

Readorium Alignment to TEKS Content Standards in Science: Grade 6

The first 4 categories of Texas Essential Knowledge and Skills in Science have to do with scientific investigations and reasoning. Currently the six Readorium books and the magazine article that address this are: *The Scientific Method*, *Character Traits of a Good Scientist*, *Scientists Who Changed the World*, *Life on a Research Ship*, *Superstition or Science?*, *Microscopes: Seeing the Tiny World* and *Lab Safety, or Even Mad Scientists Need to Be Careful*. Because Readorium is content-based, the following chart shows the alignment of Readorium content to TEKS content requirements in Matter and Energy; Force, **Motion** and Energy; Earth and Space; and Organisms and Environments.

Grade Six			
Matter and Energy			
Texas Essential Knowledge and Skills for Science (TEKS)	Readorium Books By Standard	Readorium Magazine Articles (A) and Videos (V) by Standard	Classroom Strategy Lessons (CL) with Articles (A) by Standard
Matter and Energy. The student knows the differences between elements and compounds. The student is expected to:			
5(A) Know that an element is a pure substance represented by chemical symbols	<ul style="list-style-type: none"> ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 1 ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 2 	The Cool World of Chemistry (A)	
5(B) Recognize that a limited number of the many known elements comprise the largest portion of solid Earth, living matter, oceans, and the atmosphere	<ul style="list-style-type: none"> ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 1 		

	<ul style="list-style-type: none"> ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 2 		
5(C) Differentiate between elements and compounds on the most basic level	<ul style="list-style-type: none"> ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 1 ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 2 	<ul style="list-style-type: none"> ● The Cool World of Chemistry (A) ● Girls in Science Series: Part 3 (A) 	
5(D) Identify the formation of a new substance by using the evidence of a possible chemical change such as production of a gas, change in temperature, production of a precipitate, or color change.	<ul style="list-style-type: none"> ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 1 ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 2 ● Pollution 	<ul style="list-style-type: none"> ● Kitchen Chemistry (A) ● Girls in Chemistry (A) 	<ul style="list-style-type: none"> ● Print Features (CL-2, A-2 -Crazy Careers in Science)
Matter and Energy. The student knows matter has physical properties that can be used for classification. The student is expected to:			
6(A) Compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability		<ul style="list-style-type: none"> ● Gold - The Magnificent Metals (A) 	
6(B) Calculate density to identify an unknown substance.			
		<ul style="list-style-type: none"> ● Gold - The Magnificent Metals (A) 	

Matter and Energy. The student knows that some of Earth's energy resources are available on a nearly perpetual basis, while others can be renewed over a relatively short period of time. Some energy resources, once depleted, are essentially nonrenewable. The student is expected to:			
7(A) Research and debate the advantages and disadvantages of using coal, oil, natural gas, nuclear power, biomass, wind, hydropower, geothermal, and solar resources	<ul style="list-style-type: none"> ● Pollution 		
7(B) Design a logical plan to manage energy resources in the home, school, or community.	<ul style="list-style-type: none"> ● Pollution 		
Force, Motion, and Energy. The student knows force and motion are related to potential and kinetic energy. The student is expected to:			
8(A) Compare and contrast potential and kinetic energy;	<ul style="list-style-type: none"> ● Light Sound Action ● Sports Physics 	<ul style="list-style-type: none"> ● Machines of Ancient War: The Physics and History of Siege Engines (A), ● Things That Go BOOM!: The History and Chemistry of Explosives (A) 	
8(B) Identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces;	<ul style="list-style-type: none"> ● Light Sound Action ● Sports Physics 		

8(C) Calculate average speed using distance and time measurements;	<ul style="list-style-type: none"> • Newton's Laws 		
8(D) Measure and graph changes in motion	<ul style="list-style-type: none"> • Scientific Method • Newton's Laws 		
8(E) Investigate how inclined planes and pulleys can be used to change the amount of force to move an object.			

