

Middle School Science	Boardworks Middle School Presentations
2004 Science Curriculum	
STANDARD 5.5: CHARACTERISTICS OF LIFE	
By the end of grade 6...	
5.5.6 A. Matter, Energy and Organization in Living Systems	
1. Explain how systems of the human body are interrelated and regulate the body's internal environment.	Cells to Organisms
2. Identify and describe the structure and function of cells and cell parts.	Animal and Plant Cells
5.5.6 B. Diversity and Biological Evolution	
1. Describe and give examples of the major categories of organisms and of the characteristics shared by organisms.	Classifying Organisms
2. Compare and contrast acquired and inherited characteristics in human and other species.	Animal Behavior Human Behavior Types of Animal Behavior Types of Variation
5.5.6 C. Reproduction and Heredity	
<i>1. Describe life cycles of humans and other organisms.</i>	-
By the end of grade 8...	
5.5.8 A. Matter, Energy and Organization in Living Systems	
1. Explain how the products of respiration and photosynthesis are recycled.	What is Photosynthesis? Releasing Energy Recycling Nutrients
2. Recognize that complex multicellular organisms, including humans, are composed of and defined by interactions of the following: cells; tissues; organs; and systems.	Cells to Organisms
5.5.8 B. Diversity and Biological Evolution	
1. Compare and contrast kinds of organisms using their internal and external characteristics.	Classifying Organisms
2. Discuss how changing environmental conditions can result in evolution or extinction of a species.	Evolution Environmental Change
3. Recognize that individual organisms with certain traits are more likely to survive and have offspring.	Evolution
5.5.8 C. Reproduction and Heredity	

1. Describe how the sorting and recombining of genetic material results in the potential for variation among offspring of humans and other species.	Causes of Variation
STANDARD 5.6: CHEMISTRY	
By the end of grade 6...	
5.6.6 A. Structure and Properties of Matter	
1. Recognize that about 100 different elements have been identified and most materials on Earth are made of a few of them.	What Are Atoms? Elements and Compounds
2. Show that equal volumes of different substances usually have different masses.	–
3. Describe the properties of mixtures and solutions, including concentration and saturation.	What is a Mixture? Solutions
4. Describe characteristic physical properties such as boiling point, melting point, and solubility, and recognize that the property is independent of the amount of sample.	Changing States Changes of Matter Solutions
5.6.6 B. Chemical Reactions	
1. Recognize evidence of a chemical change.	Types of Chemical Reactions
By the end of grade 8...	
5.6.8 A. Structure and Properties of Matter	
1. Know that all matter is composed of atoms that may join together to form molecules.	Elements and Compounds What Are Atoms?
2. Recognize that the phase of matter is determined by the arrangement and motion of atoms and molecules and that the motion of these particles is related to the energy of the system.	Particles in Action
3. Know that there are groups of elements that have similar properties, including highly reactive metals, less reactive metals, highly reactive non-metals, and some almost completely non-reactive gases.	The Periodic Table Metals and Nonmetals Metalloids
4. Recognize that a mixture often can be separated into the original substances using one of more of their characteristic physical properties	Separating Mixtures Chromatography
5.6.8 B. Chemical Reactions	
1. Show how substances can chemically react with each other to form new substances having properties different from those of the original substances.	Making Compounds Types of Chemical Reactions
2. Show that in most chemical reactions energy is transferred into or out of a system.	Energy Changes
3. Demonstrate that regardless how substances within a simple closed system interact, the total mass of the system remains the same.	Conservation of Mass

