical Science Online Student Editions, Forces and Energy  
Motion Interactivity: Graphing Motion  
Motion Interactivity: Projectile Motion  

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| **8.P.2A. Conceptual Understanding:** Motion occurs when there is a change in position of an object with respect to a reference point. The final position of an object is determined by measuring the change in position and direction of the segments along a trip. While the speed of the object may vary during the total time it is moving, the average speed is the result of the total distance divided by the total time taken. Forces acting on an object can be balanced or unbalanced. Varying the amount of force or mass will affect the motion of an object. Inertia is the tendency of objects to resist any change in motion. | **Assets**

**NBC Learn:** Newton’s Laws of Motion Video: Nick Goepper & the Physics of Slopestyle Skiing
Speed, Velocity, and Acceleration Video: G-Forces and the Safety of Roller Coaster

**Video:** Motion Video: The Adventures of Velocity Girl
Motion Video: Sir Isaac Visits the Circus
Forces Video: Fun With Forces (Part 1)
Forces Video: Fun With Forces (Part 2)

**Document:** Forces Lab: Forced to Accelerate

**Image:** Energy Image: Roller Coaster Energy
Motion Image: Newton’s First Law of Motion
Motion Image: Law of Inertia
Motion Image: Newton’s Third Law of Motion
Motion Image: Newton’s Second Law of Motion
Motion Image: Dog Sled
Motion Image: Shopping Cart
Forces Image: Buoyant Force
Waves Image: Swing

**Interactive Media Activity:** Motion

Interactivity: How Can You Measure Acceleration?
Forces Interactivity: Force and Motion in Everyday Life
Forces Interactivity: Get a Rocket into Orbit
Forces Interactivity: What Affects Gravity?

**Link:** Motion Interactivity: Graphing Motion
Motion Interactivity: Projectile Motion
Energy Interactivity: Energy Skate Park
Astronomy and Space Interactivity: Watt’s Notebook on Force and Motion
Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 2, pp. 32-51

**Performance Indicators:** Students who demonstrate this understanding can:

**8.P.2A.1 Plan and conduct controlled scientific investigations to test how varying the amount of force or mass of an object affects the motion (speed and direction), shape, or orientation of an object.**
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

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| **8.P.2A.2** Develop and use models to compare and predict the resulting effect of balanced and unbalanced forces on an object’s motion in terms of magnitude and direction. | **Assets**

**Video:** Motion Video: The Adventures of Velocity Girl  
Motion Video: Sir Isaac Visits the Circus  
Forces Video: Fun With Forces (Part 1)  
Forces Video: Fun With Forces (Part 2)

**Document:** Forces Lab: Forced to Accelerate

**Image:** Energy Image: Roller Coaster Energy  
Motion Image: Newton’s First Law of Motion  
Motion Image: Law of Inertia  
Motion Image: Newton’s Third Law of Motion  
Motion Image: Newton’s Second Law of Motion  
Motion Image: Shopping Cart  
Motion Image: Dog Sled  
Forces Image: Buoyant Force  
Waves Image: Swing

**Interactive Media Activity:** Motion Interactivity: How Can You Measure Acceleration?  
Forces Interactivity: Force and Motion in Everyday Life  
Forces Interactivity: Get a Rocket into Orbit  
Forces Interactivity: What Affects Gravity?  
Forces Interactivity: What Affects Gravity?

**Link:** Motion Interactivity: Graphing Motion  
Motion Interactivity: Projectile Motion  
Astronomy and Space Interactivity: Watt’s Notebook on Force and Motion  
Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 2, pp. 32-51
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

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<th>Objective</th>
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</table>
| **8.P.2A.3** Construct explanations for the relationship between the mass of an object and the concept of inertia (Newton’s First Law of Motion). | **Assets**
| | Video: Motion Video: Sir Isaac Visits the Circus|
| | Video: Motion Video: Sir Isaac Visits the Circus|
| | Forces Video: Fun With Forces (Part 1)|
| | Forces Video: Fun With Forces (Part 2)|
| | **Document**: Forces Lab: Forced to Accelerate|
| | **Image**: Energy Image: Roller Coaster Energy|
| | Motion Image: Newton's First Law of Motion|
| | Motion Image: Law of Inertia|
| | Motion Image: Newton's Third Law of Motion|
| | Motion Image: Newton's Second Law of Motion|
| | Motion Image: Dog Sled|
| | Motion Image: Shopping Cart|
| | Waves Image: Swing|
| | **Interactive Media Activity**: Forces|
| | Interactivity: Force and Motion in Everyday Life|
| | Forces Interactivity: Get a Rocket into Orbit|
| | Forces Interactivity: What Affects Gravity?|
| | **Link**: Energy Interactivity: Energy Skate Park|
| | Astronomy and Space Interactivity: Watt's Notebook on Force and Motion|
| | Interactive Science: Physical Science Online|
| | Student Editions, Forces and Energy, Chapter 2, pp. 44-45|