Force, motion, and energy. The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form. The student is expected to:

9(A) Investigate methods of thermal energy transfer, including conduction, convection, and radiation;	<ul style="list-style-type: none"> • Continental Drift • Light Sound Action 		
9(B) Verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature such as an ice cube melting;			
9(C) Demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy.	<ul style="list-style-type: none"> • Light Sound Action 	<ul style="list-style-type: none"> • Things That Go BOOM!: The History and Chemistry of Explosives 	

Earth and space. The student understands the structure of Earth, the rock cycle, and plate tectonics. The student is expected to:

10(A) Build a model to illustrate the structural layers of Earth, including the inner core, outer core, mantle, crust, asthenosphere, and lithosphere;	<ul style="list-style-type: none"> ● Big Delicious Earth 		
10(B) Classify rocks as metamorphic, igneous, or sedimentary by the processes of their formation	<ul style="list-style-type: none"> ● Big Delicious Earth 		<ul style="list-style-type: none"> ● Determining Importance (CL-3, A-2 Crystals)
10(C) Identify the major tectonic plates, including Eurasian, African, Indo-Australian, Pacific, North American, and South American			
10(D) Describe how plate tectonics causes major geological events such as ocean basins, earthquakes, volcanic eruptions, and mountain building.	<ul style="list-style-type: none"> ● Shaking Up Our World: Earthquakes and Seismic Waves ● Formation of Mountains and Deserts ● Learning from Natural Disasters ● Volcanic Expedition 		
Earth and space. The student understands the organization of our solar system and the relationships among the various bodies that comprise it. The student is expected to:			
11(A) Describe the physical properties, locations, and movements of the Sun, planets, Galilean moons, meteors, asteroids, and comets;	<ul style="list-style-type: none"> ● The Earth in Motion ● Inner and Outer Planets ● Space Rocks 	<ul style="list-style-type: none"> ● The Search for Life on Mars (A) ● A Trip to Mars (A) ● Catching a Comet (A) ● Treasures in the Sky (A) 	<ul style="list-style-type: none"> ● Context Clues (CL-2, A-2 Life on Mars)

<p>11(B) Understand that gravity is the force that governs the motion of our solar system</p>	<ul style="list-style-type: none"> ● Big Delicious Earth ● Inner and Outer Planets ● Lives of Stars ● Space Rocks 	<ul style="list-style-type: none"> ● Space Junk: Are We Trashing our Solar System? (A) 	
<p>11(C) Describe the history and future of space exploration, including the types of equipment and transportation needed for space travel.</p>	<ul style="list-style-type: none"> ● Space Race ● Artificial Satellites ● Inner and Outer Planets ● Space Rocks 	<ul style="list-style-type: none"> ● Space Junk: Are We Trashing our Solar System? (A) ● Voyager Space Probes Spirit & Opportunity on Mars: The Little Robots that Could (A) ● How Can You Become an Astronaut? (A) ● The Deep Mystery of Black Holes (A) ● The Search for Life on Mars (A) ● A Trip to Mars(A) ● The Challenge of Gravity (A) 	<ul style="list-style-type: none"> ● Print Features (CL-2, A-2 Crazy Careers in Science)
<p>Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:</p>			
<p>12(A) Understand that all organisms are composed of one or more cells</p>	<ul style="list-style-type: none"> ● Genetics 	<ul style="list-style-type: none"> ● Artificial Blood (A) ● Strange Medical Conditions (A) 	

	<ul style="list-style-type: none"> ● Mitosis and Meiosis- The Formation and Growth of Human Life ● Microscopes: Seeing the Tiny World ● Our Marvelous Bodies ● Desert Biomes ● Scientists Who Changed the World 	<ul style="list-style-type: none"> ● Behind the Scenes at the Hospital: Pathology) (A) ● What Does it Mean to be a Girl in Science? (A) ● The Tiny World of Cells (A) 	
12(B) Recognize that the presence of a nucleus determines whether a cell is prokaryotic or eukaryotic	<ul style="list-style-type: none"> ● Mitosis and Meiosis- The Formation and Growth of Human Life 		
12(C) Recognize that the broadest taxonomic classification of living organisms is divided into currently recognized Domains		<ul style="list-style-type: none"> ● The Tiniest Killers 	
12(D) Identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized Kingdoms			
12(E) Describe biotic and abiotic parts of an ecosystem in which organisms interact	<ul style="list-style-type: none"> ● Caves ● Desert Biomes ● The Importance of Coral Reefs 	<ul style="list-style-type: none"> ● Artificial Reefs (A) ● Invasive Species (A) ● Life Inside Caves (A) ● Earthworm-invasion (V) 	<ul style="list-style-type: none"> ● Creating Sensory Images (CL-2, A-1 The Call of the Tinamou) ● Creating Sensory Images (CL-3 A-1 Night Walk)

