

**Classroom Jeopardy!® Earth Science and Physical Science (Middle School)
Standards and Correlation Document**

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Topic	Games/Categories	Source of Standard	Standard
Properties of matter; physical and chemical changes	Earth Science Game 1: Mineral and Gem Colors	NSES Science Content Standards Grades 5-8; Content Standard B: Physical Science; Properties and Changes in Properties of Matter	<ul style="list-style-type: none"> • A substance has characteristic properties, such as density, a boiling point, and solubility, all of which are independent of the amount of the sample. A mixture of substances often can be separated into the original substances using one or more of the characteristic properties. • Substances react chemically in characteristic ways with other substances to form new substances (compounds) with different characteristic properties. In chemical reactions, the total mass is conserved. Substances often are placed in categories or groups if they react in similar ways; metals is an example of such a group.
	Earth Science Game 1: Rock or Mineral?		
	Earth Science Game 2: Spot the Not		
	Earth Science Game 2: Animal, Vegetable, or Mineral?	McRel Content Knowledge Standards and Benchmarks, Science, Physical Sciences, Standard 8, Level III (Grade 6-8)	<p>Benchmark 5 Knows that many elements can be grouped according to similar properties (e.g., highly reactive metals, less-reactive metals, highly reactive nonmetals, almost completely nonreactive gases).</p> <p>Benchmark 7 Knows methods used to separate mixtures into their component parts (boiling, filtering, chromatography, screening).</p> <p>Benchmark 8 Knows that substances react chemically in characteristic ways with other substances to form new substances (compounds) with different characteristic properties.</p> <p>Benchmark 10 Knows that oxidation involves the combining of oxygen with another substance (e.g., burning, rusting).</p>
	Physical Science Game 1: Solid, Liquid, or Gas? Part 1	Texas Essential Knowledge and Skills, 112.22 Science, Grade 6	7 (A) demonstrate that new substances can be made when two or more substances are chemically combined and compare the properties of the new substances to the original substances. (B) classify substances by their physical and chemical properties.
	Physical Science Game 1: Solid, Liquid, or Gas? Part 2		
	Physical Science Game 1: Physical Properties	Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, The Nature of Matter	<ul style="list-style-type: none"> • knows ways in which substances differ (for example, mass, volume, shape, density, texture, reaction to heat and light). • understands that mass is the amount of material in an object. • understands that matter may exist as solids, liquids, and gases. • knows that molecular motion increases from solids to liquids to gases. • knows the physical properties of various substances. • knows the chemical properties of various substances. • knows the difference between a physical and chemical change.
	Physical Science Game 1: Metal or Nonmetal?		
	Physical Science Game 1: Double Letter Science		
	Physical Science Game 1: Physics Specifics	Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 6, Standard 1: Physical Properties of Matter	1. Matter has physical properties that can be measured (i.e., mass, volume, temperature, color, and texture).
Physical Science Game 1: Dare to Compare			
Physical Science Game 2: Acid or Base?	Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	7 (A) identify and demonstrate everyday examples of chemical phenomena such as rusting and tarnishing of metals and burning of wood.	

Physical Science Game 2: Elegant Elements	Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, The Nature of Matter	<ul style="list-style-type: none"> • uses a variety of measurements to describe the physical properties of matter (for example, volume and mass). • knows that physical changes do not result in new substances. • knows that chemical changes result in new substances with different characteristics. • knows chemical and physical changes that occur in nature.
Physical Science Game 2: Double-Duty Words		
Physical Science Game 2: Compound Facts	Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 7, Standard 1: Properties and Physical Changes in Matter	1. Matter has physical properties that can be measured (i.e., mass, volume, temperature, color, texture, and density). Physical changes of a substance do not alter the chemical nature of a substance (e.g., phase changes of water and/or sanding wood).
Physical Science Game 2: Forms of Energy	California State Board of Education K-12 Content Standards, Grade 8 Science, Periodic Table	7 c. <i>Students know</i> substances can be classified by their properties, including their melting temperature, density, hardness, and thermal and electrical conductivity.
Physical Science Game 2: Acidic or Basic?	California State Board of Education K-12 Content Standards, Grade 8 Science, Reactions	5. Chemical reactions are processes in which atoms are rearranged into different combinations of molecules. As a basis for understanding this concept: a. <i>Students know</i> reactant atoms and molecules interact to form products with different chemical properties. d. <i>Students know</i> physical processes include freezing and boiling, in which a material changes form with no chemical reaction. e. <i>Students know</i> how to determine whether a solution is acidic, basic, or neutral.
Physical Science Game 3: Physical or Chemical?		
Physical Science Game 3: Chemical Properties		
Physical Science Game 3: Take Away a Letter	California State Board of Education K-12 Content Standards, Grade 8 Science, Density and Buoyancy	8. a. <i>Students know</i> density is mass per unit volume.
Physical Science Game 3: Final Jeopardy!	Texas Essential Knowledge and Skills, 112.24 Science, Grade 8	9 (A) demonstrate that substances may react chemically to form new substances. 9 (D) identify that physical and chemical properties influence the development and application of everyday materials such as cooking surfaces, insulation, adhesives, and plastics.
	Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 8, Standard 1: Properties and Chemical Changes in Matter	1. Substances react chemically with other substances to form new substances with different characteristics (e.g., rusting, burning, reaction between baking soda and vinegar). 2. Matter has physical properties that can be measured (i.e., mass, volume, temperature, color, texture, density, and hardness). In chemical reactions and physical changes, matter is conserved (e.g., compare and contrast physical and chemical changes).