| **8.P.2A.4** Analyze and interpret data to support claims that for every force exerted on an object there is an equal force exerted in the opposite direction (Newton’s Third Law of Motion). | **Assets**
<p>| | <strong>NBC Learn</strong>: Newton’s Laws of Motion Video: Science of NFL Football—Newton's Third Law of Motion|
| | Video: Motion Video: Sir Isaac Visits the Circus|
| | Motion Video: Sir Isaac Visits the Circus|
| | Forces Video: Fun With Forces (Part 1)|
| | Forces Video: Fun With Forces (Part 2)|
| | <strong>Document</strong>: Forces Lab: Forced to Accelerate|
| | <strong>Image</strong>: Energy Image: Roller Coaster Energy|
| | Motion Image: Newton's First Law of Motion|
| | Motion Image: Law of Inertia|
| | Motion Image: Newton's Third Law of Motion|
| | Motion Image: Newton's Second Law of Motion|
| | Motion Image: Gymnast Flipping|
| | Motion Image: Dog Sled|
| | Motion Image: Shopping Cart|
| | Waves Image: Swing|
| | <strong>Interactive Media Activity</strong>: Forces|
| | Interactivity: Force and Motion in Everyday Life|
| | Forces Interactivity: Get a Rocket into Orbit|
| | Forces Interactivity: What Affects Gravity?|
| | <strong>Link</strong>: Energy Interactivity: Energy Skate Park|
| | Interactive Science: Physical Science Online|
| | Student Editions, Forces and Energy, Chapter 2, pp. 48-49|</p>
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<tr>
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<th><strong>Pearson OLE Online Learning Exchange</strong></th>
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</thead>
</table>
| **8.P.2A.5** Analyze and interpret data to describe and predict the effects of forces (including gravitational and friction) on the speed and direction of an object. | **Assets**
**NBC Learn:** Friction Video: Science Friction—Curling
**Video:** Motion Video: The Adventures of Velocity Girl
Motion Video: Sir Isaac Visits the Circus
Forces Video: Skydiving
Forces Video: Fun With Forces (Part 1)
Forces Video: Fun With Forces (Part 2)
**Document:** Forces Lab: Forced to Accelerate
Astronomy and Space Lesson: Mystery of Gravity Gooru Webquest
Forces Lab: Sticky Sneakers
**Image:** Energy Image: Roller Coaster Energy
Motion Image: Newton's First Law of Motion
Motion Image: Law of Inertia
Motion Image: Newton's Third Law of Motion
Motion Image: Newton's Second Law of Motion
Motion Image: Dog Sled
Motion Image: Shopping Cart
Astronomy and Space Image: Satellite Orbit
Waves Image: Swing
**Interactive Media Activity:** Motion
Interactivity: Math of Speed and Acceleration
Forces Interactivity: Force and Motion in Everyday Life
Forces Interactivity: Get a Rocket into Orbit
Forces Interactivity: What Affects Gravity?
Forces Interactivity: Friction
**Link:** Motion Interactivity: Graphing Motion
Motion Interactivity: Projectile Motion
Forces Interactivity: Mission Impossible High—Friction
Energy Interactivity: Energy Skate Park
Astronomy and Space Interactivity: Watt's Notebook on Force and Motion
Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 2, pp. 32-51 |
| **8.P.2A.6** Use mathematical and computational thinking to generate graphs that represent the motion of an object’s position and speed as a function of time. | **Assets**
**Document:** Forces Lab: Forced to Accelerate
**Interactive Media Activity:** Motion
Interactivity: How Can You Measure Acceleration?
Motion Interactivity: Math of Speed and Acceleration
Forces Interactivity: Get a Rocket into Orbit
**Link:** Motion Interactivity: Graphing Motion
Energy Interactivity: Energy Skate Park
Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 1, pp. 14-21 |
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<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
<th>Pearson OLE Online Learning Exchange</th>
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</thead>
</table>
| **8.P.2A.7** Use mathematical and computational thinking to describe the relationship between the speed and velocity (including positive and negative expression of direction) of an object in determining average speed \(v=d/t\). | **Assets**
Document: Forces Lab: Forced to Accelerate
Interactive Media Activity: Motion
Interactive Activity: Math of Speed and Acceleration
**Link:** Motion Interactive: Graphing Motion
Interactive Science: Physical Science Online Student Editions, Forces and Energy, Chapter 1, pp. 8-15 |

**PHYSICAL SCIENCE: WAVES**

**Standard 8.P.3:** The student will demonstrate an understanding of the properties and behaviors of waves.

<table>
<thead>
<tr>
<th>Assets</th>
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</table>
| **Video:** Light Video: Why Is the Ocean Blue?
Light Video: Where Do Rainbows Come From? (Part 1)
Light Video: Where Do Rainbows Come From? (Part 2)
Waves Video: Extreme Wave Science!
**Document:** Light Lesson: Electromagnetic Spectrum Gooru Webquest
Sound Lab: How Can You Change Pitch?
**Image:** Electricity and Magnetism Image: Cell Phone Transmitter
Light Image: Color Samples
Light Image: Concave Mirror
Light Image: Convex Mirror
Light Image: Double Rainbow
Light Image: Jaguar Reflection
Light Image: Magnifying Glass
Light Image: Optic Fibers
Light Image: Prism
Light Image: Reflection
Light Image: Refraction
Nature of Science Image: Satellite Signals
Sound Image: Compression and Rarefaction
Waves Image: Longitudinal Wave
Waves Image: Transverse Wave
**Interactive Media Activity:** Light Interactivity: Bouncing and Bending Light
Light Interactivity: Color in Light
Light Interactivity: Refracting and Reflecting Telescopes
Light Lab: Parts of the Electromagnetic Spectrum
Sound Interactivity: Wave and Energy Movement
**Link:** Interactive Science: Life Science Online Student Editions, Human Body Systems
Interactive Science: Physical Science Online Student Editions, Sound and Light
Light Interactivity: Laser Challenge Game
Light Video: Fun Science About Sound, Light, and the Doppler Effect
Sound Interactivity: Wave on a String |
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<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
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</thead>
<tbody>
<tr>
<td><strong>8.P.3A. Conceptual Understanding:</strong> Waves (including sound and seismic waves, waves on water, and light waves) have energy and transfer energy when they interact with matter. Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter. All types of waves have some features in common. When waves interact, they superimpose upon or interfere with each other resulting in changes to the amplitude. Major modern technologies are based on waves and their interactions with matter.</td>
<td></td>
</tr>
<tr>
<td><strong>Performance Indicators:</strong> Students who demonstrate this understanding can:</td>
<td></td>
</tr>
</tbody>
</table>
| **8.P.3A.1 Construct explanations of the relationship between matter and energy based on the characteristics of mechanical and light waves.** | **Assets**
*Video:* Waves Video: Extreme Wave Science!
*Image:* Waves Image: Longitudinal Wave
Waves Image: Transverse Wave
Sound Image: Compression and Rarefaction
**Interactive Media Activity:** Sound
Interactivity: Wave and Energy Movement
**Link:** Sound Interactivity: Wave on a String
Interactive Science: Physical Science Online Student Editions, Sound and Light, Chapter 1, pp. 4-9 |
| **8.P.3A.2 Develop and use models to exemplify the basic properties of waves (including frequency, amplitude, wavelength, and speed).** | **Assets**
*Document:* Sound Lab: How Can You Change Pitch?
Light Lesson: Electromagnetic Spectrum Gooru Webquest
*Image:* Waves Image: Longitudinal Wave
Waves Image: Transverse Wave
Sound Image: Compression and Rarefaction
**Link:** Sound Interactivity: Wave on a String
Interactive Science: Physical Science Online Student Editions, Sound and Light, Chapter 1, pp. 10-15 |
<table>
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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
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</thead>
</table>
| **8.P.3A.3** Analyze and interpret data to describe the behavior of waves (including refraction, reflection, transmission, and absorption) as they interact with various materials. | **Assets**
Video: Light Video: Why Is the Ocean Blue?
Light Video: Where Do Rainbows Come From? (Part 1)
Light Video: Where Do Rainbows Come From? (Part 2)
Document: Light Lesson: Electromagnetic Spectrum Gooru Webquest
Image: Light Image: Concave Mirror
Light Image: Convex Mirror
Light Image: Magnifying Glass
Light Image: Double Rainbow
Light Image: Magnifying Glass
Light Image: Prism
Light Image: Refraction
Light Image: Reflection
Interactive Media Activity: Light Interactivity: Refraction, Reflection, and Rainbows
Light Interactivity: Refracting and Reflecting Telescopes
Light Interactivity: Bouncing and Bending Light
Light Lab: Parts of the Electromagnetic Spectrum
Light Interactivity: Color in Light
Link: Sound Interactivity: Wave on a String
Light Video: Fun Science About Sound, Light, and the Doppler Effect
Interactive Science: Physical Science Online Student Editions, Sound and Light, Chapter 1, pp. 16-23 |
| **8.P.3A.4** Analyze and interpret data to describe the behavior of mechanical waves as they intersect. | **Assets**
Link: Interactive Science: Physical Science Online Student Editions, Sound and Light, Chapter 1, pp. 16-23 |
| **8.P.3A.5** Construct explanations for how humans see color as a result of the transmission, absorption, and reflection of light waves by various materials. | **Assets**
Video: Light Video: Why Is the Ocean Blue?
Image: Light Image: Jaguar Reflection
Light Image: Color Samples
Link: Light Interactivity: Laser Challenge Game
Interactive Science: Physical Science Online Student Editions; Sound and Light, Chapter 4, pp. 118-121
Interactive Science: Life Science Online Student Editions, Human Body Systems, Chapter 3, pp. 229-232 |
<table>
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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
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</thead>
</table>
| **8.P.3A.6** Obtain and communicate information about how various instruments are used to extend human senses by transmitting and detecting waves (such as radio, television, cell phones, and wireless computer networks) to exemplify how technological advancements and designs meet human needs. | **Assets**  
Document: Light Lesson: Electromagnetic Spectrum Gooru Webquest  
Image: Light Image: Optic Fibers  
Electricity and Magnetism Image: Cell Phone Transmitter  
Nature of Science Image: Satellite Signals  
Link: Light Interactivity: Laser Challenge Game  
Interactive Science: Physical Science Online Student Editions, Sound and Light, Chapter 3, pp. 80-87 |

