

Readorium Alignment with Next Generation Science Standards: Grade 3

Readorium Content: In Readorium, students choose **science books** that interest them or teachers may 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 the content available for students by NGSS standard. Some content applies to more than one standard.

Readorium Alignment with Next Generation Science Standards: Grade 3		
3-PS2: Motion and Stability: Forces and Interactions		
Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
NGSS: 3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object		
<ul style="list-style-type: none"> • Amusement Park Physics • Olympic Champs: It's Not Just Luck – It's Physics! • Unbalanced Forces 	<ul style="list-style-type: none"> • Making Hovercrafts (A) • Simple Machines: Fun Facts and Riddles (A) 	
NGSS: 3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.		
<ul style="list-style-type: none"> • Amusement Park Physics • Changing Face of Earth, The • Olympic Physics! • Unbalanced Forces 	<ul style="list-style-type: none"> • A River of Ice (A) 	
NGSS: 3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other		
<ul style="list-style-type: none"> • Unbalanced Forces • Deep Space 	<ul style="list-style-type: none"> • Adventures of Messy Magnet (A) • Magnificent Magnets (A) • A Magnet Experiment (A) 	
NGSS: 3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.		
<ul style="list-style-type: none"> • Unbalanced Forces 	<ul style="list-style-type: none"> • Fishing for Staples: A Magnetic Drama 	
3-LS1: From Molecules to Organisms: Structures and Processes: Grade 3		
NGSS: 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.		
<ul style="list-style-type: none"> • Beetlemania • Birds of a Feather • Buzzing About Bees and Wasps • Deep Sea Creatures • Exploring the Ocean's Depths 	<ul style="list-style-type: none"> • Bee Bee-havior (A) • Tigers and Lions! (A) • Why Dandelions Are Dandy (A) • Antarctic Krill (V) • Beluga Whales (V) • Emperor Penguins (V) • Make Way for Ducklings (V) • Polar Bears (V) • Sea Turtles (V) 	<ul style="list-style-type: none"> • Inferring (CL-2, A-2 The Marabou Stork)

3-LS2: Ecosystems: Interactions, Energy, and Dynamics: Grade 3		
Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
NGSS: 3-LS2-1. Construct an argument that some animals form groups that help members survive.		
<ul style="list-style-type: none"> Buzzing About Bees and Wasps The Secret Languages of Animals 	<ul style="list-style-type: none"> Bee Bee-havior (A) Antarctic Krill (V) Monkey Business (V) 	<ul style="list-style-type: none"> Main Idea/Details (CL-1, A-1 Mantled Howler Monkeys) Questioning (CL-1, A-1 White-Throated Capuchins)
3-LS3: Heredity: Inheritance and Variation of D: Grade 3		
NGSS: 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.		
<ul style="list-style-type: none"> Inheritance, It's All in the Genes 	<ul style="list-style-type: none"> Biotechnology (A) Hair Time! (A) 	<ul style="list-style-type: none"> Main Idea/Details (CL-4, A-3 Why Does Hair Turns Grey?)
NGSS: 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.		
<ul style="list-style-type: none"> Deep Sea Creatures Invasive Species Life and Death in the Wild Our Gross World Spider Stories Weird and Wonderful Plants 	<ul style="list-style-type: none"> Breathe Easier - Understanding Asthma (A) Monkey Business (V) Orangutan Copycats (V) Evolution of the Peppered Moth (A) 	
3-LS4: Biological Evolution: Unity and Diversity: Grade 3		
NGSS: 3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.		
<ul style="list-style-type: none"> Birds of a Feather Dependency of Life, The Powering Our Lives with Energy 	<ul style="list-style-type: none"> Rocks Rock (A) Core on the Floor(V) 	
NGSS: 3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.		
<ul style="list-style-type: none"> Beetlemania Birds of a Feather Buzzing About Bees and Wasps Deep Sea Creatures Invasive Species Life and Death in the Wild Our Planet Earth Spider Stories Weird and Wonderful World of Plants 	<ul style="list-style-type: none"> Why Are Some Hands More "Handy" Than Others? (A) Weird Animal Defense Mechanisms (A) Monkey Business (V) Orangutan Copycats (V) Beluga Whales (V) Polar Bears (V) Walruses (V) Babies and Learning (V) Antlers, Shells, and Beaks (V) Evolution of the Peppered Moth (A) 	<ul style="list-style-type: none"> Main Idea/Details (CL-3, A-1 How Much Water Does a Camel's Hump Hold?) Main Idea/Details (CL-3, A-2 Can You Tell the Temperature by Listening to a Cricket Chirp?) Main Idea/Details (CL-3, A-3 Why Do Geese Fly in a V-Shape?) Word Learning (CL-2, A-1 What Makes a Bird a Bird?) Word Learning (CL-2, A-2 What is a Waterfowl?) Word Learning (CL-2, A-3 Webbed Wonders)
NGSS: 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all		
<ul style="list-style-type: none"> Beetlemania Birds of a Feather Dependency of Life, The Exploring Ecosystems 	<ul style="list-style-type: none"> How Spiders Catch Prey (A) Living or Non-Living: You Decide (A) Rocks Rock (A) Weird Animal Defense Mechanisms (A) 	<ul style="list-style-type: none"> Inferring (CL-2, A-1 Invasive Species) Questioning (CL-1, A-3 Sloths) Word Learning (CL-2, A-3)