	<ul style="list-style-type: none"> ● Prairie Ecosystems ● Rainforests ● Surviving in Nature 	<ul style="list-style-type: none"> ● From Waste to Energy: Bacteria Gives a Boost (V) ● Leaf Cutter Ants (V) ● Disappearing-frogs (V) 	<ul style="list-style-type: none"> ● Determining Importance (CL-1, A-1 A Place with Many Levels) ● Making Connections/Synthesizing (CL-3, A-1 Predator-Prey Relationships: The Lynx and the Hare) ● Monitor for Meaning (CL-1, A-2 Reflections on Dead Wood)
<p>12(F) Diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem</p>		<ul style="list-style-type: none"> ● Animal Cannibals(A) 	<p>Inferring (CL-1, A-2 Animal Cannibals)</p>

Readorium Alignment to TEKS Content Standards in Science: Grade 7

The first 4 categories of Texas Essential Knowledge and Skills in Science have to do with scientific investigations and reasoning. Currently the six Readorium books and the magazine article that address this are: *The Scientific Method*, *Character Traits of a Good Scientist*, *Scientists Who Changed the World*, *Life on a Research Ship*, *Superstition or Science?*, *Microscopes: Seeing the Tiny World* and *Lab Safety, or Even Mad Scientists Need to Be Careful*. Because Readorium is content-based, the following chart shows the alignment of Readorium content to TEKS content requirements in Matter and Energy; Force, Motion and Energy; Earth and Space; and **Organisms** and Environments.

Grade Seven			
Matter and Energy			
Texas Essential Knowledge and Skills for Science (TEKS)	Readorium Books By Standard	Readorium Magazine Articles (A) and Videos (V) by Standard	Classroom Strategy Lessons (CL) with Articles (A) by Standard
Matter and Energy: The student knows that interactions occur between matter and energy. The student is expected to:			
5(A) Recognize that radiant energy from the Sun is transformed into chemical energy through the process of photosynthesis	<ul style="list-style-type: none"> ● Desert Biomes 	<ul style="list-style-type: none"> ● How Plants Trick Animals (A) 	<ul style="list-style-type: none"> ● Monitor for Meaning (CL-3 A-1 Sharing the Sun)· ● Print Features (CL-1, A-2 Plants that Trick Animals!)
5 (B) Demonstrate and explain the cycling of matter within living systems such as in the decay of biomass in a compost bin		<ul style="list-style-type: none"> ● Garbage Island (A) 	<ul style="list-style-type: none"> ● Print Features (CL-2, A-2) -Crazy Careers in Science)
5(C) Diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids	<ul style="list-style-type: none"> ● Life on a Research Ship 		

Matter and Energy. The student knows that matter has physical and chemical properties and can undergo physical and chemical changes. The student is expected to:

<p>6(A) Identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur</p>	<ul style="list-style-type: none"> ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 1 ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 2 ● Inner and Outer Planets 	<ul style="list-style-type: none"> ● Cafeteria Chemistry: How to Play with Your Food and Astound Your Friends (A) ● Buried Alive! (A) 	
<p>6(B) Distinguish between physical and chemical changes in matter in the digestive system</p>	<ul style="list-style-type: none"> ● Our Bodies: The Most Marvelous Machines 	<ul style="list-style-type: none"> ● Deadly Mushrooms 	<ul style="list-style-type: none"> ● Print Features CL-2, A-1 Symbiosis: Living Together and Loving It)
<p>6(C) Recognize how large molecules are broken down into smaller molecules such as carbohydrates can be broken down into sugars</p>	<ul style="list-style-type: none"> ● Our Bodies: The Most Marvelous Machines 		

(7) Force, Motion, and Energy. The student knows that there is a relationship among force, motion, and energy. The student is expected to:

<p>7(A) Contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still</p>	<ul style="list-style-type: none"> ● Newton's Laws 		
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7(B) Illustrate the transformation of energy within an organism such as the transfer from chemical energy to heat and thermal energy in digestion	<ul style="list-style-type: none"> • Our Bodies: The Most Marvelous Machines 		
7(C) Demonstrate and illustrate forces that affect motion in everyday life such as emergence of seedlings, turgor pressure, and geotropism			
(8) Earth and space. The student knows that natural events and human activity can impact Earth systems. The student is expected to:			
8(A) Predict and describe how different types of catastrophic events impact ecosystems such as floods, hurricanes, or tornadoes	<ul style="list-style-type: none"> • Learning from Natural Disasters • Weather • Volcanic Expedition 	<ul style="list-style-type: none"> • Hurricane-hunting (V) • Safe-from-tsunamis (V) • Twist-and-shout-tornado-trouble (V) 	<ul style="list-style-type: none"> • Print Features (CL-3 A-2 Flying Into a Hurricane)
8(B) Analyze the effects of weathering, erosion, and deposition on the environment in ecoregions of Texas			
8(C) Model the effects of human activity on groundwater and surface water in a watershed	<ul style="list-style-type: none"> • The Importance of Coral Reefs • Earthquakes and Seismic Waves 	Flowing-free (V)	
(9) Earth and space. The student knows components of our solar system. The student is expected to:			
9(A) Analyze the characteristics of objects in our solar system that allow life to exist such as the proximity of the	<ul style="list-style-type: none"> • Inner and Outer Planets 	A Trip to Mars (A)	