**EARTH SCIENCE: EARTH’S PLACE IN THE UNIVERSE**

**Standard 8.E.4:** The student will demonstrate an understanding of the universe and the predictable patterns caused by Earth’s movement in the solar system.

**Assets**  
Video: Astronomy and Space Video: 100 Meters to Neptune  
Astronomy and Space Video: Phased by the Moon!  
Astronomy and Space Video: Pluto To Earth  
Light Video: Reaching into Deep Space  
Document: Astronomy and Space Lesson: The Big Bang Gooru Webquest  
Earth’s Water Lesson: Ocean Tides Gooru Webques  
Image: Astronomy and Space Image: Array Radio Telescope  
Astronomy and Space Image: Bubble Nebula  
Astronomy and Space Image: Crux Constellation  
Astronomy and Space Image: Earth from Moon  
Astronomy and Space Image: Galaxy with Black Hole  
Astronomy and Space Image: Hubble Space Telescope  
Astronomy and Space Image: M51a Galaxy  
Astronomy and Space Image: Mars  
Astronomy and Space Image: Orion Nebula  
Astronomy and Space Image: Our Solar System  
Astronomy and Space Image: Solar Flare  
Astronomy and Space Image: Spitzer Space Telescope  
Astronomy and Space Image: Stellar Nebula  
Astronomy and Space Image: The Solar System  
Astronomy and Space Image: Very Large Array Telescope  
Light Image: Astronomical Observatory
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

**Standard 8.E.4:** The student will demonstrate an understanding of the universe and the predictable patterns caused by Earth’s movement in the solar system.

**Pearson OLE Online Learning Exchange**

*(Continued)*

**Interactive Media Activity:** Forces

Astronomy and Space Interactivity: Objects of the Solar System
Astronomy and Space Interactivity: Why Isn’t Pluto a Planet?
Astronomy and Space Interactivity: Lives of Stars

**Link:** Astronomy and Space Interactivity: Planet Impact
Astronomy and Space Video: Fun Science About the Moon
Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science
The Universe Video: Our Solar System to Scale

### 8.E.4A. Conceptual Understanding:

**8.E.4A.1** Obtain and communicate information to model the position of the Sun in the universe, the shapes and composition of galaxies, and the measurement unit needed to identify star and galaxy locations.

**Assets**

*Video:* Light Video: Reaching into Deep Space
Light Video: Reaching into Deep Space

*Image:* Astronomy and Space Image: Bubble Nebula
Astronomy and Space Image: Crux Constellation
Astronomy and Space Image: Galaxy with Black Hole
Astronomy and Space Image: M51a Galaxy
Astronomy and Space Image: Stellar Nebula
Astronomy and Space Image: Orion Nebula
Astronomy and Space Image: Bubble Nebula

**Interactive Media Activity:** Astronomy and Space Interactivity: Lives of Stars

**Link:** Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 4, pp. 132-157

**8.E.4A.2** Construct and analyze scientific arguments to support claims that the universe began with a period of extreme and rapid expansion using evidence from the composition of stars and gases and the motion of galaxies in the universe.

**Assets**

*Video:* Light Video: Reaching into Deep Space
*Document:* Astronomy and Space Lesson: The Big Bang Gooru Webquest

**Interactive Media Activity:** Astronomy and Space Interactivity: Lives of Stars

**Link:** Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 4, pp. 154-157
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

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| **8.E.4B. Conceptual Understanding:** Earth’s solar system consists of the Sun and other objects that are held in orbit around the Sun by its gravitational pull on them. Motions within the Earth-Moon-Sun system have effects that can be observed on Earth. | **Assets**

**Video:** Astronomy and Space Video: Pluto To Earth
Astronomy and Space Video: 100 Meters to Neptune

**Image:** Astronomy and Space Image: Mars
Astronomy and Space Image: Our Solar System
Astronomy and Space Image: Earth from Moon
Astronomy and Space Image: The Solar System

**Interactive Media Activity:** Astronomy and Space Interactivity: Objects of the Solar System
Astronomy and Space Interactivity: Why Isn’t Pluto a Planet?

**Link:** Astronomy and Space Video: Fun Science About the Moon
The Universe Video: Our Solar System to Scale
Astronomy and Space Interactivity: Planet Impact
The Universe Video: Our Solar System to Scale
Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 3, pp. 78-115 |

**Performance Indicators:** Students who demonstrate this understanding can:

| **Performance Indicators** | **Assets**

**Video:** Astronomy and Space Video: Pluto To Earth
Astronomy and Space Video: 100 Meters to Neptune

**Image:** Astronomy and Space Image: Mars
Astronomy and Space Image: Our Solar System
Astronomy and Space Image: Earth from Moon
Astronomy and Space Image: The Solar System

**Interactive Media Activity:** Astronomy and Space Interactivity: Objects of the Solar System
Astronomy and Space Interactivity: Why Isn’t Pluto a Planet?