<ul style="list-style-type: none"> Invasive Species Spider Stories Weird and Wonderful Plants 	<ul style="list-style-type: none"> Make Way for Ducklings (V) Antarctic Krill (V) Sea Turtles (V) Beluga Whales (V) Emperor Penguins (V) Walruses (V) Polar Bears (V) Walruses (V) Shrimp Farming- Shocking Tale (A) 	<ul style="list-style-type: none"> Webbed Wonders) Text Organization (CL-2, A-1 Inside Your Body) Text Organization (CL-2, A-2 Disease Database) Text Organization (CL-2, A-3 All About Asthma)
Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
NGSS: 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.		
<ul style="list-style-type: none"> Invasive Species 	<ul style="list-style-type: none"> Shrimp Farming-A Shocking Environmental Tale (A) 	
3-ESS2: Earth's Systems: Grade 3		
NGSS: 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.		
<ul style="list-style-type: none"> Weather Around the World 	<ul style="list-style-type: none"> Aurora Borealis: The Glowing Lights (A) Biggest Shadow of All: A Solar Eclipse (A) When Lightning Strikes (V) 	<ul style="list-style-type: none"> Author's Purpose (CL-1, A-1 Weather Scientist) Inferring (CL-1, A-1 What Causes Seasons?)
NGSS: 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.		
<ul style="list-style-type: none"> Exploring the Ocean's Depths Weather Around the World 	<ul style="list-style-type: none"> Our Own Star, the Sun (A) 	<ul style="list-style-type: none"> Graphic Features (CL-1, A-3 Climate Changing)
3-ESS3: Earth and Human Activity: Grade 3		
NGSS: 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.		
<ul style="list-style-type: none"> Natural Hazards 	<ul style="list-style-type: none"> Too Much Water! (A) 	
3-5-ETS1: Engineering Design: Grade 3		
NGSS: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.		
<ul style="list-style-type: none"> Computer Revolution Deep Space Earth's Systems Exploring the Ocean's Depths Improving Lives with Assistive Technology Living in Space Making Movie Magic Olympic Champs: It's Not Just Luck – It's Physics! On the Move with Transportation Technology Powering Our Lives with Energy Tech Changes Medicine 	<ul style="list-style-type: none"> The Science of Jelly Beans(A) Amazing Teen Scientist (A) The Science of Movie Stunts (A) Cool Beams! (A) Robotic Arms (V) The SpelBots (V) 	<ul style="list-style-type: none"> Word Learning (CL-1, A-1 Introduction to Archeology) Word Learning (CL-1, A-2 How Archeologists Work) Word Learning (CL-1, A-3 The Archeology Lab)

Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
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.		
<ul style="list-style-type: none"> • Improving Lives with Assistive Technology • Living in Space • Olympic Champs: It's Not Just Luck – It's Physics! • On the Move with Transportation Technology • Powering Our Lives with Energy • Science - What's it All About? • Solving Crime with Forensics • Technology Changes Medicine 	<ul style="list-style-type: none"> • Amazing Teen Scientist (A) • A Computer's Best Friend (A) • Why Are Some Hands More "Handy" Than Others? (A) • Mysteries of the Common Cold (A) • Breathe Easier - Understanding Asthma (A) • All About Recycling(A) • Shrimp Farming: A Shocking Environment (A) 	<ul style="list-style-type: none"> • Graphic Features (CL-2, A-1 War Machines-Siege Engines)
NGSS: 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		
<ul style="list-style-type: none"> • Science - What's It All About? 	<ul style="list-style-type: none"> • Biotechnology (A) • Virtual Reality Scientists (V) • Cancer: Cells Out of Control • RoboBees (V) • Twin Fascination(A) • Robotic Arms (V) • The SpelBots (V) 	<ul style="list-style-type: none"> •

Readorium Alignment with Next Generation Science Standards: Grade 4

Readorium Content: In Readorium, students choose **science books** that interest them or teachers may 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 the content available for students by NGSS standard. Some content applies to more than one standard.

Readorium Alignment with Next Generation Science Standards: Grade 4		
4-PS3: Energy: Grade 4		
Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
NGSS: 4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object.		
<ul style="list-style-type: none"> • Amusement Park Physics • Olympic Champs: It's Not Just Luck – It's Physics! 		<ul style="list-style-type: none"> • Main Idea and Details (CL-2, A-1, The History of Flight) • Text Organization (CL-1, A-1, Satellites) • Text Organization (CL-1, A-2 Satellites in Outer Space) • Text Organization (CL-1, A-3 How Satellites Work)
NGSS: 4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.		
<ul style="list-style-type: none"> • Good Vibes – Making Waves with Sound • Improving Lives with Assistive Technology • Making Movie Magic • On the Move with Transportation Technology • Powering Our Lives with Energy • Science of Music, The 	<ul style="list-style-type: none"> • Computer's Best Friend (A) • Cool Beams! (A) • The Science of Movie Stunts (A) • The Water Cycle (A) • Why Are Some Hands More "Handy" Than Others? (A) • Aurora Borealis: The Glowing Lights (A) 	<ul style="list-style-type: none"> • Text Organization (CL-1, A-1, What is a Satellite?) • Text Organization (CL-1, A-2 Satellites in Outer Space) • Text Organization (CL-1, A-3 How Satellites Work)
NGSS: 4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide.		
<ul style="list-style-type: none"> • Good Vibes – Making Waves with Sound • Powering Our Lives with Energy • Amusement Park Physics 		
NGSS: 4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.		
<ul style="list-style-type: none"> • Good Vibes – Making Waves with Sound 	<ul style="list-style-type: none"> • Raise Your Voice (A) • Making Hovercrafts (A) • Pig Poop Fuel (V) 	<ul style="list-style-type: none"> • Main Idea and Details (CL-2, A-1, The History of Flight) • Graphic Features (CL-2, A-1 War Machines-Siege Engines) • Questioning (CL-2, A1 Crazy Careers in Science)