Elements, compounds, atoms, and molecules	Physical Science Game 1: Solid, Liquid, or Gas? Part 2	NSES Science Content Standards Grades 5-8; Content Standard B: Physical Science; Properties and Changes in Properties of Matter	<ul style="list-style-type: none"> • Chemical elements do not break down during normal laboratory reactions involving such treatments as heating, exposure to electric current, or reaction with acids. There are more than 100 known elements that combine in a multitude of ways to produce compounds, which account for the living and nonliving substances that we encounter.
	Physical Science Game 2: Element or Compound?	McRel Content Knowledge Standards and Benchmarks, Science, Physical Sciences, Standard 8, Level III (Grade 6-8)	Benchmark 1 Knows that matter is made up of tiny particles called atoms, and different arrangements of atoms into groups compose all substances.
	Physical Science Game 2: Not an Element		Benchmark 2 Knows that atoms often combine to form a molecule (or crystal), the smallest particle of a substance that retains its properties.
	Physical Science Game 2: Elegant Elements		Benchmark 3 Knows that states of matter depend on molecular arrangement and motion (e.g., molecules in solids are packed tightly together and their movement is restricted to vibrations; molecules in liquids are loosely packed and move easily past each other; molecules in gases are quite far apart and move about freely).
	Physical Science Game 2: Faster!		Benchmark 4 Knows that substances containing only one kind of atom are elements and do not break down by normal laboratory reactions (e.g., heating, exposure to electric current, reaction with acids); over 100 different elements exist.
	Physical Science Game 2: Double-Duty Words		
	Physical Science Game 2: Compound Facts	Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, The Nature of Matter	<ul style="list-style-type: none"> • understands that particles and objects may be either neutral or have a positive or negative charge. • determines the charge of an ion by comparing the number of protons and electrons associated with it.
	Physical Science Game 2: Key Elements	Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	7 (B) describe physical properties of elements and identify how they are used to position an element on the periodic table. 7 (C) recognize that compounds are composed of elements.
	Physical Science Game 2: Forms of Energy	Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, The Nature of Matter	<ul style="list-style-type: none"> • understands that protons and neutrons are located in the nucleus of the atom while electrons exist in areas of probability outside of the nucleus. • understands that the mass of an atom is concentrated in the nucleus where the protons and neutrons are located. • determines the mass number and atomic number of an atom from the number of protons and neutrons.
	Physical Science Game 3: Cells, Atoms, or Both?		
	Physical Science Game 3: Atomic Particles	California State Board of Education K-12 Content Standards, Grade 8 Science, Structure of Matter	3 a. <i>Students know</i> the structure of the atom and know it is composed of protons, neutrons, and electrons. 3 b. <i>Students know</i> that compounds are formed by combining two or more different elements and that compounds have properties that are different from their constituent elements. 3 d. <i>Students know</i> the states of matter (solid, liquid, gas) depend on molecular motion. 3 e. <i>Students know</i> that in solids the atoms are closely locked in position and can only vibrate; in liquids the atoms and molecules are more loosely connected and can collide with and move past one another; and in gases the atoms and molecules are free to move independently, colliding frequently.
	Physical Science Game 3: Element Symbols		
	Physical Science Game 3: Chemical Formulas		
Physical Science Game 3: Ion Charge			

	Physical Science Game 3: Take Away a Letter	California State Board of Education K-12 Content Standards, Grade 8 Science, Structure of Matter	3. Each of the more than 100 elements of matter has distinct properties and a distinct atomic structure. All forms of matter are composed of one or more of the elements. b. <i>Students know</i> that compounds are formed by combining two or more different elements and that compounds have properties that are different from their constituent elements. f. <i>Students know</i> how to use the periodic table to identify elements in simple compounds.
	Physical Science Game 3: Final Jeopardy!	California State Board of Education K-12 Content Standards, Grade 8 Science, Periodic Table	7. The organization of the periodic table is based on the properties of the elements and reflects the structure of atoms. As a basis for understanding this concept: a. <i>Students know</i> how to identify regions corresponding to metals, nonmetals, and inert gases. b. <i>Students know</i> each element has a specific number of protons in the nucleus (the atomic number) and each isotope of the element has a different but specific number of neutrons in the nucleus.
		Texas Essential Knowledge and Skills, 112.24 Science, Grade 8	8 (A) describe the structure and parts of an atom. 8 (B) identify the properties of an atom including mass and electrical charge. 9 (B) interpret information on the periodic table to understand that physical properties are used to group elements.
Organic chemistry	Physical Science Game 2: Key Elements	California State Board of Education K-12 Content Standards, Grade 8 Science, Chemistry of Living Systems	6. a. <i>Students know</i> that carbon, because of its ability to combine in many ways with itself and other elements, has a central role in the chemistry of living organisms.
Motions and forces	Physical Science Game 1: Physics Specifics	NSES Science Content Standards Grades 5-8; Content Standard B: Physical Science; Motions and Forces	<ul style="list-style-type: none"> The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph. An object that is not being subjected to a force will continue to move at a constant speed and in a straight line.
	Physical Science Game 1: Newton's Nuggets	McRel Content Knowledge Standards and Benchmarks, Science, Physical Sciences, Standard 10, Level III (Grade 6-8)	<p>Benchmark 1 Understands general concepts related to gravitational force (e.g., every object exerts gravitational force on every other object; this force depends on the mass of the objects and their distance from one another; gravitational force is hard to detect unless at least one of the objects, such as the Earth, has a lot of mass).</p> <p>Benchmark 5 Knows that an object that is not being subjected to a force will continue to move at a constant speed and in a straight line.</p>
	Physical Science Game 1: Pressure		
	Physical Science Game 1: Double Letter Science		
	Physical Science Game 1: Physics Specifics	Texas Essential Knowledge and Skills, 112.22 Science, Grade 6	6 (A) identify and describe the changes in position, direction of motion, and speed of an object when acted upon by force.
	Physical Science Game 1: Final Jeopardy!	Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Force and Motion	<ul style="list-style-type: none"> knows that the net force is dependent on the direction and magnitude of forces acting on a body. knows uses of simple machines. knows that an object at rest will stay at rest unless acted upon by an outside force. knows objects in motion will remain in motion unless acted upon by an outside force. knows that gravity is a force that causes an object to fall to the ground. knows that gravity causes an object to have weight.
	Physical Science Game 2: Physics and Physiques		