Sun, presence of water, and composition of the atmosphere			
9(B) Identify the accommodations, considering the characteristics of our solar system, that enabled manned space exploration	<ul style="list-style-type: none"> ● Space Race ● Artificial Satellites 		
(10) Organisms and environments. The student knows that there is a relationship between organisms and the environment. The student is expected to:			
10(A) Observe and describe how different environments, including microhabitats in schoolyards and biomes, support different varieties of organisms	<ul style="list-style-type: none"> ● Caves ● The Importance of Coral Reefs ● Desert Biomes ● Life in the Tundra ● Nature’s Weird Surprises ● Prairie Ecosystems ● Rainforests ● Surviving in Nature 	<ul style="list-style-type: none"> ● The Black Death (A) 	<ul style="list-style-type: none"> ● Monitor for Meaning (CL-1, A-2 Reflections on Dead Wood) ● Monitor for Meaning (CL-3 A-1 Sharing the Sun) ● Print Features (CL-3 A-1 Home Sweet Home: Dens and Other Shelters)
10(B) Describe how biodiversity contributes to the sustainability of an ecosystem	<ul style="list-style-type: none"> ● Caves ● The Importance of Coral Reefs ● Desert Biomes ● Life in the Tundra ● Nature’s Weird Surprises ● Prairie Ecosystems ● Rainforests ● Surviving in Nature 	<ul style="list-style-type: none"> ● Animal Cannibals (A) ● The Marabou Stork: Exceptionally Ugly and Gross! (A) ● Vampires in Nature (A) ● Tardigrades.. AKA Water Bears (A) ● Carnivorous Dinosaurs (A) ● Artificial Reefs (A) 	<ul style="list-style-type: none"> ● Inferring (CL-1, A-2 Animal Cannibals) ● Making Connections/Synthesizing (CL-1, A-1 A Marsupial for Every Occasion) ● Monitor for Meaning CL-2, A-1 Great Barrier Reef) ● Monitor for Meaning (CL-3 A-2 The Illegal Wildlife Trade)

		<ul style="list-style-type: none"> ● What Happens When Something Goes Extinct? (A) 	<ul style="list-style-type: none"> ● Print Features (CL-1, A-2 Plants that Trick Animals!)
11(C) Observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds			
(11) Organisms and environments. The student knows that populations and species demonstrate variation and inherit many of their unique traits through gradual processes over many generations. The student is expected to:			
11(A) Examine organisms or their structures such as insects or leaves and use dichotomous keys for identification			
11(B) Explain variation within a population or species by comparing external features, behaviors, or physiology of organisms that enhance their survival such as migration, hibernation, or storage of food in a bulb	<ul style="list-style-type: none"> ● Caves ● Character Traits of a Good Scientist (chapter on Darwin) ● Desert Biomes ● Scientists who Changed the World (chapter on Darwin) ● Prairie Ecosystems ● Surviving in Nature 	<ul style="list-style-type: none"> ● A Weird Animal: The Binturong (A) ● The Surprising Intelligence of Birds (A) ● The Marabou Stork: Exceptionally Ugly and Gross! (A) ● Vampires in Nature (A) ● Tardigrades.. AKA Water Bears (A) ● Carnivorous Dinosaurs (A) ● The Very Peculiar Anglerfish (A) ● Life Near Undersea Vents (A) 	<ul style="list-style-type: none"> ● Inferring (CL-1, A-2 Animal Cannibals) ● Inferring (CL-3 A-1 Meet a Scientist)