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4-PS4: Waves and their Applications in Technologies for Information Transfer Grade 4		
Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
NGSS: 4-PS4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and show that waves can cause objects to move.		
<ul style="list-style-type: none"> • Good Vibes - Making Waves with Sound • The Science of Music 	<ul style="list-style-type: none"> • A River of Ice (A) • Tsunami Research (V) 	<ul style="list-style-type: none"> • Inferring (CL-1, A-3 Why Is the Sky Blue?) • Text Organization (CL-1, A-1 What Is a Satellite?)
NGSS: 4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.		
<ul style="list-style-type: none"> • How We Learn 	<ul style="list-style-type: none"> • Look a Rainbow! (A) • The Brain! (A) • Virtual Reality Scientists (V) • Picking Your Brain (V) 	<ul style="list-style-type: none"> • Inferring (CL-1, A-3 Why Is the Sky Blue?) • Questioning (CL-2, A1 Crazy Careers in Science)
NGSS: 4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.		
<ul style="list-style-type: none"> • Computer Revolution, The • Exploring the Ocean's Depths • Good Vibes • How We Learn • Technology Changes Medicine 	<ul style="list-style-type: none"> • Amazing Teen Scientist (A) • Computer's Best Friend (A) • The Brain! (A) • Why Some Hands are "Handier" Than Others? (A) • Raise Your Voice (A) 	
4-LS1: From Molecules to Organisms: Structures and Processes Grade 4		
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.		
<ul style="list-style-type: none"> • Beetlemania • Birds of a Feather • Buzzing About Bees and Wasps • Deep Sea Creatures • Invasive Species • Exploring Ecosystems • How We Learn • Life and Death in the Wild • Our Gross World • The Secret Languages of Animals • Smarter than you think • Spider Stories • Weird and Wonderful Plants 	<ul style="list-style-type: none"> • Amazing Water Bear (A) • Bee Bee-havior (A) • Beneath the Fin (A) • Carnivorous Dinosaurs (A) • Cicada Swarm (A) • Friendship of a Goby and a Shrimp (A) • Hair Time! (A) • How Spiders Catch Prey (A) • Science of Jelly Beans (A) • Venus Flytrap: A Meat-Eating Plant (A) • Walruses (V) • Wonder Fabrics - Things that Can't get Wet!(A) • Why Dandelions Are Dandy (A) • Batty for Bats (V) • Emperor Penguins (V) • Sea Turtles (V) • Bird Brains (V) • Antlers, Shells, & Beaks (V) • Leaf Cutter Ants (V) • Social Insects (V) • Picking Your Brain (V) • How Do We Think?(V) • Just by a Whisker (V) • Antarctic Krill (V) • Polar Bears (V) 	<ul style="list-style-type: none"> • Questioning (CL-1, A-2 Agoutis) • Questioning (CL-1, A-3 Sloths) • Word Learning (CL-2, A-1 What Makes a Bird a Bird) • Word Learning (CL-2, A-2 What is a Waterfowl?) • Word Learning (CL-2, A-3 Webbed Wonders) • Text Organization (CL-2, A-1 Inside Your Body) • Text Organization (CL-2, A-2 Disease Database) • Text Organization (CL-2, A-3 All About Asthma)

Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
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.		
<ul style="list-style-type: none"> • Birds of a Feather • Buzzing About Bees and Wasps • How We Learn • Improving Lives with Assistive Technology • Making Movie Magic • Secret Languages of Animals • Smarter Than You think • Weird and Wonderful Plants 	<ul style="list-style-type: none"> • Walruses (V) • Bee Bee-havior (A) • Beneath the Fin (A) • Brain (The)! (A) • Fireflies of the Ocean (A) • How Do We Think? (A) • Interesting and Funny Animal Relationships (A) • Raise Your Voice (A) • Invasion of Earthworms! (V) • Sweet Treat (A) • Twin Fascination (A) • Tigers and Lions! (A) • Why Are Some Hands More "Handy" Than Others? (A) • Venus Flytrap: A Meat-Eating Plant (The) (A) • Babies and Learning (V) • Picking Your Brain (V) • Leaf Cutter Ants (V) • Sea Turtles (V) • Social Insects (V) • Batty for Bats (V) • Beluga Whales (V) • Bird Brains (V) • Robo Bees (V) • The SpelBots (V) 	<ul style="list-style-type: none"> • Main Idea and Details (CL-4, A-1, Does Your Heart Stop When You Sneeze?) • Main Idea and Details (CL-4, A-2, Why Do We Yawn?)
4-ESS1: Earth's Place in the Universe Grade 4		
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		
<ul style="list-style-type: none"> • Changing Face of Earth, The 	<ul style="list-style-type: none"> • Rocks Rock! (A) • Earthquakes (V) • Tsunami Research (V) • Core on the Floor(V) 	<ul style="list-style-type: none"> • Word Learning (CL-1, A-1 Introduction to Archeology)
4-ESS2: Earth's Systems Grade 4		
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.		
<ul style="list-style-type: none"> • Changing Face of Earth, • Earth's Systems 	<ul style="list-style-type: none"> • Core on the Floor(V) • Our Debris Filling the Ocean(V) 	<ul style="list-style-type: none"> • Word Learning (CL-1, A-2 How Archeologists Work)
NGSS: 4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.		
<ul style="list-style-type: none"> • Changing Face of Earth, The • Invasive Species • Weather Around the World 	<ul style="list-style-type: none"> • How Can You Become an Astronaut? (A) • Catching a Comet (A) • Spirit & Opportunity on Mars (A) • The Challenge of Gravity (A) • Earthquakes (V) 	

4-ESS3: Earth and Human Activity Grade 4

Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
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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.