**Link:** Astronomy and Space Video: Fun Science About the Moon
The Universe Video: Our Solar System to Scale
Astronomy and Space Interactivity: Planet Impact
The Universe Video: Our Solar System to Scale
Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 1, pp. 18-21 |

**8.E.4B.1** Obtain and communicate information to model and compare the characteristics and movements of objects in the solar system (including planets, moons, asteroids, comets, and meteors).

**8.E.4B.2** Construct explanations for how gravity affects the motion of objects in the solar system and tides on Earth.

**8.E.4B.3** Develop and use models to explain how seasons, caused by the tilt of Earth’s axis as it orbits the Sun, affects the length of the day and the amount of heating on Earth’s surface.

| **8.E.4B.1** Obtain and communicate information to model and compare the characteristics and movements of objects in the solar system (including planets, moons, asteroids, comets, and meteors). | **Assets**

**Video:** Astronomy and Space Video: Pluto To Earth
Astronomy and Space Video: 100 Meters to Neptune

**Image:** Astronomy and Space Image: Mars
Astronomy and Space Image: Our Solar System
Astronomy and Space Image: Earth from Moon
Astronomy and Space Image: The Solar System

**Interactive Media Activity:** Astronomy and Space Interactivity: Objects of the Solar System
Astronomy and Space Interactivity: Why Isn’t Pluto a Planet?

**Link:** Astronomy and Space Video: Fun Science About the Moon
The Universe Video: Our Solar System to Scale
Astronomy and Space Interactivity: Planet Impact
The Universe Video: Our Solar System to Scale
Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 3, pp. 78-115 |

| **8.E.4B.2** Construct explanations for how gravity affects the motion of objects in the solar system and tides on Earth. | **Assets**

**Video:** Astronomy and Space Video: Pluto To Earth
Astronomy and Space Video: 100 Meters to Neptune
Astronomy and Space Video: Phased by the Moon!

**Document:** Earth's Water Lesson: Ocean Tides Gooru Webques

**Interactive Media Activity:** Forces Interactivity: What Affects Gravity?

**Link:** Astronomy and Space Video: Fun Science About the Moon
Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 1, pp. 18-21 |

| **8.E.4B.3** Develop and use models to explain how seasons, caused by the tilt of Earth’s axis as it orbits the Sun, affects the length of the day and the amount of heating on Earth’s surface. | **Assets**

**Video:** Astronomy and Space Video: Phased by the Moon!

**Link:** Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 1, pp. 10-17 |
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<tr>
<td><strong>8.E.4B.4</strong> Develop and use models to explain how motions within the Sun-Earth-Moon system cause Earth phenomena (including day and year, moon phases, solar and lunar eclipses, and tides).</td>
<td><strong>Assets</strong>&lt;br&gt;<strong>Video:</strong> Astronomy and Space Video: Phased by the Moon!&lt;br&gt;<strong>Interactive Media Activity:</strong>&lt;br&gt;<strong>Link:</strong> Interactive Science: Earth Science Online Student Editions; Astronomy and Space Science; Chapter 1, pp. 22-31; Chapter 3, pp. 79-87</td>
</tr>
<tr>
<td><strong>8.E.4B.5</strong> Obtain and communicate information to describe how data from technologies (including telescopes, spectrosopes, satellites, space probes) provide information about objects in the solar system and the universe.</td>
<td><strong>Assets</strong>&lt;br&gt;<strong>Image:</strong> Light Image: Astronomical Observatory&lt;br&gt;Astronomy and Space Image: Very Large Array Telescope&lt;br&gt;Astronomy and Space Image: Spitzer Space Telescope&lt;br&gt;Astronomy and Space Image: Hubble Space Telescope&lt;br&gt;Astronomy and Space Image: Array Radio Telescope&lt;br&gt;<strong>Interactive Media Activity:</strong>&lt;br&gt;<strong>Link:</strong> Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 4, pp. 126-130</td>
</tr>
<tr>
<td><strong>8.E.4B.6</strong> Analyze and interpret data from the surface features of the Sun (including photosphere, corona, sunspots, prominences, and solar flares) to predict how these features may affect Earth.</td>
<td><strong>Assets</strong>&lt;br&gt;<strong>Image:</strong> Astronomy and Space Image: Solar Flare&lt;br&gt;<strong>Interactive Media Activity:</strong>&lt;br&gt;<strong>Link:</strong> Interactive Science: Earth Science Online Student Editions, Astronomy and Space Science, Chapter 3, pp. 88-93</td>
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</tbody>
</table>
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

#### EARTH SCIENCE: EARTH SYSTEMS AND RESOURCES

**Standard 8.E.5:** The student will demonstrate an understanding of the processes that alter the structure of Earth and provide resources for life on the planet.