		<ul style="list-style-type: none"> ● The Humongous Megafish (A) ● Robots-with- whiskers (V) ● bird-brains (V) ● Birds-strut-their- stuff (V) 	
11(C) Observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds			
(12) Organisms and environments. The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to:			
12(A) Investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish, hollow bones in birds, or xylem in plants	<ul style="list-style-type: none"> ● Caves ● Desert Biomes ● The Importance of Coral Reefs ● Life in the Tundra ● Nature’s Weird Surprises ● Prairie Ecosystems ● Surviving in Nature 	<ul style="list-style-type: none"> ● A Weird Animal: The Binturong (A) ● The Surprising Intelligence of Birds (A) ● The Marabou Stork: Exceptionally Ugly and Gross! (A) ● Vampires in Nature (A) ● Tardigrades.. AKA Water Bears (A) ● Carnivorous Dinosaurs (A) ● The Very Peculiar Anglerfish (A) ● Life Near Undersea Vents (A) 	<ul style="list-style-type: none"> ● Determining Importance (CL-1, A-2 The Frilled Lizard) ● Determining Importance (CL-3, A-1 An Anchor in the Storm)

		<ul style="list-style-type: none">● The Humongous Megafish (A)● The Venomous Sea Wasp (A)● The World's Most Disgusting Animal: The Hagfish (A)● Crime-Solving Insects (A)● Pirate Spiders (A)● Deadly Mushrooms (A)● A Spider with Deadly Aim (A)● Spitting Spiders (A)● Looks like an Ant... Or Does It?(A)● The Rhymes and Riddles of Science (A)● 50 Amazing Animal Facts (A)● Antlers-beaks-geckos-and-us (V)● bird-brains(V)	
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<p>12(B) Identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems</p>	<ul style="list-style-type: none"> ● Our Bodies: The Most Marvelous Machines ● Becoming and Staying Healthy ● Nature’s Weird Surprises 	<ul style="list-style-type: none"> ● The Teenage Brain - Why Teens Act so Twisted! (A) ● How Video Games Affect Your Personality (A) ● 25 Fascinating Facts About Humans (A) ● From Blinking to Thinking: The Amazing Human Brain (A) ● Your Brain at Sleep (A) ● Sounds and Hearing (A) ● Teeth (A) ● Optical Illusions: Is Seeing Believing? (A) ● Dreams (A) ● Limits of the Human Body (A) ● Making Memories (A) ● The Brain!... What’s in There? (A) ● Artificial Blood (A) ● nanoparticles. (V) ● tongue-driven (V) ● vision-for-the-blind-fact-or-fiction (V) 	<ul style="list-style-type: none"> ● Graphic Features (CL-2, A-1 High School Track) ● Inferring (CL-2, A-2 How Video Games Affect your Personality) ● Making Connections/ ● Synthesizing (CL-3, A-2 The Limits of the Human Body)
<p>12(C) Recognize levels of organization in plants and animals including cells, tissues, organs, organ systems, and organisms</p>		<ul style="list-style-type: none"> ● Artificial Blood (A) ● Behind the Scenes at the Hospital: Pathology (A) 	<ul style="list-style-type: none"> ● Creating Sensory Images (CL-3 A-2 An Afternoon Rain)

		<ul style="list-style-type: none"> ● The Tiny World of Cells (A) 	
12 (D) Differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole	<ul style="list-style-type: none"> ● Mitosis and Meiosis- The Formation and Growth of Human Life ● (This book addresses animal mitosis and meiosis.) 	<ul style="list-style-type: none"> ● The Tiny World of Cells (A) 	
12(E) Compare the functions of a cell to the functions of organisms such as waste removal			
12(F) Recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life		<ul style="list-style-type: none"> ● Behind the Scenes at the Hospital: Pathology (A) ● The Tiny World of Cells (A) 	
(13) Organisms and environments. The student knows that a living organism must be able to maintain balance in stable internal conditions in response to external and internal stimuli. The student is expected to:			
13(A) Investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight;	<ul style="list-style-type: none"> ● Life on a Research Ship ● Caves ● The Importance of Coral Reefs ● Life in the Tundra ● Nature's Weird Surprises 	<ul style="list-style-type: none"> ● A Weird Animal: The Binturong (A) ● The Surprising Intelligence of Birds (A) ● The Marabou Stork: Exceptionally Ugly and Gross! (A) ● Vampires in Nature (A) 	<ul style="list-style-type: none"> ● Determining Importance (CL-1, A-2 The Frilled Lizard) ● Inferring (CL-1, A-1 In the Night) ● Inferring (CL-3 A-2 A Memorable Reptile)