<ul style="list-style-type: none"> • Earth's Systems • Exploring the Ocean's Depths • Our Planet Earth • Polluting Our Earth • Powering Our Lives with Energy 	<ul style="list-style-type: none"> • The Water Cycle (A) • All about Recycling (A) • Biotechnology (A) • Science of Movie Stunts (A) • A Sweet Treat (A) • Pig Poop Fuel (V) • Just by a Whisker (V) • Robo Bees (V) • Robotic Arms (V) 	<ul style="list-style-type: none"> • Text Organization (CL-1, A-1, Satellites) • Text Organization (CL-1, A-2 Satellites in Outer Space) • Text Organization (CL-1, A-3 How Satellites Work)
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NGSS: 4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

<ul style="list-style-type: none"> • Buzzing About Bees and Wasps • Changing Face of Earth, The • Invasive Species • Natural Hazards that Shape the Earth • Our Planet Earth • Polluting Our Earth 	<ul style="list-style-type: none"> • Earthquakes (V) • Tsunami Research (V) • Pig Poop Fuel (V) 	
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4-ESS2: Earth's Systems Grade 4

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.

<ul style="list-style-type: none"> • Changing Face of Earth, The • Earth's Systems 	<ul style="list-style-type: none"> • Core on the Floor(V) • Our Debris Filling the Ocean(V) 	
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3-5-ETS1: Engineering Design Grade 4

NGSS: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

<ul style="list-style-type: none"> • Computer Revolution • Deep Space • Earth's Systems • Exploring the Ocean's Depths • Improving Lives with Assistive Technology • Living in Space • Making Movie Magic • Olympic Champs: It's Not Just Luck – It's Physics! • On the Move with Transportation Technology • Powering Our Lives with Energy • Tech Changes Medicine 	<ul style="list-style-type: none"> • The Science of Jelly Beans(A) • Amazing Teen Scientist (A) • The Science of Movie Stunts (A) • Cool Beams! (A) • Robotic Arms (V) • The SpelBots (V) 	<ul style="list-style-type: none"> • Word Learning (CL-1, A-1 Introduction to Archeology) • Word Learning (CL-1, A-2 How Archeologists Work) • Word Learning (CL-1, A-3 The Archeology Lab)
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Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) by Standard
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.		
<ul style="list-style-type: none"> • Improving Lives with Assistive Technology • Living in Space • Olympic Champs: It's Not Just Luck – It's Physics! • On the Move with Transportation Technology • Powering Our Lives with Energy • Science - What's it All About? • Solving Crime with Forensics • Technology Changes Medicine 	<ul style="list-style-type: none"> • Amazing Teen Scientist (A) • A Computer's Best Friend (A) • Why Are Some Hands More "Handy" Than Others? (A) • Mysteries of the Common Cold (A) • Breathe Easier - Understanding Asthma (A) • All About Recycling(A) 	<ul style="list-style-type: none"> • Graphic Features (CL-2, A-1 Siege Engines)
NGSS: 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		
<ul style="list-style-type: none"> • Science - What's It All About? 	<ul style="list-style-type: none"> • Biotechnology (A) • Virtual Reality Scientists (V) • Cancer: Cells Out of Control (A) • Twin Fascination(A) • RoboBees (V) • Robotic Arms (V) • The SpelBots (V) 	

Readorium Alignment with Next Generation Science Standards: Grade 5

Readorium Content: In Readorium, students choose **science books** that interest them or teachers may 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 the content available for students by NGSS standard. Some content applies to more than one standard.