4. Illustrate how atoms are rearranged when substances react, but that the total number of atoms and the total mass of the products remain the same as the original substances.	Conservation of Mass
STANDARD 5.7: PHYSICS	
By the end of grade 6...	
5.7.6 A. Motion and Forces	
1. Recognize that an object at rest will remain at rest and an object moving in a straight line at a steady speed will continue to move in a straight line at a steady speed unless a net (unbalanced) force acts on it.	What Are Forces?
2. Recognize that motion can be retarded by forces such as friction and air resistance.	Friction
3. Recognize that everything on or near the Earth is pulled toward the Earth's center by gravitational force.	Gravity
5.7.6 B. Energy Transformations	
1. Recognize that heat flows through materials or across space from warmer objects to cooler ones.	Conduction and Convection
2. Show that vibrations in materials can generate waves that can transfer energy from one place to another.	What is Sound?
3. Design an electric circuit to investigate the behavior of a system.	Series Circuits Parallel Circuits
By the end of grade 8...	
5.7.8 A. Motion and Forces	
1. Use quantitative data to show that when more than one force acts on an object at the same time, the forces can reinforce or cancel each other producing a net (unbalanced) force that will change speed and/or direction of the object.	What Are Forces? Calculating Resultant Forces
2. Recognize that every object exerts a gravitational force on every other object, and that the force depends on how much mass the objects have and how far apart they are.	Gravity
5.7.8 B. Energy Transformations	
1. Recognize that the sun is a major source of the Earth's energy and that solar energy includes visible, infrared and ultraviolet radiation.	What is Light? Electromagnetic Waves
2. Describe the nature of various forms of energy, including heat, light, sound, chemical, mechanical, and electrical and trace energy transformations from one form to another.	What is Energy?

3. Describe how heat can be conducted through materials or transferred across space by radiation and know that if the material is a fluid, convection currents may aid the transfer of heat.	Conduction and Convection Radiation
4. Show that light is reflected, refracted, or absorbed when it interacts with matter and that colors may appear as a result of this interaction.	Color Reflection Refraction What is Light?
STANDARD 5.8: EARTH SCIENCE	
By the end of grade 6...	
5.8.6 A. Earth's Properties and Materials	
Reinforce indicators from previous grade level	Soil Different Types of Rocks Sedimentary Rocks
5.8.6 B. Atmosphere and Water	
1. Describe the composition, circulation, and distribution of the world's oceans, estuaries, and marine environments.	Wind and Ocean Currents
2. Describe and illustrate the water cycle.	The Water Cycle
5.8.6 C. Processes that Shape the Earth	
1. Summarize the process involved in the rock cycle and describe the characteristics of the rocks involved.	The Rock Cycle Igneous Rocks Metamorphic Rocks Sedimentary Rocks
5.8.6 D. How We Study the Earth	
1. Utilize various tools such as map projections and topographical maps to interpret features of Earth's surface.	-
By the end of grade 8...	
5.8.8 A. Earth's Properties and Materials	
Reinforce indicators from previous grade level.	Soils Different Types of Rocks Sedimentary Rocks
5.8.8 B. Atmosphere and Water	
1. Describe conditions in the atmosphere that lead to weather systems and how these systems are represented on weather maps.	What is Weather?
5.8.8 C. Processes that Shape the Earth	

1. Explain how Earth's landforms and materials are created through constructive and destructive processes.	Plate Boundaries What is Plate Tectonics? The Rock Cycle
2. Show how successive layers of sedimentary rock and the fossils contained in them can be used to confirm the age, history, changing life forms, and geology of Earth.	Evolution Sedimentary Rocks
5.8.8 D. How We Study the Earth	
<i>1. Utilize data gathered from emerging technologies (e.g., geographic information systems (GIS) and global positioning systems (GPS)) to create representations and describe processes of change on the Earth's surface.</i>	–
<i>2. Explain how technology designed to investigate features of the Earth's surface impacts how scientists study the Earth.</i>	–
STANDARD 5.9: ASTRONOMY AND SPACE SCIENCE	
By the end of grade 6...	
5.9.6 A. Earth, Moon, Sun System	
1. Explain how the motions of the Earth, sun, and moon define units of time including days, months, and years.	Days, Years and Seasons The Earth, Moon and Sun
2. Recognize that changes in the Earth's position relative to the sun produces differing amounts of daylight seasonally.	Days, Years and Seasons
5.9.6 B. Solar System	
1. Using models, demonstrate an understanding of the scale of the solar system that shows distance and size relationships among the sun and planets.	The Solar System
2. Recognize that the sun's gravitational pull holds the planets in their orbits and that the planets' gravitational pull holds their moons in their orbits.	Gravity
5.9.6 C. Stars	
<i>1. Observe and record short-term and long-term changes in the positions of the constellations in the night sky.</i>	–
<i>2. Observe that the planets appear to change their position against the background of stars.</i>	–
5.9.6 D. Galaxies and Universe	
<i>Reinforce indicators from previous grade levels.</i>	–
By the end of grade 8...	
5.9.8 A. Earth, Moon, Sun System	
1. Investigate the Earth, moon, and sun as a system and explain how the motion of these bodies results in the phases of the moon and eclipses.	The Earth, Moon and Sun