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<tr>
<td><strong>Video:</strong> Earth’s Structure Video: Climbing Through the Rock Cycle</td>
<td><strong>Video:</strong> Earth’s Structure Video: Climbing Through the Rock Cycle</td>
</tr>
<tr>
<td>Earth’s Structure Video: Lava River</td>
<td>Earth’s Structure Video: Lava River</td>
</tr>
<tr>
<td>Earth’s Structure Video: Why Quakes Shake</td>
<td>Earth’s Structure Video: Why Quakes Shake</td>
</tr>
<tr>
<td>Earth’s Surface Video: Building Natural Bridges (Part 1)</td>
<td>Earth’s Surface Video: Building Natural Bridges (Part 1)</td>
</tr>
<tr>
<td>Earth’s Surface Video: Building Natural Bridges (Part 2)</td>
<td>Earth’s Surface Video: Building Natural Bridges (Part 2)</td>
</tr>
<tr>
<td>Earth’s Surface Video: Carving a Canyon</td>
<td>Earth’s Surface Video: Carving a Canyon</td>
</tr>
<tr>
<td>Earth’s Surface Video: Riding the Geo-vator</td>
<td>Earth’s Surface Video: Riding the Geo-vator</td>
</tr>
<tr>
<td>Earth’s Surface Video: Tafoni, No Bologna</td>
<td>Earth’s Surface Video: Tafoni, No Bologna</td>
</tr>
<tr>
<td>Nature of Science Video: Fracking for Energy Resources</td>
<td>Nature of Science Video: Fracking for Energy Resources</td>
</tr>
<tr>
<td><strong>Document:</strong> Earth’s Structure Lab: Design a Seismograph</td>
<td><strong>Document:</strong> Earth’s Structure Lab: Design a Seismograph</td>
</tr>
<tr>
<td>Earth’s Structure Lab: Moving the Continents</td>
<td>Earth’s Structure Lab: Moving the Continents</td>
</tr>
<tr>
<td>Earth’s Structure Lesson: Plate Tectonics Gooru Webquest</td>
<td>Earth’s Structure Lesson: Plate Tectonics Gooru Webquest</td>
</tr>
<tr>
<td>Earth’s Structure Lesson: Volcanoes Gooru Webquest</td>
<td>Earth’s Structure Lesson: Volcanoes Gooru Webquest</td>
</tr>
<tr>
<td>Earth’s Surface Lab: Exploring Geologic Time Through Core Samples</td>
<td>Earth’s Surface Lab: Exploring Geologic Time Through Core Samples</td>
</tr>
<tr>
<td>Earth’s Surface Lab: Modeling Valleys</td>
<td>Earth’s Surface Lab: Modeling Valleys</td>
</tr>
<tr>
<td>Earth’s Surface Lab: Sand Hills</td>
<td>Earth’s Surface Lab: Sand Hills</td>
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<tr>
<td>Natural Resources Lesson: Energy and You Gooru Webquest</td>
<td>Natural Resources Lesson: Energy and You Gooru Webquest</td>
</tr>
<tr>
<td>Rocks and Minerals Lesson: Spinning the Rock Cycle Gooru Webquest</td>
<td>Rocks and Minerals Lesson: Spinning the Rock Cycle Gooru Webquest</td>
</tr>
<tr>
<td><strong>Image:</strong> Earth’s Structure Image: Chalk Cliffs</td>
<td><strong>Image:</strong> Earth’s Structure Image: Chalk Cliffs</td>
</tr>
<tr>
<td>Earth’s Structure Image: City After Earthquake</td>
<td>Earth’s Structure Image: City After Earthquake</td>
</tr>
<tr>
<td>Earth’s Structure Image: Dry Lava Field</td>
<td>Earth’s Structure Image: Dry Lava Field</td>
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<tr>
<td>Earth’s Structure Image: Earth Features</td>
<td>Earth’s Structure Image: Earth Features</td>
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<tr>
<td>Earth’s Structure Image: Earthquake Aftermath</td>
<td>Earth’s Structure Image: Earthquake Aftermath</td>
</tr>
<tr>
<td>Earth’s Structure Image: Earthquake Damage</td>
<td>Earth’s Structure Image: Earthquake Damage</td>
</tr>
<tr>
<td>Earth’s Structure Image: Earthquake Destruction</td>
<td>Earth’s Structure Image: Earthquake Destruction</td>
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<tr>
<td>Earth’s Structure Image: Erupting Volcano</td>
<td>Earth’s Structure Image: Erupting Volcano</td>
</tr>
<tr>
<td>Earth’s Structure Image: Graphite</td>
<td>Earth’s Structure Image: Graphite</td>
</tr>
<tr>
<td>Earth’s Structure Image: House Collapsing</td>
<td>Earth’s Structure Image: House Collapsing</td>
</tr>
<tr>
<td>Earth’s Structure Image: Icelandic Volcano</td>
<td>Earth’s Structure Image: Icelandic Volcano</td>
</tr>
<tr>
<td>Earth’s Structure Image: Mount St Helens</td>
<td>Earth’s Structure Image: Mount St Helens</td>
</tr>
<tr>
<td>Earth’s Structure Image: Plate Movement</td>
<td>Earth’s Structure Image: Plate Movement</td>
</tr>
<tr>
<td>Earth’s Structure Image: Rift Valley</td>
<td>Earth’s Structure Image: Rift Valley</td>
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<tr>
<td>Earth’s Structure Image: San Andreas Fault</td>
<td>Earth’s Structure Image: San Andreas Fault</td>
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<tr>
<td>Earth’s Structure Image: Tectonic Plates</td>
<td>Earth’s Structure Image: Tectonic Plates</td>
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<tr>
<td>Earth’s Structure Image: Torres Del Paine Chile</td>
<td>Earth’s Structure Image: Torres Del Paine Chile</td>
</tr>
<tr>
<td>Earth’s Structure Image: Volcano Model</td>
<td>Earth’s Structure Image: Volcano Model</td>
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<tr>
<td>Earth’s Structure Lab: Moving the Continents</td>
<td>Earth’s Structure Lab: Moving the Continents</td>
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<tr>
<td>Earth’s Surface Image: Bisti Badlands</td>
<td>Earth’s Surface Image: Bisti Badlands</td>
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<tr>
<td>Earth’s Surface Image: Frank Landslide</td>
<td>Earth’s Surface Image: Frank Landslide</td>
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<tr>
<td>Earth’s Surface Image: Glacial Erosion</td>
<td>Earth’s Surface Image: Glacial Erosion</td>
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<tr>
<td>Earth’s Surface Image: Pangaea</td>
<td>Earth’s Surface Image: Pangaea</td>
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<tr>
<td>Earth’s Surface Image: River Delta</td>
<td>Earth’s Surface Image: River Delta</td>
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</tbody>
</table>
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

**Standard 8.E.5:** The student will demonstrate an understanding of the processes that alter the structure of Earth and provide resources for life on the planet.

### Pearson OLE Online Learning Exchange

*(Continued)*

Earth's Surface Image: Sand Spit  
Earth's Surface Image: Sea Arch  
Earth's Surface Image: Tectonic Plates  
Earth's Surface Image: V-Shaped Valley  
Earth's Surface Image: Wave Rock  
Ecology Image: Coal Formation  
Ecology Image: Oil Pipeline  
Ecology Image: Oil Spill  
Ecology Image: Volcanic Gas Cycle  

**Interactive Media Activity:** Earth’s Structure  
- Interactivity: Composite Volcano  
- Earth's Structure Interactivity: Earthquake Engineering  
- Earth's Structure Interactivity: Monitoring a Volcano  
- Earth's Structure Interactivity: Seismic Waves  
- Earth's Structure Interactivity: What Would You Build With?  
- Earth's Surface Interactivity: Classify the Forces of Weathering  
- Earth's Surface Interactivity: Effects of Glaciers  
- Earth's Surface Interactivity: Effects of Waves  
- Earth's Surface Interactivity: Volcanoes and Volcanic Landforms  

Natural Resources Interactivity: Oil: Long to Form, Quick to Use  

**Link:**  
- Earth's Structure Interactivity: Dig into the Rock Cycle  
- Earth's Structure Interactivity: What's Inside Earth?  
- Earth's Surface Interactivity: What on Earth Made This?  