Readorium Alignment with Next Generation Science Standards: Grade 5		
5-PS1: Matter and Its Interactions: Grade 5		
Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) By Standard
NGSS: 5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.		
<ul style="list-style-type: none"> • Good Vibes – Making Waves with Sound • Food Chemistry • Making Movie Magic 	<ul style="list-style-type: none"> • Matter Matters! (A) • Science of Jelly Beans (A) • Biotechnology (A) • A Sweet Treat (A) • How to Make a Volcano out of Coke and Mentos (A) • How to Make Your Own Slime (A) • How to Make Elephant Toothpaste (A) • Virtual Reality Scientists (V) 	
NGSS: 5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.		
<ul style="list-style-type: none"> • There are no Readorium books on this topic 	<ul style="list-style-type: none"> • Make Your Own Rock Candy (A) • Matter Matters! (A) • All About Recycling (A) • Rocks Rock!(A) 	<ul style="list-style-type: none"> • Inferring (CL-2, A-3 Cafeteria Chemistry)
NGSS: 5-PS1-3. Make observations and measurements to identify materials based on their properties.		
<ul style="list-style-type: none"> • Food Chemistry • Solving Crimes with Forensics 	<ul style="list-style-type: none"> • Crime Scene Science (A) • Matter Matters! (A) • Wonder Fabrics (A) • Cool Beams! (A) • How Do We Think? (A) • How to Make a Volcano (Coke and Mentos) (A) • How to Make Your Own Slime (A) 	
NGSS: 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.		
<ul style="list-style-type: none"> • Food Chemistry • Solving Crimes with Forensics 	<ul style="list-style-type: none"> • Excuse Me, But Burping is Natural (A) • Making a Potato Battery (A) • Make Your Own Rock Candy (A) • How to Make Elephant Toothpaste (A) • The Science of Movie Stunts (A) • How to Make a Volcano Coke and Mentos) (A) • How to Make Your Own Slime(A) 	<ul style="list-style-type: none"> • Inferring (CL-2, A-3 Cafeteria Chemistry)

5-PS2: Motion and Stability: Forces and Interactions: Grade 5		
Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) By Standard
NGSS: 5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down		
<ul style="list-style-type: none"> Amusement Park Physics Living in Space Making Movie Magic Our Planet Earth 	<ul style="list-style-type: none"> Amazing Teen Scientist (A) The Science of Movie Stunts (A) Making Hovercrafts (A) How to Make a Cartesian Diver (A) Treasures in the Sky (A) 	
5-PS3: Energy: Grade 5		
NGSS: 5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.		
<ul style="list-style-type: none"> Dependency of Life, The Weird and Wonderful World of Plants 	<ul style="list-style-type: none"> Biotechnology (A) A Sweet Treat (A) 	
5-LS1: From Molecules to Organisms: Structures and Processes: Grade 5		
NGSS: 5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.		
<ul style="list-style-type: none"> Dependency of Life, The Weird and Wonderful World of Plants 	<ul style="list-style-type: none"> Splash (A) How Plants Survive: Part 1(A) How Plants Survive: Part 2 (A) 	<ul style="list-style-type: none"> Graphic Features (CL-1, A-2 Greenhouse Effect)
5-LS2: Ecosystems: Interactions, Energy, and Dynamics		
NGSS: 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.		
<ul style="list-style-type: none"> Beetlemania Birds of a Feather Buzzing About Bees and Wasps Dependency of Life, The Deep Sea Creatures Exploring Ecosystems Exploring the Ocean's Depths Life and Death in the Wild Our Gross World Weird and Wonderful Plants 	<ul style="list-style-type: none"> Fireflies of the Ocean(A) Splash (A) Leaf Cutter Ants (V) Invasion of the Earthworms! (V) Virtual Reality Scientists (V) Core on the Floor(V) Just by a Whisker (V) 	<ul style="list-style-type: none"> Questioning (CL-1, A-2 Agoutis) Questioning (CL-2, A2 Vampires in Nature) Questioning (CL-2, A3 Parasites: Nature's Thieves)
5-ESS1: Earth's Place in the Universe: Grade 5		
NGSS: 5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.		
<ul style="list-style-type: none"> Deep Space 	<ul style="list-style-type: none"> A Trip to Mars (A) Spirit & Opportunity on Mars (A) Aurora Borealis: The Glowing Lights (A) Catching a Comet (A) The Biggest Shadow of All: A Solar Eclipse (A) Our Own Star, the Sun Strange Stars (A) Where Did the Planets Come From?(A) Treasures in the Sky(A) Our Galactic Neighborhood(A) The Future of the Sun(A) 	