2. Explain how the regular and predictable motions of the Earth and moon produce tides.	–
3. Explain how the tilt, rotation, and orbital pattern of the Earth relative to the sun produce seasons and weather patterns.	Days, Years and Seasons What is Weather?
5.9.8 B. Solar System	
1. Describe the physical characteristics of the planets and other objects within the solar system and compare Earth to the rest of the planets.	The Solar System
5.9.8 C. Stars	
1. Understand that the sun is a star and that it shares characteristics with other stars.	–
5.9.8 D. Galaxies and Universe	
1. Know that the universe consists of many billions of galaxies, each including billions of stars.	The Solar System
STANDARD 5.10: ENVIRONMENTAL STUDIES	
By the end of grade 6...	
5.10.6 A. Natural Systems and Interactions	
1. Explain how organisms interact with other components of an ecosystem.	Competition Habitats
2. Describe the natural processes that occur over time in places where direct human impact is minimal.	–
5.10.6 B. Human Interactions and Impact	
1. Describe the effect of human activities on various ecosystems.	Environmental Change Acid Rain Greenhouse Gases
2. Evaluate the impact of personal activities on the local environment.	Environmental Change Reducing Our Energy Bills
By the end of grade 8...	
5.10.8 A. Natural Systems and Interactions	
1. Investigate the impact of catastrophic events such as forest fires, floods, and hurricanes on the environment of New Jersey.	Weather Hazards Flooding Hurricanes
5.10.8 B. Human Interactions and Impact	
1. Compare and contrast practices that affect the use and management of natural resources.	Renewable Energy Nonrenewable Energy Resources Environmental Change

2009 Science Curriculum, Implementation Fall 2011	
5.2 Physical Science:	
A. Properties of Matter	
6 - <i>The volume of some objects can be determined using liquid (water) displacement.</i>	–
6 - <i>The density of an object can be determined from its volume and mass.</i>	–
6 - Pure substances have characteristic intrinsic properties, such as density, solubility, boiling point, and melting point, all of which are independent of the amount of the sample.	Metals and Nonmetals Metalloids
8 - All matter is made of atoms. Matter made of only one type of atom is called an element.	What are Atoms? Elements and Compounds
8 - All substances are composed of one or more of approximately 100 elements.	Elements and Compounds
8 - Properties of solids, liquids, and gases are explained by a model of matter as composed of tiny particles (atoms) in motion	Particles in Action
8 - The Periodic Table organizes the elements into families of elements with similar properties.	The Periodic Table
8 - Elements are a class of substances composed of a single kind of atom. Compounds are substances that are chemically formed and have physical and chemical properties that differ from the reacting substances.	Elements and Compounds
8 - Substances are classified according to their physical and chemical properties. Metals are a class of elements that exhibit physical properties, such as conductivity, and chemical properties, such as producing salts when combined with nonmetals.	Metals and Nonmetals Metalloids
8 - Substances are classified according to their physical and chemical properties. Acids are a class of compounds that exhibit common chemical properties, including a sour taste, characteristic color changes with litmus and other acid/base indicators, and the tendency to react with bases to produce a salt and water.	What Are Acids and Alkalis? What Are Indicators? The pH Scale Neutralization
B. Changes in Matter: Substances can undergo physical or chemical changes to form new substances. Each change involves energy.	
6 - When a new substance is made by combining two or more substances, it has properties that are different from the original substances.	Types of Chemical Reactions Energy Changes Making Gases Making Compounds