Interactive Science: Earth Science Online Student Editions, Earth’s Structure  
Interactive Science: Earth Science Online Student Editions, Ecology and the Environment
### 8.E.5A. Conceptual Understanding

All Earth processes are the result of energy flowing and matter cycling within and among Earth’s systems. Because Earth’s processes are dynamic and interactive in nature, the surface of Earth is constantly changing. Earth’s hot interior is a main source of energy that drives the cycling and moving of materials. Plate tectonics is the unifying theory that explains the past and current crustal movements at the Earth’s surface. This theory provides a framework for understanding geological history.

### Performance Indicators

Students who demonstrate this understanding can:

#### 8.E.5A.1 Develop and use models to explain how the processes of weathering, erosion, and deposition change surface features in the environment.
<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
<th>Pearson OLE Online Learning Exchange</th>
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</thead>
</table>
| **8.E.5A.2** Use the rock cycle model to describe the relationship between the processes and forces that create igneous, sedimentary, and metamorphic rocks. | **Assets**  
**Video:** Earth's Structure Video: Lava River  
Earth’s Structure Video: Climbing Through the Rock Cycle  
**Document:** Rocks and Minerals Lesson: Spinning the Rock Cycle Gooru Webquest  
**Image:** Earth's Structure Image: Graphite  
**Interactive Media Activity:** Earth's Structure Interactivity: Dig into the Rock Cycle  
Interactive Science: Earth Science Online Student Editions, Earth’s Structure, Chapter 2, pp. 32-65 |
| **8.E.5A.3** Obtain and communicate information about the relative position, density, and composition of Earth’s layers to describe the crust, mantle, and core. | **Assets**  
**Video:** Earth's Surface Video: Riding the Geovator  
**Document:** Earth's Surface Lab: Exploring Geologic Time Through Core Samples  
**Image:** Earth's Structure Image: Earth Features  
**Interactive Media Activity:** Earth's Surface Interactivity: How Do You Find the Age of a Fossil?  
Earth's Surface Interactivity: Piecing Together the Past  
Earth's Structure Interactivity: Exploring Earth’s Layers  
**Link:** Earth's Structure Interactivity: What's Inside Earth?  
Interactive Science: Earth Science Online Student Editions, Earth’s Structure, Chapter 1, pp. 4-20 |
| **8.E.5A.4** Construct explanations for how the theory of plate tectonics accounts for (1) the motion of lithospheric plates, (2) the geologic activities at plate boundaries, and (3) the changes in landform areas over geologic time. | **Assets**  
**NBC Learn:** Earth's Layers and Plates Video: Why the Haiti Earthquake Struck  
Volcanoes Video: Whoa! Rare Videotape of Volcano Erupting Underwater, on Ocean Floor  
**Document:** Earth's Structure Lesson: Plate Tectonics Gooru Webquest  
**Image:** Earth's Surface Image: Pangaea  
Earth's Surface Image: Tectonic Plates  
Earth's Structure Image: San Andreas Fault  
Earth's Structure Image: Plate Movement  
Earth's Structure Lab: Moving the Continents  
Earth's Structure Image: Rift Valley  
Earth's Structure Image: Tectonic Plates  
**Interactive Media Activity:** Earth's Structure Interactivity: What’s Inside Earth?  
Interactive Science: Earth Science Online Student Editions, Earth’s Structure, Chapter 3, pp. 76-91 |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

#### 8.E.5.A.5
Construct and analyze scientific arguments to support claims that plate tectonics accounts for (1) the distribution of fossils on different continents, (2) the occurrence of earthquakes, and (3) continental and ocean floor features (including mountains, volcanoes, faults and trenches).

### Pearson OLE Online Learning Exchange

#### Assets
- **NBC Learn:** Earth’s Layers and Plates Video: Why the Haiti Earthquake Struck
- **Volcanoes Video:** Whoa! Rare Videotape of Volcano Erupting Underwater, on Ocean Floor
- **Document:** Earth’s Structure Lesson: Volcanoes
- **Gooru Webquest**
- **Earth’s Structure Lab:** Moving the Continents

#### Image:
- Earth’s Structure Image: Mount St. Helens
- Earth’s Structure Image: Tectonic Plates
- Earth’s Structure Image: San Andreas Fault
- Earth’s Structure Image: Plate Movement
- Earth’s Structure Image: Volcano Model
- Earth’s Structure Image: City After Earthquake
- Earth’s Structure Image: Earthquake Aftermath
- Earth’s Structure Image: House Collapsing
- Earth’s Structure Image: Earthquake Damage
- Earth’s Structure Image: Earthquake Destruction

#### Interactive Media Activity:
- **Earth’s Surface Interactivity:** Volcanoes and Volcanic Landforms

#### Link:
- Earth’s Structure Interactivity: What's Inside Earth?
- Interactive Science: Earth Science Online Student Editions; Earth’s Structure; Chapter 3, pp. 76-91; Chapter 4, pp. 102-109; Chapter 5, pp. 134-137
### South Carolina Academic Standards

**South Carolina Academic Standards and Performance Indicators for Science – Grade 8**

### Pearson OLE Online Learning Exchange

#### 8.E.5B. Conceptual Understanding:
Natural processes can cause sudden or gradual changes to Earth’s systems. Some may adversely affect humans such as volcanic eruptions or earthquakes. Mapping the history of natural hazards in a region, combined with an understanding of related geological forces can help forecast the locations and likelihoods of future events.

#### Performance Indicators:
Students who demonstrate this understanding can:

**8.E.5B.1** Analyze and interpret data to describe patterns in the location of volcanoes and earthquakes related to tectonic plate boundaries, interactions, and hot spots.

<table>
<thead>
<tr>
<th><strong>Assets</strong></th>
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<tbody>
<tr>
<td><strong>NBC Learn:</strong> Earth’s Layers and Plates Video: Why the Haiti Earthquake Struck</td>
</tr>
<tr>
<td>Volcanoes Video: Whoa! Rare Videotape of Volcano Erupting Underwater, on Ocean Floor</td>
</tr>
<tr>
<td><strong>Video:</strong> Earth’s Structure Video: Lava River</td>
</tr>
<tr>
<td>Earth’s Structure Video: Why Quakes Shake</td>
</tr>
<tr>
<td><strong>Document:</strong> Earth’s Structure Lesson: Plate Tectonics Gooru Webquest</td>
</tr>
<tr>
<td>Earth’s Structure Lab: Design a Seismograph</td>
</tr>
<tr>
<td>Earth’s Structure Lesson: Volcanoes Gooru Webquest</td>
</tr>
<tr>
<td>Earth’s Structure Lab: Moving the Continents</td>
</tr>
<tr>
<td><strong>Image:</strong> Earth’s Structure Image: Mount St Helens</td>
</tr>
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<td>Earth’s Surface Image: Tectonic Plates</td>
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<tr>
<td>Earth’s Structure Image: San Andreas Fault</td>
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<td>Earth’s Structure Image: Plate Movement</td>
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<td>Earth’s Structure Image: Volcano Model</td>
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<td>Earth’s Structure Image: Icelandic Volcano</td>
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<tr>
<td>Earth’s Structure Image: Erupting Volcano</td>
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<tr>
<th><strong>Interactive Media Activity:</strong></th>
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<tbody>
<tr>
<td>Earth’s Surface Interactivity: Volcanoes and Volcanic Landforms</td>
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<tr>
<td>Earth’s Structure Interactivity: Monitoring a Volcano</td>
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</tbody>
</table>