	Physical Science Game 2: Faster!	Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	6 (A) demonstrate basic relationships between force and motion using simple machines including pulleys and levers. 6 (B) demonstrate that an object will remain at rest or move at a constant speed and in a straight line if it is not being subjected to an unbalanced force.
	Physical Science Game 2: Simple Machines	Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, The Nature of Matter	<ul style="list-style-type: none"> • understands that weight is the result of gravitational pull on an object.
	Physical Science Game 3: Spot the Not	Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, Force and Motion	<ul style="list-style-type: none"> • knows that the motion of an object can be described by its position, direction of motion, and speed. • knows the properties of forces. • knows that objects in a vacuum accelerate at a constant rate. • understands uses and combinations of simple machines in complicated machines. • understands that gravity is a force exerted on a mass that causes an object to have weight. • knows that gravity is a force that holds the Solar System together.
		California State Board of Education K-12 Content Standards, Grade 8 Science, Forces	2. Unbalanced forces cause changes in velocity. As a basis for understanding this concept: a. <i>Students know</i> a force has both direction and magnitude. d. <i>Students know</i> how to identify separately the two or more forces that are acting on a single static object, including gravity, elastic forces due to tension or compression in matter, and friction. e. <i>Students know</i> that when the forces on an object are unbalanced, the object will change its velocity (that is, it will speed up, slow down, or change direction). g. <i>Students know</i> the role of gravity in forming and maintaining the shapes of planets, stars, and the solar system.
		California State Board of Education K-12 Content Standards, Grade 8 Science, Motion	1. d. <i>Students know</i> the velocity of an object must be described by specifying both the direction and the speed of the object.
		Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 8, Standard 2: Motions and Forces	The motion of an object can be described by its position, direction of motion, and speed. 1. The motion of an object can be measured. The position of an object, its speed and direction can be represented on a graph. 2. An object that is not being subjected to a net force will continue to move at a constant velocity (in a straight line and a constant speed).

Energy and transfer of energy	Physical Science Game 1: Electricity	NSES Science Content Standards Grades 5-8; Content Standard B: Physical Science; Transfer of Energy	<ul style="list-style-type: none"> • Energy is a property of many substances and is associated with heat, light, electricity, mechanical motion, sound, nuclei, and the nature of a chemical. Energy is transferred in many ways. • Heat moves in predictable ways, flowing from warmer objects to cooler ones, until both reach the same temperature. • Light interacts with matter by transmission (including refraction), absorption, or scattering (including reflection). To see an object, light from that object—emitted by or scattered from it—must enter the eye. • The sun is a major source of energy for changes on the earth's surface. The sun loses energy by emitting light. A tiny fraction of that light reaches the earth, transferring energy from the sun to the earth. The sun's energy arrives as light with a range of wavelengths, consisting of visible light, infrared, and ultraviolet radiation.
	Physical Science Game 1: Physics Specifics		
	Physical Science Game 1: Energy True or False		
	Physical Science Game 2: Forms of Energy		
	Physical Science Game 2: Final Jeopardy!	McRel Content Knowledge Standards and Benchmarks, Science, Physical Sciences, Standard 9, Level III (Grade 6-8)	<p>Benchmark 1 Knows that energy is a property of many substances (e.g., heat energy is in the disorderly motion of molecules and in radiation; chemical energy is in the arrangement of atoms; mechanical energy is in moving bodies or in elastically distorted shapes; electrical energy is in the attraction or repulsion between charges).</p> <p>Benchmark 2 Understands the law of conservation of energy (i.e., energy cannot be created or destroyed but only changed from one form to another).</p> <p>Benchmark 3 Knows that heat energy flows from warmer materials or regions to cooler ones through conduction, convection, and radiation.</p> <p>Benchmark 4 Knows how the Sun acts as a major source of energy for changes on the Earth's surface (i.e., the Sun loses energy by emitting light; some of this light is transferred to the Earth in a range of wavelengths including visible light, infrared radiation, and ultraviolet radiation).</p> <p>Benchmark 6 Knows that most chemical and nuclear reactions involve a transfer of energy (e.g., heat, light, mechanical motion, electricity).</p>
	Physical Science Game 3: Spot the Not		
	Physical Science Game 3: SI Units		
Physical Science Game 3: Take Away a Letter	California State Board of Education K-12 Content Standards, Grade 6 Science, Heat (Thermal Energy)	3. Heat moves in a predictable flow from warmer objects to cooler objects until all the objects are at the same temperature. As a basis for understanding this concept: a. <i>Students know</i> energy can be carried from one place to another by heat flow or by waves, including water, light and sound waves, or by moving objects.	
	California State Board of Education K-12 Content Standards, Grade 6 Science, Energy in the Earth System	4. Many phenomena on Earth's surface are affected by the transfer of energy through radiation and convection currents. As a basis for understanding this concept: a. <i>Students know</i> the sun is the major source of energy for phenomena on Earth's surface; it powers winds, ocean currents, and the water cycle.	
	Texas Essential Knowledge and Skills, 112.22 Science, Grade 6	8 (A) define matter and energy. 9 (A) identify energy transformations occurring during the production of energy for human use such as electrical energy to heat energy or heat energy to electrical energy.	

		Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 6, Standard 2: Transfer of Energy	1. Energy exists in many forms such as, heat, light, electricity, mechanical motion, and sound. Energy can be transferred in various ways. 2. Electrical circuits provide a means of transferring electrical energy when heat, light, and sound are produced (e.g., open and closed circuits).
		Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 6, Standard 5: Structures of the Earth and the Solar System	3. The sun provides the light and heat necessary to maintain life on Earth and is the ultimate source of energy (i.e., producers receive their energy from the sun).
		Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Energy	<ul style="list-style-type: none"> • knows different types of energy and the units used to quantify the energy (for example, solar, nuclear, electrical, chemical). • understands that energy can be converted from one form to another (for example, solar energy to heat energy). • understands that energy moves through systems.
		Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	8 (A) illustrate examples of potential and kinetic energy in everyday life such as objects at rest, movement of geologic faults, and falling water.
		Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, Energy	<ul style="list-style-type: none"> • knows the direction of energy flow when a change in the phase of matter occurs. • knows the difference between potential and kinetic energy. • knows ways to change energy from potential to kinetic.
Light and sound	Earth Science Game 1: Weather Wonders	McRel Content Knowledge Standards and Benchmarks, Science, Physical Sciences, Standard 9, Level III (Grade 6-8)	Benchmark 7 Knows that vibrations (e.g., sounds, earthquakes) move at different speeds in different materials, have different wavelengths, and set up wave-like disturbances that spread away from the source.
	Physical Science Game 3: Spot the Not		
	Physical Science Game 3: Wave Science	Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, The Nature of Matter	<ul style="list-style-type: none"> • knows the properties of waves (frequency, amplitude, wavelength). • knows forms of radiant energy and their applications to everyday life (for example, visible, microwave, radio).
		Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	8 (B) identify that radiant energy from the Sun is transferred into chemical energy through the process of photosynthesis.
Structure and function in human body and other living systems	Physical Science Game 2: Physics and Physiques	NSES Science Content Standards Grades 5-8; Content Standard C: Life Science; Structure and Function in Living Systems	<ul style="list-style-type: none"> • Living systems at all levels of organization demonstrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, organs, tissues, organ systems, whole organisms, and ecosystems. • Specialized cells perform specialized functions in multicellular organisms. Groups of specialized cells cooperate to form a tissue, such as a muscle. Different tissues are in turn grouped together to form larger functional units, called organs. Each type of cell, tissue, and organ has a distinct structure and set of functions that serve the organism as a whole.
	Physical Science Game 3: Take Away a Letter		

		McRel Content Knowledge Standards and Benchmarks, Science, Life Sciences, Standard 5, Level III (Grade 6-8)	<p>Benchmark 4 Knows that multicellular organisms have a variety of specialized cells, tissues, organs, and organ systems that perform specialized functions (e.g., digestion, respiration, reproduction, circulation, excretion, movement, control and coordination, protection from disease).</p> <p>Benchmark 5 Knows that organisms have a great variety of body plans and internal structures that serve specific functions for survival (e.g., digestive structures in vertebrates, invertebrates, unicellular organisms, and plants).</p>
		Texas Essential Knowledge and Skills, 112.22 Science, Grade 6	(10) Science concepts. The student knows the relationship between structure and function in living systems. The student is expected to: (A) differentiate between structure and function. (B) determine that all organisms are composed of cells that carry on functions to sustain life. (C) identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations.
		Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Processes of Life	<ul style="list-style-type: none"> knows ways systems in an organism function and interact (for example, the muscular system provides the ability to move and is supported by the skeletal system when one is present).
		California State Board of Education K-12 Content Standards, Grade 7 Science, Structure and Function in Living Systems	<p>5. The anatomy and physiology of plants and animals illustrate the complementary nature of structure and function. As a basis for understanding this concept:</p> <p>a. <i>Students know</i> plants and animals have levels of organization for structure and function, including cells, tissues, organs, organ systems, and the whole organism.</p> <p>b. <i>Students know</i> organ systems function because of the contributions of individual organs, tissues, and cells. The failure of any part can affect the entire system.</p> <p>c. <i>Students know</i> how bones and muscles work together to provide a structural framework for movement.</p>
		Texas Essential Knowledge and Skills, 112.24 Science, Grade 8	6 (A) describe interactions among systems in the human organism.
Structure of the earth	Earth Science Game 2: Crust, Mantle, or Core?	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Structure of the Earth System	<ul style="list-style-type: none"> The solid earth is layered with a lithosphere; hot, convecting mantle; and dense, metallic core.
	Earth Science Game 2: Earthly 'Spheres	McRel Content Knowledge Standards and Benchmarks, Science, Earth and Space Sciences, Standard 2, Level III (Grade 6-8)	<p>Benchmark 2 Knows that the Earth is comprised of layers including a core, mantle, lithosphere, hydrosphere, and atmosphere.</p>
	Earth Science Game 2: Spot the Not	California State Board of Education K-12 Content Standards, Grade 6 Science, Plate Tectonics and Earth's Structure	1. b. <i>Students know</i> Earth is composed of several layers: a cold, brittle lithosphere; a hot, convecting mantle; and a dense, metallic core.
	Earth Science Game 2: Cm, M, or Km?		