		<ul style="list-style-type: none">● Tardigrades.. AKA Water Bears (A)● Carnivorous Dinosaurs (A)● The Very Peculiar Anglerfish (A)● Life Near Undersea Vents (A)● The Humongous Megafish (A)● The Venomous Sea Wasp (A)● The World's Most Disgusting Animal: The Hagfish (A)● Crime-Solving Insects (A)● Pirate Spiders (A)● A Spider with Deadly Aim (A)● Spitting Spiders (A)● Looks like an Ant... Or Does It? (A)● Robots-with- whiskers (V)● Birds-strut-their- stuff(V)● Fascinating- flights (V)● Insects-and-team-work (V)● Make-way-for- ducklings (V)	
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13(B) Describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance.		<ul style="list-style-type: none"> ● How Plants Trick Animals (A) 	
(14) Organisms and environments. The student knows that reproduction is a characteristic of living organisms and that the instructions for traits are governed in the genetic material. The student is expected to:			
14 (A) Define heredity as the passage of genetic instructions from one generation to the next generation;	<ul style="list-style-type: none"> ● Genetics: Why We Look the Way We Do ● Mitosis and Meiosis- The Formation and Growth of Human Life ● Prairie Ecosystem 	<ul style="list-style-type: none"> ● Cloning: The More the Merrier (A) ● Getting DNA Out of Ancient Fossils ● Selective Breeding, Genetic Engineering, and Pedigrees ● Bones Tell the Story (A) ● The Warrior Gene (A) 	<ul style="list-style-type: none"> ● Making Connections/ Synthesizing (CL-1, A-2 The Warrior Gene) ● Monitor for Meaning (CL-2, A-2 Is that Popcorn? No, it's a Binturong!)
14 (B) Compare the results of uniform or diverse offspring from sexual	<ul style="list-style-type: none"> ● Life on a Research Ship 		

<p>reproduction or asexual reproduction; such as wilting in plants and fever or vomiting in animals that allow them to maintain balance.</p>			
<p>14(C) Recognize that inherited traits of individuals are governed by the genetic material found in the genes within chromosomes in the nucleus.</p>	<ul style="list-style-type: none"> ● Genetics: Why We Look the Way We Do ● Mitosis and Meiosis- The Formation and Growth of Human Life 	<ul style="list-style-type: none"> ● Cloning: The More the Merrier (A) ● The Warrior Gene (A) ● Strange Medical Conditions (A) ● The-good-the-bad-and-the-baby(V) ● What-makes-us- tick (V) ● Animal-magnetism (V) 	<ul style="list-style-type: none"> ● Making Connections/ Synthesizing (CL-1, A-2 The Warrior Gene)

Readorium Alignment to TEKS Content Standards in Science: Grade 8

The first 4 categories of Texas Essential Knowledge and Skills in Science have to do with scientific investigations and reasoning. Currently the six Readorium books and the magazine article that address this are: *The Scientific Method*, *Character Traits of a Good Scientist*, *Scientists Who Changed the World*, *Life on a Research Ship*, *Superstition or Science?*, *Microscopes: Seeing the Tiny World* and *Lab Safety, or Even Mad Scientists Need to Be Careful*. Because Readorium is content-based, the following chart shows the alignment of Readorium content to TEKS content requirements in Matter and Energy; Force, Motion and Energy; Earth and Space; and Organisms and Environments.

Grade Eight			
Matter and energy			
Texas Essential Knowledge and Skills for Science (TEKS)	Readorium Books By Standard	Readorium Magazine Articles (A) and Videos (V) by Standard	Classroom Strategy Lessons (CL) with Articles (A) by Standard
(5) Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to:			
5(A) describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud	<ul style="list-style-type: none"> ● Light Sound Action 	<ul style="list-style-type: none"> ● The Rhymes and Riddles of Science (A) ● Girls in Science Series: Part 2 (A) ● The Many Uses of Submarines(A) 	
5(B) identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity	<ul style="list-style-type: none"> ● Light Sound Action 	<ul style="list-style-type: none"> ● The Cool World of Chemistry (A) 	

5(C) interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements	<ul style="list-style-type: none"> ● Fizz, Pop, Boom, and Beyond: Understanding Chemistry 2 		
5 (E) investigate how evidence of chemical reactions indicate that new substances with different properties are formed	<ul style="list-style-type: none"> ● Pollution 	<ul style="list-style-type: none"> ● Crystals (A) 	
5 (F) recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass			
(6) Force, motion, and energy. The student knows that there is a relationship between force, motion, and energy. The student is expected to:			
6(A) demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion	<ul style="list-style-type: none"> ● Scientists Who Changed the World ● Newton's Laws 	<ul style="list-style-type: none"> ● Smart Cars (V) 	
6(B) differentiate between speed, velocity, and acceleration	<ul style="list-style-type: none"> ● Newton's Laws ● Sports Physics 	<ul style="list-style-type: none"> ● Smart Cars (V) ● Smart Helicopters (V) ● Strong but Sensitive Metal Foam (V) 	
6(C) investigate and describe applications of Newton's law of inertia, law of force and acceleration, and law of action-reaction such as in vehicle	<ul style="list-style-type: none"> ● Newton's Laws ● Sports Physics 	<ul style="list-style-type: none"> ● Robots with Whiskers(V) ● Smart Cars (V) ● Smart Helicopters (V) 	

restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches		<ul style="list-style-type: none"> • Women Powered Robots (V) 	
(7) Earth and space. The student knows the effects resulting from cyclical movements of the Sun, Earth, and Moon. The student is expected to:			
7(A) model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun causing changes in seasons	<ul style="list-style-type: none"> • The Earth in Motion • Character Traits of Good Scientists • Scientists Who Changed the World 	<ul style="list-style-type: none"> • Girl-Powered Science (V) 	
7(B) demonstrate and predict the sequence of events in the lunar cycle	<ul style="list-style-type: none"> • Total Lunacy Phases, Eclipses, and Tides on Earth 	<ul style="list-style-type: none"> • The Biggest Shadow of All: A Solar Eclipse 	
7(C) relate the position of the Moon and Sun to their effect on ocean tides	<ul style="list-style-type: none"> • Total Lunacy Phases, Eclipses, and Tides on Earth • The Earth in Motion 	<ul style="list-style-type: none"> • Girl-Powered-Science (V) 	
(8) Earth and space. The student knows characteristics of the universe and is expected to:			
8(A) Describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification	<ul style="list-style-type: none"> • Lives of Stars 	<ul style="list-style-type: none"> • The Future of the Sun (A) • Our Own Star, the Sun (A) 	

		<ul style="list-style-type: none"> • Aurora Borealis: The Glowing Lights (A) • Strange Stars (A) • Our Galactic Neighborhood (A) • Gaps-in-the- Galaxies (V) 	
<p>8 (B) recognize that the Sun is a medium-sized star near the edge of a disc-shaped galaxy of stars and that the Sun is many thousands of times closer to Earth than any other star</p>	<ul style="list-style-type: none"> • The Earth in Motion • Lives of Stars 	<ul style="list-style-type: none"> • Our Own Star, the Sun (A) • The Future of the Sun (A) • Girl-Powered-Science (V)) 	
<p>8 (C) Explore how different wavelengths of the electromagnetic spectrum such as light and radio waves are used to gain information about distances and properties of components in the universe</p>	<ul style="list-style-type: none"> • Light Sound Action • Lives of Stars 		
<p>8 (D) Model and describe how light years are used to measure distances and sizes in the universe</p>	<ul style="list-style-type: none"> • Lives of Stars 	<ul style="list-style-type: none"> • The Deep Mystery of Black Holes (A) 	
<p>8(E) Research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe</p>		<ul style="list-style-type: none"> • Where Did the Planets Come From? (A) • The Deep Mystery of Black Holes (A) 	

(9) Earth and space. The student knows that natural events can impact Earth systems. The student is expected to:

<p>9(A) Describe the historical development of evidence that supports plate tectonic theory</p>	<ul style="list-style-type: none"> ● Continental Drift ● On the Move: Plate Tectonics ● Sea Floor Spreading 		
<p>9(B) Relate plate tectonics to the formation of crustal features</p>	<ul style="list-style-type: none"> ● Continental Drift ● Formation of Mountains and Deserts ● On the Move: Plate Tectonics ● Sea Floor Spreading ● Volcanic Expedition 	<ul style="list-style-type: none"> ● Getting DNA Out of Ancient Fossils (A) 	
<p>9(C) Interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.</p>	<ul style="list-style-type: none"> ● Weather 		

(10) Earth and space. The student knows that climatic interactions exist among Earth, ocean, and weather systems. The student is expected to:

<p>10(A) Recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents</p>	<ul style="list-style-type: none"> ● On the Move: Plate Tectonics ● Sea Floor Spreading 	<ul style="list-style-type: none"> ● Clean-ocean-energy (V) ● Lord-of-the- tree-rings (V) 	
<p>10(B) Identify how global patterns of atmospheric movement influence local</p>	<ul style="list-style-type: none"> ● Weather 		

