

## Readorium Alignment with Carolina Biological Supply Company's Building Blocks of Science: Grades 3-5

**Readorium Content:** In Readorium, students choose **science books** that interest them, or teachers may easily lock or unlock specific books for classes, groups, or individuals. All students can understand the same rich content because the readability levels of the chapters and the supports students receive automatically adjust to their individual needs as they read. Once students receive tokens for completing books, they may select magazine articles or National Science Foundation videos. They may also participate in game-like activities based on the concepts and vocabulary they just learned. Teachers can log into the **Teacher Resource Center** to view student data and download resources and lessons based on this data.

The following chart shows Readorium's alignment to Carolina Biological Supply Company's Building Blocks of Science based on the NGSS. Some Readorium content applies to more than one standard.

Carolina Biological Supply Company: Building Blocks of Science: Grade 4 Energy Works					
Lesson 1 Energy Sources Are Everywhere	Lesson 2 Stored and Motion Energy	Lesson 3 Energy Transfers & Transformations	Lesson 4 Energy Moves in Waves	Lesson 5 Recycling Energy	Lesson 6 My Energy Experiment
<b>Vocabulary Lesson 1</b> Energy, Photosynthesis, System	<b>Vocabulary Lesson 2</b> Motion (kinetic) energy, Stored (potential) energy	<b>Vocabulary Lesson 3</b> Chemical energy, Electrical energy, Light energy, Mechanical energy, Radiant energy, Solar energy, Sound energy, Thermal energy	<b>Vocabulary Lesson 4</b> Amplitude, Frequency, Wave, Wavelength	<b>Vocabulary Lesson 5</b> Alternative energy, Biomass energy, Fossil fuel, Geothermal energy, Hydroelectric energy, Solar energy, Turbine, Water energy, Wind energy	<b>Vocabulary Lesson 6</b> All vocabulary from previous lessons.
<ul style="list-style-type: none"> <li>• <b>NGSS 4-PS3-1:</b> Use evidence to construct an explanation relating the speed of an object to the energy of that object.</li> </ul>					
<ul style="list-style-type: none"> <li>• <b>NGSS 4-PS3-2:</b> Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.</li> </ul>					
<ul style="list-style-type: none"> <li>• <b>NGSS 4-PS3-3:</b> Ask questions and predict outcomes about the changes in energy that occur when objects collide.</li> </ul>					
<ul style="list-style-type: none"> <li>• <b>NGSS 4-PS3-4:</b> Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.</li> </ul>					
<b>Readorium Chapter Books</b> <ul style="list-style-type: none"> <li>• Amusement Park Physics</li> <li>• Good Vibes – Making Waves with Sound</li> <li>• Improving Lives with Assistive Technology</li> <li>• Making Movie Magic</li> <li>• Olympic Champs: It's Not Just Luck – It's Physics!</li> <li>• On the Move with Transportation Technology</li> <li>• Powering Our Lives with Energy</li> <li>• Science of Music, The</li> </ul>		<b>Readorium Articles</b> <ul style="list-style-type: none"> <li>• Aurora Borealis: The Glowing Lights</li> <li>• Computer's Best Friend</li> <li>• Cool Beams!</li> <li>• Making Hovercrafts</li> <li>• Raise Your Voice</li> <li>• Science of Movie Stunts</li> <li>• Water Cycle</li> <li>• Why Are Some Hands More "Handy" Than Others?</li> </ul> <p style="text-align: center;"><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Big Poop Fuel</li> </ul>		<b>Readorium Class Lessons</b> <ul style="list-style-type: none"> <li>• Graphic Features (CL-2, A-1-Siege Engines)</li> <li>• Main Idea and Details (CL-2, A-1, The History of Flight)</li> <li>• Questioning (CL-2, A1 Crazy Careers in Science)</li> <li>• Text Organization (CL-1, A-1, Satellites)</li> <li>• Text Organization (CL-1, A-1, What is a Satellite?)</li> <li>• Text Organization (CL-1, A-2 Satellites in Outer Space)</li> <li>• Text Organization (CL-1, A-3 How Satellites Work)</li> </ul>	
<ul style="list-style-type: none"> <li>• <b>NGSS 4-PS4-1:</b> Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.</li> </ul>					
<ul style="list-style-type: none"> <li>• <b>NGSS 4-PS4-3:</b> Generate and compare multiple solutions that use patterns to transfer information.</li> </ul>					
<b>Readorium Chapter Books</b> <ul style="list-style-type: none"> <li>• Computer Revolution, The</li> <li>• Exploring the Ocean's Depths</li> <li>• Good Vibes - Making Waves with Sound</li> <li>• How We Learn</li> <li>• Science of Music, The</li> <li>• Technology Changes Medicine</li> </ul>		<b>Readorium Articles</b> <ul style="list-style-type: none"> <li>• Amazing Teen Scientist</li> <li>• Computer's Best Friend</li> <li>• Look a Rainbow!</li> <li>• Raise Your Voice</li> <li>• River of Ice</li> <li>• The Brain!</li> <li>• Why Some Hands are "Handier" Than Others?</li> </ul> <p style="text-align: center;"><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Picking Your Brain</li> <li>• Virtual Reality Scientists</li> </ul>		<b>Readorium Class Lessons</b> <ul style="list-style-type: none"> <li>• Inferring (CL-1, A-3 Why Is the Sky Blue?)</li> <li>• Questioning (CL-2, A1 Crazy Careers in Science)</li> <li>• Text Organization (CL-1, A-1 What Is a Satellite?)</li> </ul>	