8 - When substances undergo chemical change, the number and kinds of atoms in the reactants are the same as the number and kinds of atoms in the products. The mass of the reactants is the same as the mass of the products.	Conservation of Mass
8 - Chemical changes can occur when two substances, elements, or compounds react and produce one or more different substances. The physical and chemical properties of the products are different from those of the reacting substances.	Types of Chemical Reactions Energy Changes Making Gases Making Compounds
C. Forms of Energy: Knowing the characteristics of familiar forms of energy, including potential and kinetic energy, is useful in coming to the understanding that, for the most part, the natural world can be explained and is predictable.	
6 - Light travels in a straight line until it interacts with an object or material. Light can be absorbed, redirected, bounced back, or allowed to pass through. The path of reflected or refracted light can be predicted.	What is Light? Reflection Refraction
6 - Visible light from the Sun is made up of a mixture of all colors of light. To see an object, light emitted or reflected by that object must enter the eye.	What is Light? Color
6 - The transfer of thermal energy by conduction, convection, and radiation can produce large-scale events such as those seen in weather.	Conduction and Convection Radiation What is Weather? Wind and Ocean Currents
8 - A tiny fraction of the light energy from the Sun reaches Earth. Light energy from the Sun is Earth's primary source of energy, heating Earth surfaces and providing the energy that results in wind, ocean currents, and storms.	What is Weather? Wind and Ocean Currents Hurricanes
8 - Energy is transferred from place to place. Light energy can be thought of as traveling in rays. Thermal energy travels via conduction and convection.	Conduction and Convection Radiation What is Light? What is Plate Tectonics?
D. Energy Transfer and Conservation: The conservation of energy can be demonstrated by keeping track of familiar forms of energy as they are transferred from one object to another.	
6 - The flow of current in an electric circuit depends upon the components of the circuit and their arrangement, such as in series or parallel. Electricity flowing through an electrical circuit produces magnetic effects in the wires.	Energy Transfer in Circuits Parallel Circuits Series Circuits How is Electrical Energy Useful? Electromagnets

<p>8 - When energy is transferred from one system to another, the quantity of energy before transfer equals the quantity of energy after transfer. As an object falls, its potential energy decreases as its speed, and consequently its kinetic energy, increases. While an object is falling, some of the object's kinetic energy is transferred to the medium through which it falls, setting the medium into motion and heating it.</p>	<p>What is Energy?</p>
<p>8 - Nuclear reactions take place in the Sun. In plants, light energy from the Sun is transferred to oxygen and carbon compounds, which in combination, have chemical potential energy (photosynthesis).</p>	<p>What is Photosynthesis?</p>
<p>E. Forces and Motion: It takes energy to change the motion of objects. The energy change is understood in terms of forces.</p>	
<p>6 - <i>An object's position can be described by locating the object relative to other objects or a background. The description of an object's motion from one observer's view may be different from that reported from a different observer's view.</i></p>	<p>–</p>
<p>6 - Magnetic, electrical, and gravitational forces can act at a distance.</p>	<p>Magnetic Materials Magnetic Fields Gravity</p>
<p>6 - Friction is a force that acts to slow or stop the motion of objects.</p>	<p>Friction</p>
<p>6 - <i>Sinking and floating can be predicted using forces that depend on the relative densities of objects and materials.</i></p>	<p>–</p>
<p>8 - An object is in motion when its position is changing. The speed of an object is defined by how far it travels divided by the amount of time it took to travel that far.</p>	<p>Distance, Time and Speed</p>
<p>8 - Forces have magnitude and direction. Forces can be added. The net force on an object is the sum of all the forces acting on the object. An object at rest will remain at rest unless acted on by an unbalanced force. An object in motion at constant velocity will continue at the same velocity unless acted on by an unbalanced force.</p>	<p>What Are Forces? Calculating Resultant Forces</p>
<p>5.3 Life Science: All students will understand that life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.</p>	