	Earth Science Game 3: Take Away a Letter	Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 6, Standard 5: Structures of the Earth and the Solar System	1. Earth has four main systems that interact: the atmosphere, the hydrosphere, the biosphere, and the geosphere.
		Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 7, Standard 5: Structures of the Earth System	The earth is mostly rock, three-fourths of its surface is covered by a relatively thin layer of water, and the entire planet is surrounded by a relatively thin blanket of air, and is able to support life.
Rock cycle and types of rock	Earth Science Game 1: Rock or Mineral?	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Structure of the Earth System	<ul style="list-style-type: none"> Some changes in the solid earth can be described as the "rock cycle." Old rocks at the earth's surface weather, forming sediments that are buried, then compacted, heated, and often recrystallized into new rock. Eventually, those new rocks may be brought to the surface by the forces that drive plate motions, and the rock cycle continues.
	Earth Science Game 2: Rocks	McRel Content Knowledge Standards and Benchmarks, Science, Earth and Space Sciences, Standard 2, Level III (Grade 6-8)	<p>Benchmark 5 Knows processes involved in the rock cycle (e.g., old rocks at the surface gradually weather and form sediments that are buried, then compacted, heated, and often recrystallized into new rock; this new rock is eventually brought to the surface by the forces that drive plate motions, and the rock cycle continues).</p> <p>Benchmark 6 Knows that sedimentary, igneous, and metamorphic rocks contain evidence of the minerals, temperatures, and forces that created them.</p>
	Earth Science Game 2: Spot the Not	Texas Essential Knowledge and Skills, 112.22 Science, Grade 6	14 (A) summarize the rock cycle.
	Earth Science Game 2: Igneous or Sedimentary?	California State Board of Education K- 12 Content Standards, Grade 7 Science, Earth and Life History	4 c. <i>Students know</i> that the rock cycle includes the formation of new sediment and rocks and that rocks are often found in layers, with the oldest generally on the bottom.
		Texas Essential Knowledge and Skills, 112.24 Science, Grade 8	12 (A) analyze and predict the sequence of events in the lunar and rock cycles.
			Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 8, Standard 4: Structures and Forces of the Earth and Solar System
Landforms and forces that shape the earth	Earth Science Game 1: Final Jeopardy!	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Structure of the Earth System	<ul style="list-style-type: none"> Landforms are the result of a combination of constructive and destructive forces. Constructive forces include crustal deformation, volcanic eruption, and deposition of sediment, while destructive forces include weathering and erosion. Lithospheric plates on the scales of continents and oceans constantly move at rates of centimeters per year in response to movements in the mantle. Major geological events, such as earthquakes, volcanic eruptions, and mountain building, result from these plate motions.
	Earth Science Game 2: Rocks	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Earth's History	<ul style="list-style-type: none"> The earth processes we see today, including erosion, movement of lithospheric plates, and changes in atmospheric composition, are similar to those that occurred in the past. earth history is also influenced by occasional catastrophes, such as the impact of an asteroid or comet.
	Earth Science Game 2: Surface Shapers		
	Earth Science Game 2: Sediment Buildup		

<p>Earth Science Game 2: Quake Quiz</p> <p>Earth Science Game 2: Volcano or Glacier?</p> <p>Earth Science Game 2: Cm, M, or Km?</p>	<p>McRel Content Knowledge Standards and Benchmarks, Science, Earth and Space Sciences, Standard 2, Level III (Grade 6-8)</p>	<p>Benchmark 2 Knows how landforms are created through a combination of constructive and destructive forces (e.g., constructive forces such as crustal deformation, volcanic eruptions, and deposition of sediment; destructive forces such as weathering and erosion).</p> <p>Benchmark 4 Knows that the Earth's crust is divided into plates that move at extremely slow rates in response to movements in the mantle.</p>
	<p>California State Board of Education K-12 Content Standards, Grade 6 Science, Shaping Earth's Surface</p>	<p>2. Topography is reshaped by the weathering of rock and soil and by the transportation and deposition of sediment.</p> <p>d. <i>Students know</i> earthquakes, volcanic eruptions, landslides, and floods change human and wildlife habitats.</p>
	<p>California State Board of Education K-12 Content Standards, Grade 6 Science, Plate Tectonics and Earth's Structure</p>	<p>1. Plate tectonics accounts for important features of Earth's surface and major geologic events. As a basis for understanding this concept:</p> <p>c. <i>Students know</i> lithospheric plates the size of continents and oceans move at rates of centimeters per year in response to movements in the mantle.</p> <p>d. <i>Students know</i> that earthquakes are sudden motions along breaks in the crust called faults and that volcanoes and fissures are locations where magma reaches the surface.</p> <p>e. <i>Students know</i> major geologic events, such as earthquakes, volcanic eruptions, and mountain building, result from plate motions.</p> <p>f. <i>Students know</i> how to explain major features of California geology (including mountains, faults, volcanoes) in terms of plate tectonics.</p> <p>g. <i>Students know</i> how to determine the epicenter of an earthquake and know that the effects of an earthquake on any region vary, depending on the size of the earthquake, the distance of the region from the epicenter, the local geology, and the type of construction in the region.</p>
	<p>Texas Essential Knowledge and Skills, 112.22 Science, Grade 6</p>	<p>6 (C) identify forces that shape features of the Earth including uplifting, movement of water, and volcanic activity.</p>
	<p>Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Processes that Shape the Earth</p>	<ul style="list-style-type: none"> • understands that the surface of the Earth is constantly changing due to mechanical and chemical action. • knows that different events on the Earth change features on Earth (for example, hurricanes, earthquakes, volcanoes). • understands the processes that prevent or cause erosion.
	<p>Texas Essential Knowledge and Skills, 112.23 Science, Grade 7</p>	<p>14 (B) analyze effects of regional erosional deposition and weathering.</p>
	<p>Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, Processes that Shape the Earth</p>	<ul style="list-style-type: none"> • knows the ways in which the Earth's surface is eroded and reshaped (for example, weathering, erosion, deposition).
	<p>Texas Essential Knowledge and Skills, 112.24 Science, Grade 8</p>	<p>14 (A) predict land features resulting from gradual changes such as mountain building, beach erosion, land subsidence, and continental drift.</p>
	<p>Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 8, Standard 4: Structures and Forces of the Earth and Solar System</p>	<p>1. Landforms result from constructive forces such as crustal deformation, volcanic eruption, and deposition of sediment and destructive forces such as weathering and erosion.</p>