- **NGSS 4-ESS3-1:** Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

<p><b>Readorium Chapter Books</b></p> <ul style="list-style-type: none"> <li>• Earth's Systems</li> <li>• Exploring the Ocean's Depths</li> <li>• Our Planet Earth</li> <li>• Polluting Our Earth</li> <li>• Powering Our Lives with Energy</li> </ul>	<p><b>Readorium Articles</b></p> <ul style="list-style-type: none"> <li>• All about Recycling</li> <li>• Biotechnology</li> <li>• Science of Movie Stunts</li> <li>• Sweet Treat, A</li> <li>• Water Cycle, The</li> </ul> <p><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Just by a Whisker</li> <li>• Pig Poop Fuel</li> <li>• Robo Bees</li> <li>• Robotic Arms</li> </ul>	<p><b>Readorium Class Lessons</b></p> <ul style="list-style-type: none"> <li>• Text Organization (CL-1, A-1, Satellites)</li> <li>• Text Organization (CL-1, A-2 Satellites in Outer Space)</li> <li>• Text Organization (CL-1, A-3 How Satellites Work)</li> </ul>
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**Readorium Alignment with Building Blocks of Science: Grade 4 - continued**

**Carolina Biological Supply Company: Building Blocks of Science: Grade 4 Plant and Animal Structures**

Lesson 1 Structures Used for Survival	Lesson 2 Animal Structures	Lesson 3 Plant Structures	Lesson 4 Using the Senses	Lesson 5 Exploring the Eye	Lesson 6 Structure & Function
<p><b>Vocabulary Lesson 1</b> Adaptation, Environment, Organism, Survival, Reproduce, Structure</p>	<p><b>Vocabulary Lesson 2</b> Dissect, Ectotherm, Endoskeleton, Endotherm, Exoskeleton, External structure, Internal structure, Invertebrate, Reproduction, Vertebrate</p>	<p><b>Vocabulary Lesson 3</b> External structure, Flower, Fruit, Germinate, Internal structure, Leaves, Ovary, Petal</p>	<p><b>Vocabulary Lesson 4</b> Brain, Brain stem, Cerebellum, Cerebrum, Cortex, Environment, Senses</p>	<p><b>Vocabulary Lesson 5</b> Cornea, Iris, Lens, Optic nerve, Pupil, Retina</p>	<p><b>Vocabulary Lesson 6</b> All vocabulary from previous lessons.</p>

- **NGSS 4-LS1-1:** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- **NGSS 4-LS1-2:** Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