<p>weather using weather maps that show high and low pressures and fronts;</p>			
<p>(11) Organisms and environments. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is expected to:</p>			
<p>11(A) Describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, freshwater, and terrestrial ecosystems</p>	<ul style="list-style-type: none"> ● The Importance of Coral Reefs ● Life in the Tundra ● Nature’s Weird Surprises 	<ul style="list-style-type: none"> ● Animal Cannibals (A) ● Parasites: Nature's Thieves (A) ● Head Lice - Don’t Bug Me (A) 	<ul style="list-style-type: none"> ● Determining Importance (CL-2, A-1 Dragonflies: Flying Aces) ● Inferring (CL-1, A-2 Animal Cannibals) ● Inferring (CL-2, A-1 Sloth Stories) ● Making Connections/Synthe-sizing (CL-2, A-1 Tamarins Make a Great Day in the Forest) ● Making Connections/Synthe-sizing (CL-3, A-1 Predator-Prey Relationships: The Lynx and the Hare) ● Monitor for Meaning (CL-1, A-1 Lizard Lifestyles) ● Monitor for Meaning CL-2, A-1 Great Barrier Reef) ● Print Features (CL-1, A-1 Bats) ● Print Features CL-2, A-1 Symbiosis: Living Together and Loving It)

			<ul style="list-style-type: none"> ● Print Features (CL-3 A-1 Home Sweet Home: Dens & Other Shelters)
<p>11(B) Investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition</p>	<ul style="list-style-type: none"> ● Caves ● Desert Biomes ● The Importance of Coral Reefs ● Nature’s Weird Surprises ● Prairie Ecosystems ● Rainforests ● Surviving in Nature 	<ul style="list-style-type: none"> ● A Weird Animal: The Binturong (A) ● Vampires in Nature (A) ● Carnivorous Dinosaurs (A) ● The Very Peculiar Anglerfish (A) ● Life Near Undersea Vents (A) ● The Humongous Megafish (A) ● The Venomous Sea Wasp (A) ● Pirate Spiders (A) ● Parasites: Nature's Thieves(A) 	<ul style="list-style-type: none"> ● Context Clues CL-2, A-1 Life at the Top) ● Creating Sensory Images (CL-1, A-1 The Rainforest Awakens My Senses) ● Creating Sensory Images (CL-3 A-2 An Afternoon Rain) ● Determining Importance (CL-1, A-1 A Place with Many Levels) ● Graphic Features (CL-3, A-1 Rainforest Precipitation) ● Inferring (CL-1, A-1 In the Night) ● Monitor for Meaning (CL-3 A-1 Sharing the Sun)
<p>11(C) Explore how short- and long-term environmental changes affect organisms and traits in subsequent populations</p>		<ul style="list-style-type: none"> ● How Plants Trick Animals (A) ● Earthworm- invasion (V) 	
<p>11(D) Recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs,</p>	<ul style="list-style-type: none"> ● Pollution ● Sea Floor Spreading 	<ul style="list-style-type: none"> ● Artificial Reefs (A) ● coral-corrosion (V) ● Disappearing- 	<ul style="list-style-type: none"> ● Graphic Features (CL-1, A-1 What is Happening to the Bluefin Tuna?)

<p>or use of resources have modified these systems.</p>	<ul style="list-style-type: none"> ● The Importance of Coral Reefs ● Rainforests 	<p>frogs (V)</p>	<ul style="list-style-type: none"> ● Graphic Features (CL-1, A-2 What Happened to the Blue Whale?)
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Additional Science Articles and National Science Foundation Science Videos Grades 6-8

25 Scrumptious Facts About Food (A)
50 Fun Facts That Will Amaze Your Friends (A)
The Adventure of Keeping an Aquarium (A)
Bacteria (V)
Chores-don't-have-to-be-a-pain-in-the-butler (V)
Coral-corrosion (V)
Esp-a-lab-in-a-can (V)
Extreme-bacteria (V)
Flowing-free (V)
Getting-ready-for-earthquakes (V)
Girl-powered-science (V)
Hydrogen-power (V)
Icy-evidence-in-the-core (V)
Ins-and-outs-of the-brain (V)
Locked-in-syndrome (V)
Lord-of-the-tree-rings (V)
Musical-computer (V)
Nanoparticles (V)
Picking-your-brain (V)
Pig-poop-energy (V)
Robots-of-your-dreams (V)
Science-on-ice (V)
Sensible-sensors (V)
Signing-made-simple (V)
Sparkling-sunspots (V)
The-creative-brain (V)
The-good-the-bad-and-the-baby (V)
Tongue-driven (V)
Virtual-wildfires (V)

Vision-for-the-blind-fact-or-fiction (V)

Wave-of-the-future-green-gasoline (V)

What-makes-us-tick (V)

X-ray-vision-beyond-the-bones (V)