<p>A. Organization and Development: Living organisms are composed of cellular units (structures) that carry out functions required for life. Cellular units are composed of molecules, which also carry out biological functions.</p>	
<p>6 - Systems of the human body are interrelated and regulate the body's internal environment.</p>	<p>Cells to Organisms Digestion Human Sex Cells and Systems Releasing Energy Respiration and the Circulatory System The Respiratory System The Nervous System The Endocrine System The Musculoskeletal System</p>
<p>6 - Essential functions of plant and animal cells are carried out by organelles.</p>	<p>Animal and Plant Cells</p>
<p>8 - All organisms are composed of cell(s). In multicellular organisms, specialized cells perform specialized functions. Tissues, organs, and organ systems are composed of cells and function to serve the needs of cells for food, air, and waste removal.</p>	<p>Animal and Plant Cells Cells to Organisms</p>
<p>8 - During the early development of an organism, cells differentiate and multiply to form the many specialized cells, tissues, and organs that compose the final organism. Tissues grow through cell division.</p>	<p>Animal And Plant Cells Where Do Cells Come From?</p>
<p>B. Matter and Energy Transformations: Food is required for energy and building cellular materials. Organisms in an ecosystem have different ways of obtaining food, and some organisms obtain their food directly from other organisms</p>	
<p>6 - Plants are producers: They use the energy from light to make food (sugar) from carbon dioxide and water. Plants are used as a source of food (energy) for other organisms.</p>	<p>What is Photosynthesis? Feeding Types Food Chains Food Webs Plants as Food</p>
<p>6 - All animals, including humans, are consumers that meet their energy needs by eating other organisms or their products.</p>	<p>Feeding Types Food Chains Food Webs</p>

8 - Food is broken down to provide energy for the work that cells do, and is a source of the molecular building blocks from which needed materials are assembled.	Chemical Digestion Digestion
C. Interdependence: All animals and most plants depend on both other organisms and their environment to meet their basic needs.	
6 - Various human activities have changed the capacity of the environment to support some life forms.	Environmental Change
6 - The number of organisms and populations an ecosystem can support depends on the biotic resources available and on abiotic factors, such as quantities of light and water, range of temperatures, and soil composition.	Habitats Competition
6 - All organisms cause changes in the ecosystem in which they live. If this change reduces another organism's access to resources, that organism may move to another location or die.	Competition Environmental Change Evolution
8 - Symbiotic interactions among organisms of different species can be classified as: <ul style="list-style-type: none"> • Producer/consumer • Predator/prey • Parasite/host • Scavenger/prey • Decomposer/prey 	Feeding Types Food Chains Food Webs Recycling Nutrients
D. Heredity and Reproduction: Organisms reproduce, develop, and have predictable life cycles. Organisms contain genetic information that influences their traits, and they pass this on to their offspring during reproduction.	
6 - Reproduction is essential to the continuation of every species.	Animal and Plant Cells Human Sex Cells and Systems
6 - Variations exist among organisms of the same generation (e.g., siblings) and of different generations (e.g., parent to offspring).	Types of Variation
6 - Traits such as eye color in human beings or fruit/flower color in plants are inherited.	Types of Variation Causes of Variation Genes and Alleles Inheritance
8 - Some organisms reproduce asexually. In these organisms, all genetic information comes from a single parent. Some organisms reproduce sexually, through which half of the genetic information comes from each parent.	Types of Reproduction