Soil	Earth Science Game 1: Earth in Trouble	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Structure of the Earth System	<ul style="list-style-type: none"> • Soil consists of weathered rocks and decomposed organic material from dead plants, animals, and bacteria. Soils are often found in layers, with each having a different chemical composition and texture.
	Earth Science Game 2: Final Jeopardy!	McRel Content Knowledge Standards and Benchmarks, Science, Earth and Space Sciences, Standard 2, Level III (Grade 6-8)	Benchmark 3 Knows components of soil and other factors that influence soil texture, fertility, and resistance to erosion (e.g., plant roots and debris, bacteria, fungi, worms, rodents).
		Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Processes that Shape the Earth	<ul style="list-style-type: none"> • knows ways that plants and animals reconstitute the soil and alter the landscape.
		Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, Processes that Shape the Earth	<ul style="list-style-type: none"> • knows the ways in which living things reshape the landscape (for example, bacteria, fungi, worms, rodents, and other organisms add organic matter to the soil, increasing soil fertility, encouraging plant growth, and strengthening resistance to erosion).
History of earth, fossils	Earth Science Game 1: Test of Time	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Earth's History	<ul style="list-style-type: none"> • Fossils provide important evidence of how life and environmental conditions have changed.
	Earth Science Game 2: Spot the Not	McRel Content Knowledge Standards and Benchmarks, Science, Earth and Space Sciences, Standard 2, Level III (Grade 6-8)	Benchmark 7 Knows how successive layers of sedimentary rock and the fossils contained within them can be used to confirm the age, history, and changing life forms of the Earth, and how this evidence is affected by the folding, breaking, and uplifting of layers.
		McRel Content Knowledge Standards and Benchmarks, Science, Life Sciences, Standard 7, Level III (Grade 6-8)	Benchmark 2 Knows that the fossil record, through geologic evidence, documents the appearance, diversification, and extinction of many life forms
	Earth Science Game 2: Surface Shapers	Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Processes that Shape the Earth	<ul style="list-style-type: none"> • knows that sedimentary rock may contain fossils of plants, animals, and microbes.
		California State Board of Education K- 12 Content Standards, Grade 7 Science, Earth and Life History	4. d. <i>Students know</i> that evidence from geologic layers and radioactive dating indicates Earth is approximately 4.6 billion years old and that life on this planet has existed for more than 3 billion years. 4 e. <i>Students know</i> fossils provide evidence of how life and environmental conditions have changed.
		Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, Processes that Shape the Earth	<ul style="list-style-type: none"> • understands that fossils are used to predict and explain the similarities and differences of organisms that lived in the past and compare them with those living today.
Resources	Earth Science Game 1: Useful Minerals	California State Board of Education K- 12 Content Standards, Grade 6 Science, Resources	6. Sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation. b. <i>Students know</i> different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable. c. <i>Students know</i> the natural origin of the materials used to make common objects.
	Earth Science Game 2: Can U Renew?		
	Earth Science Game 2: Organic or Inorganic?	Texas Essential Knowledge and Skills, 112.22 Science, Grade 6	9 (C) research and describe energy types from their source to their use and determine if the type is renewable, nonrenewable, or inexhaustible.