<p><b>Readorium Chapter Books</b></p> <ul style="list-style-type: none"> <li>• Birds of a Feather</li> <li>• Buzzing About Bees and Wasps</li> <li>• Exploring Ecosystems</li> <li>• How We Learn</li> <li>• Improving Lives with Assistive Technology</li> <li>• Invasive Species</li> <li>• Life and Death in the Wild</li> <li>• Making Movie Magic</li> <li>• Our Gross World</li> <li>• Secret Languages of Animals, The</li> <li>• Smarter than you think</li> <li>• Spider Stories</li> <li>• Weird and Wonderful Plants</li> </ul>	<p><b>Readorium Articles</b></p> <ul style="list-style-type: none"> <li>• Amazing Water Bear</li> <li>• Bee Bee-havior</li> <li>• Beneath the Fin</li> <li>• Brain (The)!</li> <li>• Carnivorous Dinosaurs</li> <li>• Cicada Swarm</li> <li>• Fireflies of the Ocean</li> <li>• Friendship of a Goby and a Shrimp</li> <li>• Hair Time!</li> <li>• How Do We Think?</li> <li>• How Spiders Catch Prey</li> <li>• Interesting and Funny Animal Relationships</li> <li>• Raise Your Voice</li> <li>• Science of Jelly Beans</li> <li>• Sweet Treat</li> <li>• Tigers and Lions!</li> <li>• Twin Fascination</li> <li>• Venus Flytrap: A Meat-Eating Plant</li> <li>• Why Are Some Hands More "Handy" Than Others?</li> </ul>	<p><b>Readorium Class Lessons</b></p> <ul style="list-style-type: none"> <li>• Main Idea and Details (CL-4, A-1, Does Your Heart Stop When You Sneeze?)</li> <li>• Main Idea and Details (CL-4, A-2, Why Do We Yawn?)</li> <li>• Questioning (CL-1, A-2 Agoutis)</li> <li>• Questioning (CL-1, A-3 Sloths)</li> <li>• Text Organization (CL-2, A-1 Inside Your Body)</li> <li>• Text Organization (CL-2, A-2 Disease Database )</li> <li>• Text Organization (CL-2, A-3 All About Asthma)</li> <li>• Word Learning (CL-2, A-1 What Makes a Bird a Bird)</li> <li>• Word Learning (CL-2, A-2 What is a Waterfowl?)</li> <li>• Word Learning (CL-2, A-3 Webbed Wonders)</li> </ul>
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	<ul style="list-style-type: none"> <li>• Why Dandelions Are Dandy</li> </ul> <p style="text-align: center;"><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Antarctic Krill</li> <li>• Antlers, Shells, &amp; Beaks</li> <li>• Babies and Learning</li> <li>• Batty for Bats</li> <li>• Beluga Whales</li> <li>• Bird Brains</li> <li>• Emperor Penguins</li> <li>• How Do We Think?</li> <li>• Invasion of Earthworms!</li> <li>• Just by a Whisker</li> <li>• Leaf Cutter Ants</li> <li>• Picking Your Brain</li> <li>• Polar Bears</li> <li>• Robo Bees</li> <li>• Sea Turtles</li> <li>• Social Insects</li> <li>• SpelBots , The</li> <li>• Walruses</li> </ul>	
<ul style="list-style-type: none"> <li>• <b>NGSS 4-PS4-2:</b> Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.</li> </ul>		
<p style="text-align: center;"><b>Readorium Chapter Books</b></p> <ul style="list-style-type: none"> <li>• How We Learn</li> </ul>	<p style="text-align: center;"><b>Readorium Articles</b></p> <ul style="list-style-type: none"> <li>• Look a Rainbow!</li> <li>• The Brain!</li> </ul> <p style="text-align: center;"><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Virtual Reality Scientists</li> <li>• Picking Your Brain</li> </ul>	<p style="text-align: center;"><b>Readorium Class Lessons</b></p> <ul style="list-style-type: none"> <li>• Inferring (CL-1, A-3 Why Is the Sky Blue?)</li> <li>• Questioning (CL-2, A1 Crazy Careers in Science)</li> </ul>
<p><b>NGGS 3-5-ETS1-2:</b> Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.</p>		
<p style="text-align: center;"><b>Readorium Chapter Books</b></p> <ul style="list-style-type: none"> <li>• Computer Revolution</li> <li>• Improving Lives with Assistive Technology</li> <li>• Living in Space</li> <li>• Making Movie Magic</li> <li>• Olympic Champs: It's Not Just Luck – It's Physics!</li> <li>• On the Move with Transportation Technology</li> <li>• Powering Our Lives with Energy</li> <li>• Science - What's it All About?</li> <li>• Solving Crime with Forensics</li> <li>• Technology Changes Medicine</li> </ul>	<p style="text-align: center;"><b>Readorium Articles</b></p> <ul style="list-style-type: none"> <li>• Amazing Teen Scientist</li> <li>• Breathe Easier - Understanding Asthma</li> <li>• Computer's Best Friend</li> <li>• Cool Beams!</li> <li>• All About Recycling</li> <li>• Mysteries of the Common Cold</li> <li>• Shrimp Farming: A Shocking Environment</li> <li>• Why Are Some Hands More "Handy" Than Others</li> </ul> <p style="text-align: center;"><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Robotic Arms</li> <li>• The SpelBots</li> </ul>	<p style="text-align: center;"><b>Readorium Class Lessons</b></p> <ul style="list-style-type: none"> <li>• Graphic Features (CL-2, A-1 -Siege Engines)</li> <li>• Word Learning (CL-1, A-1 Introduction to Archeology)</li> <li>• Word Learning (CL-1, A-2 How Archeologists Work)</li> <li>• Word Learning (CL-1, A-3 The Archeology Lab)</li> </ul>