8 - The unique combination of genetic material from each parent in sexually reproducing organisms results in the potential for variation.	Causes of Variation
8 - Characteristics of organisms are influenced by heredity and/or their environment.	Types of Variation
E. Evolution and Diversity: Sometimes, differences between organisms of the same kind provide advantages for surviving and reproducing in different environments. These selective differences may lead to dramatic changes in characteristics of organisms in a population over extremely long periods of time.	
6 - Changes in environmental conditions can affect the survival of individual organisms and entire species.	Environmental Change
8 - Individual organisms with certain traits are more likely than others to survive and have offspring in particular environments. The advantages or disadvantages of specific characteristics can change when the environment in which they exist changes. Extinction of a species occurs when the environment changes and the characteristics of a species are insufficient to allow survival	Evolution
8 - Anatomical evidence supports evolution and provides additional detail about the sequence of branching of various lines of descent.	Evolution
5.4 Earth Systems Science: All students will understand that Earth operates as a set of complex, dynamic, and interconnected systems, and is a part of the all-encompassing system of the universe.	
A. Objects in the Universe: Our universe has been expanding and evolving for 13.7 billion years under the influence of gravitational and nuclear forces. As gravity governs its expansion, organizational patterns, and the movement of celestial bodies, nuclear forces within stars govern its evolution through the processes of stellar birth and death. These same processes governed the formation of our solar system 4.6 billion years ago.	
6 - The height of the path of the Sun in the sky and the length of a shadow change over the course of a year.	Days, Years and Seasons
6 - Earth's position relative to the Sun, and the rotation of Earth on its axis, result in patterns and cycles that define time units of days and years.	Days, Years and Seasons
6 - The Sun's gravity holds planets and other objects in the solar system in orbit, and planets' gravity holds moons in orbit.	Gravity
6 - The Sun is the central and most massive body in our solar system, which includes eight planets and their moons, dwarf planets, asteroids, and comets.	The Solar System

8 - The relative positions and motions of the Sun, Earth, and Moon result in the phases of the Moon, eclipses, and the daily and monthly cycle of tides.	The Earth, Moon and Sun
8 - Earth's tilt, rotation, and revolution around the Sun cause changes in the height and duration of the Sun in the sky. These factors combine to explain the changes in the length of the day and seasons.	Days, Years and Seasons
8 - Gravitation is a universal attractive force by which objects with mass attract one another. The gravitational force between two objects is proportional to their masses and inversely proportional to the square of the distance between the objects.	Gravity
8 - The regular and predictable motion of objects in the solar system (Kepler's Laws) is explained by gravitational forces.	Gravity
B. History of Earth: From the time that Earth formed from a nebula 4.6 billion years ago, it has been evolving as a result of geologic, biological, physical, and chemical processes.	
6 - Successive layers of sedimentary rock and the fossils contained in them tell the factual story of the age, history, changing life forms, and geology of Earth.	Sedimentary Rocks
6 - Earth's current structure has been influenced by both sporadic and gradual events. Changes caused by earthquakes and volcanic eruptions can be observed on a human time scale, but many geological processes, such as mountain building and the shifting of continents, are observed on a geologic time scale.	What is Plate Tectonics? Plate Boundaries Earthquakes The Rock Cycle
6 - Moving water, wind, and ice continually shape Earth's surface by eroding rock and soil in some areas and depositing them in other areas.	Physical Weathering Biological Weathering Chemical Weathering Erosion, Transportation and Deposition
6 - Erosion plays an important role in the formation of soil, but too much erosion can wash away fertile soil from ecosystems, including farms.	Soil
8 - Today's planet is very different than early Earth. Evidence for one-celled forms of life (bacteria) extends back more than 3.5 billion years.	The Solar System
8 - <i>Fossils provide evidence of how life and environmental conditions have changed. The principle of Uniformitarianism makes possible the interpretation of Earth's history. The same Earth processes that occurred in the past occur today.</i>	–
C. Properties of Earth Materials: Earth's composition is unique, is related to the origin of our solar system, and provides us with the raw resources needed to sustain life.	