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<tr>
<th><strong>Link:</strong></th>
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<tbody>
<tr>
<td>Earth’s Structure Interactivity: What’s Inside Earth?</td>
</tr>
<tr>
<td>Interactive Science: Earth Science Online Student Editions; Earth’s Structure; Chapter 3, pp. 76-91; Chapter 4, pp. 102-109; Chapter 5, pp. 134-137</td>
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</table>
### A Correlation of Pearson OLE, Grades 6-8, to the South Carolina Academic Standards and Performance Indicators for Science

<table>
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<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
<th>Pearson OLE Online Learning Exchange</th>
</tr>
</thead>
</table>
| **8.E.5B.2** Construct explanations of how forces inside Earth result in earthquakes and volcanoes. | **Assets**
**NBC Learn:** Earth’s Layers and Plates Video: Why the Haiti Earthquake Struck
Volcanoes Video: Whoa! Rare Videotape of Volcano Erupting Underwater, on Ocean Floor
**Video:** Earth’s Structure Video: Lava River
Earth’s Structure Video: Why Quakes Shake
**Document:** Earth’s Structure Lesson: Plate Tectonics Gooru Webquest
Earth’s Structure Lab: Design a Seismograph
Earth’s Structure Lesson: Volcanoes Gooru Webquest
Earth’s Structure Lab: Moving the Continents
**Image:** Earth’s Structure Image: Mount St Helens
Earth’s Surface Image: Tectonic Plates
Ecology Image: Volcanic Gas Cycle
Earth’s Structure Image: San Andreas Fault
Earth’s Structure Image: Plate Movement
Earth’s Structure Image: Volcano Model
Earth’s Structure Image: Icelandic Volcano
Earth’s Structure Image: Erupting Volcano
**Interactive Media Activity:** Earth’s Surface Interactivity: Volcanoes and Volcanic Landforms
Earth’s Structure Interactivity: Monitoring a Volcano
Earth’s Structure Interactivity: Seismic Waves
Earth’s Structure Interactivity: Composite Volcano
**Link:** Earth’s Structure Interactivity: What’s Inside Earth?
Interactive Science: Earth Science Online Student Editions; Earth’s Structure; Chapter 3, pp. 76-91; Chapter 4, pp. 102-109; Chapter 5, pp. 134-137 |
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</thead>
</table>
| **8.E.5B.3** Define problems that may be caused by a catastrophic event resulting from plate movements and design possible devices or solutions to minimize the effects of that event on Earth’s surface and/or human structures. | **Assets**
- NBC Learn: Earth’s Layers and Plates Video: Why the Haiti Earthquake Struck
- Volcanoes Video: Whoa! Rare Videotape of Volcano Erupting Underwater, on Ocean Floor
**Document:** Earth’s Structure Lesson: Plate Tectonics Gooru Webquest
- Earth’s Structure Lab: Design a Seismograph
- Earth’s Structure Lesson: Volcanoes Gooru Webquest
**Image:** Earth’s Structure Image: Mount St Helens
- Earth’s Surface Image: Tectonic Plates
- Earth’s Structure Image: San Andreas Fault
- Earth’s Structure Image: Plate Movement
- Earth’s Structure Image: Dry Lava Field
- Earth’s Structure Image: Icelandic Volcano
- Earth’s Structure Image: Erupting Volcano
**Interactive Media Activity:** Earth’s Structure Interactivity: Earthquake Engineering
- Earth’s Surface Interactivity: Volcanoes and Volcanic Landforms
- Earth’s Structure Interactivity: Monitoring a Volcano
- Earth’s Structure Interactivity: What Would You Build With?
**Link:** Earth’s Structure Interactivity: What’s Inside Earth?
**Interactive Science:** Earth Science Online Student Editions, Earth’s Structure, Chapter 4, pp. 110-123 |
| **8.E.5C. Conceptual Understanding:** Humans depend upon many Earth resources – some renewable over human lifetimes and some nonrenewable or irreplaceable. Resources are distributed unevenly around the planet as a result of past geological processes. | **Performance Indicators:** Students who demonstrate this understanding can:

| **8.E.5C.1** Obtain and communicate information regarding the physical and chemical properties of minerals, ores, and fossil fuels to describe their importance as Earth resources. | **Assets**
- **Video:** Nature of Science Video: Fracking for Energy Resources
- **Document:** Natural Resources Lesson: Energy and You Gooru Webquest
- **Image:** Ecology Image: Coal Formation
- Ecology Image: Oil Spill
- Ecology Image: Oil Pipeline
**Interactive Media Activity:** Natural Resources Interactivity: Oil: Long to Form, Quick to Use
**Link:** Interactive Science: Earth Science Online Student Editions, Ecology and the Environment, Chapter 5, pp. 178-185 |
## EARTH SCIENCE: EARTH’S HISTORY AND DIVERSITY OF LIFE

<table>
<thead>
<tr>
<th>South Carolina Academic Standards and Performance Indicators for Science – Grade 8</th>
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</tr>
</thead>
</table>
| **Standard 8.E.6:** The student will demonstrate an understanding of Earth’s geologic history and its diversity of life over time. | **Assets**  
**NBC Learn:** Biodiversity Video: A Win for Biodiversity—Costa Rica Reforests Cleared Land  
Biodiversity Video: Protecting Biodiversity on Bioko Island  
**Document:** Diversity of Life Lab: Nature at Work  
Diversity of Life Lesson: Biodiversity on a Reef Gooru Webquest  
Diversity of Life Lesson: Natural Selection Gooru Webquest  
Earth’s Surface Lab: Exploring Geologic Time Through Core Samples  
**Video:** Diversity of Life Video: Insects Rule  
Earth’s Surface Video: Riding the Geo-vator  
Ecology Video: The First National Wildlife Refuge  
Evolution Video: Why Would a Fish Have Red Lips?  
**Image:** Animals Image: Armadillo  
Diversity of Life Image: Trilobite  
Earth’s Surface Image: Timeline of Earth  
Evolution Image: Blue and Red-footed Boobies  
Evolution Image: Elephant Ancestors  
Evolution Image: Large Ground Finch  
Plants Image: Fern Fossil  
**Interactive Media Activity:** Diversity of Life Interactivity: Factors that Affect Natural Selection  
Diversity of Life Interactivity: Finch Beak Tools  
Diversity of Life Interactivity: Is Variety the Spice of Life?  
Earth’s Surface Interactivity: How Do You Find the Age of a Fossil?  
Earth’s Surface Interactivity: Piecing Together the Past  
Ecology Interactivity: Threats to Biodiversity  
**Link:** Diversity of Life Video: The Survival of Sea Turtles  
Interactive Science: Earth Science Online Student Editions, Earth’s Surface  
Interactive Science: Life Science Online Student Editions, Cells and Heredity  
Interactive Science: Life Science Online Student Editions, Ecology and Environment |
### South Carolina Academic Standards and Performance Indicators for Science – Grade 8