	Physical Science Game 2: Elegant Elements	Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, How Living Things Interact with Their Environment	<ul style="list-style-type: none"> • knows renewable and nonrenewable energy sources.
		Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	14 (C) make inferences and draw conclusions about effects of human activity on Earth's renewable, nonrenewable, and inexhaustible resources.
		Florida Dept. of Education Sunshine State Standards, Science, Seventh Grade, Energy	<ul style="list-style-type: none"> • knows that fossil fuels are found in the Earth, they are nonrenewable, and the advantages and disadvantages of their use.
		Florida Dept. of Education Sunshine State Standards, Science, Eighth Grade, How Living Things Interact with Their Environment	<ul style="list-style-type: none"> • knows that some resources are renewable and others are nonrenewable.
Water cycle, atmosphere, weather and climate	Earth Science Game 1: Weather Wonders	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Structure of the Earth System	<ul style="list-style-type: none"> • Water, which covers the majority of the earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the "water cycle." Water evaporates from the earth's surface, rises and cools as it moves to higher elevations, condenses as rain or snow, and falls to the surface where it collects in lakes, oceans, soil, and in rocks underground. • The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different properties at different elevations. • Clouds, formed by the condensation of water vapor, affect weather and climate.
	Earth Science Game 1: Water Cycle		
	Earth Science Game 1: Double Letter Weather	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Earth in the Solar System	<ul style="list-style-type: none"> • The sun is the major source of energy for phenomena on the earth's surface, such as growth of plants, winds, ocean currents, and the water cycle. Seasons result from variations in the amount of the sun's energy hitting the surface, due to the tilt of the earth's rotation on its axis and the length of the day.
	Earth Science Game 1: Test of Time		
	Earth Science Game 2: Earthly 'Spheres	McRel Content Knowledge Standards and Benchmarks, Science, Earth and Space Sciences, Standard 1, Level III (Grade 6-8)	<p>Benchmark 1 Knows the composition and structure of the Earth's atmosphere (e.g., temperature and pressure in different layers of the atmosphere, circulation of air masses).</p> <p>Benchmark 2 Knows the processes involved in the water cycle (e.g., evaporation, condensation, precipitation, surface run-off, percolation) and their effects on climatic patterns.</p> <p>Benchmark 3 Knows that the Sun is the principle energy source for phenomena on the Earth's surface (e.g., winds, ocean currents, the water cycle, plant growth).</p> <p>Benchmark 6 Knows ways in which clouds affect weather and climate (e.g., precipitation, reflection of light from the Sun, retention of heat energy emitted from the Earth's surface).</p>
	Earth Science Game 2: Spot the Not		
	California State Board of Education K-12 Content Standards, Grade 6 Science, Energy in the Earth System	<p>4. a. <i>Students know</i> the sun is the major source of energy for phenomena on Earth's surface; it powers winds, ocean currents, and the water cycle.</p> <p>4 e. <i>Students know</i> differences in pressure, heat, air movement, and humidity result in changes of weather.</p>	

		Texas Essential Knowledge and Skills, 112.22 Science, Grade 6	8 (B) explain and illustrate the interactions between matter and energy in the water cycle and in the decay of biomass such as in a compost bin. 14 (B) identify relationships between groundwater and surface water in a watershed. 14 (C) describe components of the atmosphere, including oxygen, nitrogen, and water vapor, and identify the role of atmospheric movement in weather change.
		Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 6, Standard 5: Structures of the Earth and the Solar System	2. Water, which covers the majority of the Earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the water cycle.
		Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 7, Standard 5: Structures of the Earth System	1. Global patterns of atmospheric movement influence local weather such as oceans' effect on climate. 2. Clouds, formed by the condensation of water vapor, affect local weather and climate.
		Texas Essential Knowledge and Skills, 112.24 Science, Grade 8	10 (B) describe interactions among solar, weather, and ocean systems.
Seasons	Earth Science Game 1: 'Tis the Season	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Earth in the Solar System	<ul style="list-style-type: none"> The sun is the major source of energy for phenomena on the earth's surface, such as growth of plants, winds, ocean currents, and the water cycle. Seasons result from variations in the amount of the sun's energy hitting the surface, due to the tilt of the earth's rotation on its axis and the length of the day.
		McRel Content Knowledge Standards and Benchmarks, Science, Earth and Space Sciences, Standard 1, Level III (Grade 6-8)	Benchmark 5 Knows how the tilt of the Earth's axis and the Earth's revolution around the Sun affect seasons and weather patterns (i.e., heat falls more intensely on one part or another of the Earth's surface during its revolution around the Sun).
		Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Earth and Space	<ul style="list-style-type: none"> understands that the tilt of the Earth on its axis as it rotates causes seasonal changes.
		Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	13 (A) identify and illustrate how the tilt of the Earth on its axis as it rotates and revolves around the Sun causes changes in seasons and the length of a day.
		Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 7, Standard 6: Earth and the Solar System	2. Seasons result from variations in the amount of the sun's energy hitting the surface, due to the tilt of the earth's rotation on its axis and the length of the day.
		Texas Essential Knowledge and Skills, 112.24 Science, Grade 8	10 (B) describe interactions among solar, weather, and ocean systems.