**Readorium Alignment with Building Blocks of Science: Grade 4 - continued**

**Carolina Biological Supply Company: Building Blocks of Science: Grade 4 Changing Earth**

<b>Lesson 1</b> Earth's Layers and Plates	<b>Lesson 2</b> Rock Formations and Patterns	<b>Lesson 3</b> Weathering and Erosion	<b>Lesson 4</b> Mapping Earth	<b>Lesson 5</b> Changing Earth	<b>Lesson 6</b> Life on a Changing Earth
<b>Vocabulary Lesson 1</b> Boundary, Core, Convection, Crust, Magma, Mantle, Tectonic plate, Volcano	<b>Vocabulary Lesson 2</b> Igneous rock, Lava, Metamorphic rock, Sediment, Sedimentary rock	<b>Vocabulary Lesson 3</b> Delta, Deposit, Erosion, Plateau, Weathering	<b>Vocabulary Lesson 4</b> Geologist, Relief map	<b>Vocabulary Lesson 5</b> Deposition, Fossil, Relative age	<b>Vocabulary Lesson 6</b> All vocabulary from previous lessons

- **NGSS 4-ESS1-1:** Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

<b>Readorium Chapter Books</b> <ul style="list-style-type: none"> <li>• Changing Face of Earth, The</li> </ul>	<b>Readorium Articles</b> <ul style="list-style-type: none"> <li>• Rocks Rock!</li> </ul> <p align="center"><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Earthquakes</li> <li>• Tsunami Research</li> <li>• Core on the Floor</li> </ul>	<b>Readorium Class Lessons</b> <ul style="list-style-type: none"> <li>• Word Learning (CL-1, A-1 Introduction to Archeology)</li> </ul>
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- **NGSS 4-ESS2-1:** Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation

- **NGSS 4-ESS2-2:** Analyze and interpret data from maps to describe patterns of Earth's features

<b>Readorium Chapter Books</b> <ul style="list-style-type: none"> <li>• Changing Face of Earth, The</li> <li>• Earth's Systems</li> <li>• Invasive Species</li> <li>• Weather Around the World</li> </ul>	<b>Readorium Articles</b> <ul style="list-style-type: none"> <li>• Catching a Comet</li> <li>• Challenge of Gravity, The</li> <li>• How Can You Become an Astronaut?</li> <li>• Spirit &amp; Opportunity on Mars</li> </ul> <p align="center"><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Core on the Floor</li> <li>• Earthquakes</li> <li>• How Can You Become an Astronaut?</li> <li>• Our Debris Filling the Ocean</li> </ul>	<b>Readorium Class Lessons</b> <ul style="list-style-type: none"> <li>• Word Learning (CL-1, A-2 How Archeologists Work)</li> </ul>
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- **NGSS 4-ESS3-2:** Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

<b>Readorium Chapter Books</b> <ul style="list-style-type: none"> <li>• Changing Face of Earth, The</li> <li>• Invasive Species</li> <li>• Natural Hazards that Shape the Earth</li> <li>• Our Planet Earth</li> <li>• Polluting Our Earth</li> </ul>	<b>Videos</b> <ul style="list-style-type: none"> <li>• Earthquakes</li> <li>• Tsunami Research</li> <li>• Pig Poop Fuel</li> </ul>	<b>Readorium Class Lessons</b>
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- **NGSS 3-5-ETS1-2:** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

<b>Readorium Chapter Books</b> <ul style="list-style-type: none"> <li>• Computer Revolution</li> <li>• Improving Lives with Assistive Technology</li> <li>• Living in Space</li> <li>• Making Movie Magic</li> <li>• Olympic Champs: It's Not Just Luck – It's Physics!</li> <li>• On the Move with Transportation Technology</li> <li>• Powering Our Lives with Energy</li> <li>• Science - What's it All About?</li> <li>• Solving Crime with Forensics</li> <li>• Technology Changes Medicine</li> </ul>	<b>Readorium Articles</b> <ul style="list-style-type: none"> <li>• Amazing Teen Scientist</li> <li>• Computer's Best Friend</li> <li>• Cool Beams!</li> <li>• All About Recycling</li> <li>• Shrimp Farming: A Shocking Environment</li> <li>• Why Are Some Hands More "Handy" Than Others?</li> </ul> <p align="center"><b>Videos</b></p> <ul style="list-style-type: none"> <li>• Robotic Arms</li> <li>• SpelBots, The</li> </ul>	<b>Readorium Class Lessons</b> <ul style="list-style-type: none"> <li>• Graphic Features (CL-2, A-1 -Siege Engines)</li> <li>• Word Learning (CL-1, A-1 Introduction to Archeology)</li> <li>• Word Learning (CL-1, A-2 How Archeologists Work)</li> <li>• Word Learning (CL-1, A-3 The Archeology Lab)</li> </ul>
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