6 - Soil attributes/properties affect the soil's ability to support animal life and grow plants.	The pH Scale Soil
6 - The rock cycle is a model of creation and transformation of rocks from one form (sedimentary, igneous, or metamorphic) to another. Rock families are determined by the origin and transformations of the rock.	Different Types of Rocks Igneous Rocks Metamorphic Rocks Sedimentary Rocks The Rock Cycle
6 - Rocks and rock formations contain evidence that tell a story about their past. The story is dependent on the minerals, materials, tectonic conditions, and erosion forces that created them.	Different Types of Rocks Igneous Rocks Metamorphic Rocks Sedimentary Rocks The Rock Cycle
8 - Soil consists of weathered rocks and decomposed organic material from dead plants, animals, and bacteria. Soils are often found in layers, each having a different chemical composition and texture.	Soil
8 - Physical and chemical changes take place in Earth materials when Earth features are modified through weathering and erosion.	Using Rocks Biological Weathering Chemical Weathering Physical Weathering Erosion, Transportation and Deposition
8 - Earth's atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has a different physical and chemical composition at different elevations.	The Atmosphere
D. Tectonics: The theory of plate tectonics provides a framework for understanding the dynamic processes within and on Earth.	
6 - Lithospheric plates consisting of continents and ocean floors move in response to movements in the mantle.	The Structure of the Earth What is Plate Tectonics?
6 - Earth's landforms are created through constructive (deposition) and destructive (erosion) processes.	Plate Boundaries
6 - Earth has a magnetic field that is detectable at the surface with a compass	Magnetic Fields
8 - Earth is layered with a lithosphere, a hot, convecting mantle, and a dense, metallic core.	The Structure of the Earth

8 - Major geological events, such as earthquakes, volcanic eruptions, and mountain building, result from the motion of plates. Sea floor spreading, revealed in mapping of the Mid-Atlantic Ridge, and subduction zones are evidence for the theory of plate tectonics.	What is Plate Tectonics? Plate Boundaries Earthquakes
8 - Earth's magnetic field has north and south poles and lines of force that are used for navigation.	Magnetic Fields
E. Energy in Earth Systems: Internal and external sources of energy drive Earth systems.	
6 - The Sun is the major source of energy for circulating the atmosphere and oceans.	What is Weather? Wind and Ocean Currents
8 - The Sun provides energy for plants to grow and drives convection within the atmosphere and oceans, producing winds, ocean currents, and the water cycle.	Wind and Ocean Currents The Water Cycle
F. Climate and Weather: Earth's weather and climate systems are the result of complex interactions between land, ocean, ice, and atmosphere.	
6 - Weather is the result of short-term variations in temperature, humidity, and air pressure.	Climate Zones What is Weather?
6 - Climate is the result of long-term patterns of temperature and precipitation.	Climate Zones
8 - Global patterns of atmospheric movement influence local weather.	Wind and Ocean Currents
8 - Climate is influenced locally and globally by atmospheric interactions with land masses and bodies of water.	Wind and Ocean Currents
8 - Weather (in the short term) and climate (in the long term) involve the transfer of energy and water in and out of the atmosphere.	Climate Zones What is Weather? The Water Cycle
G. Biogeochemical Cycles: The biogeochemical cycles in the Earth systems include the flow of microscopic and macroscopic resources from one reservoir in the hydrosphere, geosphere, atmosphere, or biosphere to another, are driven by Earth's internal and external sources of energy, and are impacted by human activity.	
6 - Circulation of water in marine environments is dependent on factors such as the composition of water masses and energy from the Sun or wind.	The Water Cycle
6 - An ecosystem includes all of the plant and animal populations and nonliving resources in a given area. Organisms interact with each other and with other components of an ecosystem.	Habitats
6 - Personal activities impact the local and global environment.	Environmental Change Greenhouse Gases Reducing Our Energy Bills

8 - Water in the oceans holds a large amount of heat, and therefore significantly affects the global climate system.	Wind and Ocean Currents
8 - <i>Investigations of environmental issues address underlying scientific causes and may inform possible solutions.</i>	-