#### 8.E.6A. Conceptual Understanding:
The geologic time scale interpreted from rock strata provides a way to organize major historical events in Earth’s history. Analysis of rock strata and the fossil record, which documents the existence, diversity, extinction, and change of many life forms throughout history, provide only relative dates, not an absolute scale. Changes in life forms are shaped by Earth’s varying geological conditions.

#### Performance Indicators:
Students who demonstrate this understanding can:

<table>
<thead>
<tr>
<th>8.E.6A.1</th>
<th>Develop and use models to organize Earth’s history (including era, period, and epoch) according to the geologic time scale using evidence from rock layers.</th>
</tr>
</thead>
</table>
| **Assets** | **Video:** Earth’s Surface Video: Riding the Geovator  
**Document:** Earth’s Surface Lab: Exploring Geologic Time Through Core Samples  
**Image:** Earth’s Surface Image: Timeline of Earth  
Plants Image: Fern Fossil  
Diversity of Life Image: Trilobite  
**Interactive Media Activity:** Earth’s Surface Interactivity: How Do You Find the Age of a Fossil?  
Earth’s Surface Interactivity: Piecing Together the Past  
**Link:** Interactive Science: Earth Science Online Student Editions, Earth’s Surface, Chapter 4, pp. 120-139 |

<table>
<thead>
<tr>
<th>8.E.6A.2</th>
<th>Analyze and interpret data from index fossil records and the ordering of rock layers to infer the relative age of rocks and fossils.</th>
</tr>
</thead>
</table>
| **Assets** | **Video:** Earth’s Surface Video: Riding the Geovator  
**Document:** Earth’s Surface Lab: Exploring Geologic Time Through Core Samples  
**Image:** Earth’s Surface Image: Timeline of Earth  
Plants Image: Fern Fossil  
Diversity of Life Image: Trilobite  
**Interactive Media Activity:** Earth’s Surface Interactivity: How Do You Find the Age of a Fossil?  
Earth’s Surface Interactivity: Piecing Together the Past  
**Link:** Interactive Science: Earth Science Online Student Editions, Earth’s Surface, Chapter 4, pp.104-105, 129-139 |

<table>
<thead>
<tr>
<th>8.E.6A.3</th>
<th>Construct explanations from evidence for how catastrophic events (including volcanic activities, earthquakes, climatic changes, and the impact of an asteroid/comet) may have affected the conditions on Earth and the diversity of its life forms.</th>
</tr>
</thead>
</table>
| **Assets** | **Video:** Earth’s Surface Video: Riding the Geovator  
**Document:** Earth’s Surface Lab: Exploring Geologic Time Through Core Samples  
**Image:** Earth’s Surface Image: Timeline of Earth  
Diversity of Life Image: Trilobite  
**Link:** Interactive Science: Earth Science Online Student Editions, Earth’s Surface, Chapter 4, pp.129-139 |
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</table>
| **8.E.6A.4** Construct and analyze scientific arguments to support claims that different types of fossils provide evidence of (1) the diversity of life that has been present on Earth, (2) relationships between past and existing life forms, and (3) environmental changes that have occurred during Earth's history. | **Assets**  
**Video:** Earth's Surface Video: Riding the Geovator  
**Document:** Earth's Surface Lab: Exploring Geologic Time Through Core Samples  
**Image:** Earth's Surface Image: Timeline of Earth  
Diversity of Life Image: Trilobite  
**Link:** Interactive Science: Life Science Online Student Editions, Cells and Heredity, Chapter 6, pp. 177-179  
Interactive Science: Earth Science Online Student Editions, Earth’s Surface, Chapter 4, pp. 104-115 |
| **8.E.6A.5** Construct explanations for why most individual organisms, as well as some entire taxonomic groups of organisms, that lived in the past were never fossilized. | **Assets**  
None |
| **8.E.6B. Conceptual Understanding:** Adaptation by natural selection acting over generations is one important process by which species change in response to changes in environmental conditions. The resources of biological communities can be used within sustainable limits, but if the ecosystem becomes unbalanced in ways that prevent the sustainable use of resources, then ecosystem degradation and species extinction can occur.  
**Performance Indicators:** Students who demonstrate this understanding can: | **Assets**  
**Video:** Diversity of Life Video: Insects Rule  
Evolution Video: Why Would a Fish Have Red Lips?  
**Document:** Diversity of Life Lab: Nature at Work  
Diversity of Life Lesson: Natural Selection Gooru Webquest Notes  
**Image:** Evolution Image: Elephant Ancestors  
Evolution Image: Blue and Red-footed Boobies  
Animals Image: Armadillo  
Evolution Image: Large Ground Finch  
**Interactive Media Activity:** Diversity of Life Interactivity: Factors that Affect Natural Selection  
Diversity of Life Interactivity: Finch Beak Tools  
**Link:** Interactive Science: Life Science Online Student Editions, Cells and Heredity, Chapter 6, pp. 166-175, 180-183  
Interactive Science: Life Science Online Student Editions, Ecology and Environment, Chapter 3, pp. 108-117 |
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</table>
| **8.E.6B.2** Obtain and communicate information to support claims that natural and human-made factors can contribute to the extinction of species. | **Assets**  
**NBC Learn:** Biodiversity Video: A Win for Biodiversity—Costa Rica Reforests Cleared Land  
Biodiversity Video: Protecting Biodiversity on Bioko Island  
**Video:** Ecology Video: The First National Wildlife Refuge  
**Document:** Diversity of Life Lesson: Biodiversity on a Reef Gooru Webquest  
**Interactive Media Activity:** Diversity of Life Interactivity: Is Variety the Spice of Life?  
Ecology Interactivity: Threats to Biodiversity  
**Link:** Diversity of Life Video: The Survival of Sea Turtles  
Interactive Science: Life Science Online Student Editions; Ecology and Environment; Chapter 1, p. 19; Chapter 2, p. 74 ‘Apply It!’; Chapter 3, pp. 108-117 |