Natural hazards	Earth and Space Game 1: Final Jeopardy!	NSES Science Content Standards Grades 5-8; Content Standard F: Science in Personal and Social Perspectives; Natural Hazards	<ul style="list-style-type: none"> • Internal and external processes of the earth system cause natural hazards, events that change or destroy human and wildlife habitats, damage property, and harm or kill humans. Natural hazards include earthquakes, landslides, wildfires, volcanic eruptions, floods, storms, and even possible impacts of asteroids. • Human activities also can induce hazards through resource acquisition, urban growth, land-use decisions, and waste disposal. Such activities can accelerate many natural changes. 	
	Earth and Space Game 2: Quake Quiz			
	Earth and Space Game 2: Volcano or Glacier?	NSES Science Content Standards Grades 5-8; Content Standard F: Science in Personal and Social Perspectives; Risks and Benefits	<ul style="list-style-type: none"> • Students should understand the risks associated with natural hazards (fires, floods, tornadoes, hurricanes, earthquakes, and volcanic eruptions), with chemical hazards (pollutants in air, water, soil, and food), with biological hazards (pollen, viruses, bacterial, and parasites), social hazards (occupational safety and transportation), and with personal hazards (smoking, dieting, and drinking). 	
		Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	14 (A) describe and predict the impact of different catastrophic events on the Earth.	
Environment	Earth and Space Game 1: Earth in Trouble	NSES Science Content Standards Grades 5-8; Content Standard F: Science in Personal and Social Perspectives; Populations, Resources and Environments	<ul style="list-style-type: none"> • Causes of environmental degradation and resource depletion vary from region to region and from country to country. 	
		Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Processes that Shape the Earth	<ul style="list-style-type: none"> • knows positive and negative consequences of human action on the Earth's systems (for example, farming, transportation, mining, manufacturing). • understands the processes that prevent or cause erosion. 	
		Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, How Living Things Interact with Their Environment	<ul style="list-style-type: none"> • understands that changes in the environment may influence the size, number, or diversity of organisms in an area. • understands that humans are a part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in the ecosystem. 	
		Texas Essential Knowledge and Skills, 112.24 Science, Grade 8	14 (C) describe how human activities have modified soil, water, and air quality.	
		Florida Dept. of Education Sunshine State Standards, Science, Eighth Grade, How Living Things Interact with Their Environment	<ul style="list-style-type: none"> • extends and refines knowledge of ways that human activities may deliberately or inadvertently alter the equilibrium in the ecosystem. 	
Solar system and space	Earth Science Game 1: Test of Time	NSES Science Content Standards Grades 5-8; Content Standard D: Earth and Space Science; Earth in the Solar System	<ul style="list-style-type: none"> • The earth is the third planet from the sun in a system that includes the moon, the sun, eight other planets and their moons, and smaller objects, such as asteroids and comets. The sun, an average star, is the central and largest body in the solar system. • Most objects in the solar system are in regular and predictable motion. Those motions explain such phenomena as the day, the year, phases of the moon, and eclipses. • Gravity is the force that keeps planets in orbit around the sun and governs the rest of the motion in the solar system. Gravity alone holds us to the earth's surface and explains the phenomena of the tides. 	
	Earth Science Game 1: The Largest			
	Earth Science Game 2: Cm, M, or Km?			

		McRel Content Knowledge Standards and Benchmarks, Science, Earth and Space Sciences, Standard 3, Level III (Grade 6-8)	Benchmark 2 Knows how the regular and predictable motions of the Earth and Moon explain phenomena on Earth (e.g., the day, the year, phases of the Moon, eclipses, tides, shadows).
		Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, Earth and Space	<ul style="list-style-type: none"> • knows the relationship between tides on Earth and the positions of the Moon, the Sun, and Earth. • knows the relative sizes of the planets, Sun, Solar System, galaxy, and universe. • understands the positions of the Earth, Moon, and Sun during a solar eclipse and a lunar eclipse. • understands that our Sun is one of many stars in our galaxy.
		Oklahoma State Dept. of Education Priority Academic Student Skills, Science, Grade 7, Standard 6: Earth and the Solar System	1. Most objects in the solar system are in regular and predictable motion. Those motions explain such phenomena as the day, the year, phases of the moon, and eclipses.
History of science and technology	Physical Science Game 3: Physical Folks	NSES Science Content Standards Grades 5-8; Content Standard F: Science in Personal and Social Perspectives; Science and Technology in Society	<ul style="list-style-type: none"> • Science and technology have advanced through contributions of many different people, in different cultures, at different times in history. Science and technology have contributed enormously to economic growth and productivity among societies and groups within societies.
		NSES Science Content Standards Grades 5-8; Content Standard E: Science and Technology; Understandings about Science and Technology	<ul style="list-style-type: none"> • Many different people in different cultures have made and continue to make contributions to science and technology.
		NSES Science Content Standards Grades 5-8; Content Standard G: History and Nature of Science; History of Science	<ul style="list-style-type: none"> • Many individuals have contributed to the traditions of science. Studying some of these individuals provides further understanding of scientific inquiry, science as a human endeavor, the nature of science, and the relationships between science and society. • Tracing the history of science can show how difficult it was for scientific innovators to break through the accepted ideas of their time to reach the conclusions that we currently take for granted.
		McRel Content Knowledge Standards and Benchmarks, Science, Nature of Science, Standard 13, Level III (Grade 6-8)	Benchmark 5 Knows that throughout history, many scientific innovators have had difficulty breaking through accepted ideas of their time to reach conclusions that are now considered to be common knowledge.
		Texas Essential Knowledge and Skills, 112.22/3/4 Science, Grade 6, 7, 8	3 (D) evaluate the impact of research on scientific thought, society, and the environment.

	Texas Essential Knowledge and Skills, 112.22 Science, Grade 6	3 (E) connect Grade 6 science concepts with the history of science and contributions of scientists.
	Florida Dept. of Education Sunshine State Standards, Science, Sixth Grade, The Nature of Science	<ul style="list-style-type: none"> • knows selected scientists and their accomplishments. • knows that scientific contributions may result in diverse technological products.
	Texas Essential Knowledge and Skills, 112.23 Science, Grade 7	3 (F) connect Grade 7 science concepts with the history of science and contributions of scientists.
	Texas Essential Knowledge and Skills, 112.24 Science, Grade 8	3 (E) connect Grade 8 science concepts with the history of science and contributions of scientists.
	Florida Dept. of Education Sunshine State Standards, Science, Eighth Grade, The Nature of Science	<ul style="list-style-type: none"> • extends and refines knowledge of selected scientists and their accomplishments and recognizes their varied backgrounds, talents, interests, and goals.