	<ul style="list-style-type: none"> • The Challenge of Gravity(A) • Voyager Space Probes(A) • Black Holes (V) 	
Readorium Books By Standard	Magazine Articles (A) and Science Alive Videos (V) By Standard	Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) By Standard
NGSS: 5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.		
<ul style="list-style-type: none"> • There are no Readorium books on this topic 	<ul style="list-style-type: none"> • Our Own Star, the Sun (A) • Treasures in the Sky (A) • Our Galactic Neighborhood (A) • The Future of the Sun (A) 	
5-ESS2: Earth's Systems: Grade 5		
NGSS: 5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact		
<ul style="list-style-type: none"> • Earth's Systems • Polluting Our Earth 	<ul style="list-style-type: none"> • The Water Cycle (A) • All about Recycling (A) • Rocks Rock! (A) • When Lightning Strikes (V) • What is Sea Ice and Why is it Shrinking?(V) • Earthquakes (V) 	
NGSS: 5-ESS2-2. Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.		
<ul style="list-style-type: none"> • Earth's Systems 	<ul style="list-style-type: none"> • Amazing Water Bear (A) • The Water Cycle (A) 	
5-ESS3: Earth and Human Activity: Grade 5		
NGSS: 5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.		
<ul style="list-style-type: none"> • Changing Face of Earth • Earth's Systems • Exploring the Ocean's Depths • Invasive Species • Natural Hazards that Shape the Earth • Our Planet Earth • Polluting Our Earth • Powering Our Lives with Energy 	<ul style="list-style-type: none"> • All About Recycling (A) • A Computer's Best Friend (A) • Earthquakes (V) • Robotic Arms (V) • Debris Filling the Ocean(V) 	<ul style="list-style-type: none"> • Click or Clunk (CL-1, A-1 Why Save Rainforests?) • Click or Clunk (CL-2, A-1 Illegal Wildlife Trade) • Click or Clunk (CL-2, A-2 Garbage Island)
3-5-ETS1: Engineering Design: Grade 5		
NGSS: 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.		
<ul style="list-style-type: none"> • Computer Revolution • Deep Space • Earth's Systems • Exploring the Ocean's Depths 	<ul style="list-style-type: none"> • Amazing Teen Scientist (A) • The Science of Movie Stunts (A) • Cool Beams! (A) • Robotic Arms (V) 	<ul style="list-style-type: none"> • Word Learning (CL-1, A-1 Introduction to Archeology) • Word Learning (CL-1, A-2 How Archeologists Work)

<ul style="list-style-type: none"> • Improving Lives with Assistive Technology • Living in Space • Making Movie Magic • Olympic Champs: It's Not Just Luck – It's Physics! • On the Move with Transportation Technology • Powering Our Lives with Energy • Tech Changes Medicine 	<ul style="list-style-type: none"> • The SpelBots (V) • Look, a Rainbow (A) 	<ul style="list-style-type: none"> • Word Learning (CL-1, A-3 The Archeology Lab)
<p align="center">Readorium Books By Standard</p>	<p align="center">Magazine Articles (A) and Science Alive Videos (V) By Standard</p>	<p align="center">Teacher Resource Center Classroom Strategy Lessons (CL) with Articles (A) By Standard</p>
<p>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.</p>		
<ul style="list-style-type: none"> • Improving Lives with Assistive Technology • Living in Space • Olympic Champs: It's Not Just Luck – It's Physics! • On the Move with Transportation Technology • Powering Our Lives with Energy • Science - What's it All About? • Solving Crime with Forensics • Technology Changes Medicine 	<ul style="list-style-type: none"> • Amazing Teen Scientist (A) • A Computer's Best Friend (A) • Why Are Some Hands More "Handy" Than Others? (A) • Mysteries of the Common Cold (A) • Breathe Easier - Understanding Asthma (A) • All About Recycling(A) • Shrimp Farming-A Shocking Environmental Tale (A) 	<ul style="list-style-type: none"> • Graphic Features (CL-2, A-1 War Machines-Siege Engines)
<p>NGSS: 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.</p>		
<ul style="list-style-type: none"> • Science - What's It All About? 	<ul style="list-style-type: none"> • Biotechnology (A) • Cancer: Cells Out of Control • Twin Fascination(A) • Virtual Reality Scientists (V) • RoboBees (V) • Robotic Arms (V) • The SpelBots (V) 	