

Wyoming Department of Education Required Virtual Education Course Syllabus

Natrona County School District # 1

Program Name	Natrona Virtual Learning	Content Area	SC
Course ID	NVA070301	Grade Level	3
Course Name	Science 3	of Credits	
SCED Code	70301	Curriculum Type	K1 Inc

COURSE DESCRIPTION

Students learn to observe and analyze through hands-on experiments, and gain further insight into how scientists understand our world. They observe and chart the phases of the moon, determine the properties of insulators and conductors, and make a three-dimensional model of bone.

Students will explore topics such as:

Weather—air pressure; precipitation; clouds; humidity; fronts; forecasting

Vertebrates—features of fish, amphibians, reptiles, birds, and mammals

Ecosystems—climate zones; tundra, forests, desert, grasslands, freshwater, and marine ecosystems

Matter—phase changes; volume; mass; atoms; physical and chemical changes

Human Body—the musculoskeletal system; the skin

Energy—forms of energy; transfer of energy; conductors and insulators; renewable and nonrenewable energy resources

Light—light as energy; the spectrum; how the eye works

Astronomy—phases of the moon; eclipses; the solar system; stars and constellations; the Milky Way

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
SC4.1.1	Characteristics of Organisms: Students describe observable characteristics of living things, including structures that serve specific functions and everyday behaviors.
SC4.1.2.	Life Cycles of Organisms: Students sequence life cycles of living things, and recognize that plants and animals resemble their parents.

SC4.1.3.	Organisms and Their Environments: Students show connections between living things, their basic needs, and the environments.
SC4.1.4.	Properties of Earth Materials: Students investigate water, air, rocks, and soils to compare basic properties of earth materials.
SC4.1.5.	Objects in the Sky: Students describe observable objects in the sky and their patterns of movement.
SC4.1.6.	Changes in Earth and Sky: Students describe observable changes in earth and sky, including rapid and gradual changes to the earth's surface, and daily and seasonal changes in the weather.
SC4.1.7.	Properties of Objects: Students classify objects by properties that can be observed, measured, and recorded, including color, shape, size, weight, volume, texture, and temperature.
SC4.1.8.	Changes in States of Matter: Students demonstrate that the processes of heating and cooling can change matter from one state to another.
SC4.1.9.	Physical Phenomena: Students investigate physical phenomena commonly encountered in daily life, including light, heat, electricity, sound, and magnetism.
SC4.1.10	Position and Motion of Objects: Students demonstrate that pushing and pulling can change the position and motion of objects.
SC4.2.1.	Students research answers to science questions and present findings through appropriate means.
SC4.2.2.	Students use the inquiry process to conduct simple scientific investigations. Collect and organize data. Use data to construct simple graphs, charts, diagrams, and/or models. Draw conclusions and accurately communicate results, making connections to daily life. Pose or identify questions and make predictions. Conduct investigations to answer questions and check predictions.
SC4.2.3.	Students identify and use appropriate scientific equipment.
SC4.2.4.	Students properly use safety equipment and recognize hazards and safety symbols while practicing standard safety procedures.
SC4.3.1.	Students recognize the nature and history of science. Discuss how scientific ideas change over time. Describe contributions of scientists.
SC4.3.2.	Students recognize how scientific information is used to make decisions.

	<p>Identify and describe local science issues, such as environmental hazards or resource management.</p> <p>Suggest feasible solutions and personal action plans to address an identified issue.</p>
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UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Weather 1 What's Weather?		<p>Identify the kinds of precipitation (rain, snow, sleet, and hail) and explain how they form.</p> <p>Use a thermometer to measure temperature.</p> <p>Determine wind speed by using the Beaufort Wind Scale.</p> <p>Name two ways to determine wind direction.</p> <p>Identify the four basic types of clouds: cumulus, cirrus, cumulonimbus, and stratus.</p> <p>Explore concepts to be addressed during the year in Science 3.</p>
Weather 2 Weather Fronts		<p>Explain that air masses meet at fronts, and that most changes in the weather occur along fronts.</p> <p>Explain how air moves in cold and warm fronts. Define humidity as the amount of water vapor in the air.</p>
Weather 3 Air Pressure	SC4.1.4	<p>State that wind is air moving from areas of high pressure to areas of low pressure.</p> <p>State that high air pressure usually brings dry, sunny weather.</p> <p>State that low air pressure usually brings some type of precipitation.</p> <p>Explain that barometer is used to measure air pressure.</p>
Weather 4 Weather Forecasting		<p>Recognize that weather forecasters rely on data collected from various sources, such as weather stations, weather balloons, weather satellites, and weather radar.</p> <p>Interpret weather maps and their symbols, including those for cloud cover, precipitation, temperature, pressure, and fronts.</p>
Weather 5 Weather Unit Review and Assessment		<p>Identify the kinds of precipitation (rain, snow, sleet, and hail) and explain how they form.</p> <p>Define humidity as the amount of water vapor in the air.</p> <p>Use appropriate tools to measure and record weather conditions, including air temperature, wind direction, wind speed, humidity, and pressure.</p> <p>Explain that air masses meet at fronts and that most changes in the weather occur along fronts.</p> <p>Explain how air moves in cold and warm fronts and identify the common weather patterns associated with each.</p>

		<p>Identify common weather patterns associated with changes in air pressure. Recognize that weather forecasters rely on data collected from various sources, such as weather stations, weather balloons, weather satellites, and weather radar.</p> <p>Interpret weather maps and their symbols, including those for precipitation, pressure, and fronts.</p>
<p>Classification of Vertebrates 1 Introduction to Vertebrates: Fish</p>		<p>Explain the difference between vertebrate and an invertebrate. Distinguish between vertebrates that maintain a constant internal body temperature and those that do not.</p> <p>Describe some characteristics of jawless fish, cartilaginous fish, and bony fish.</p> <p>Identify the key parts of most fish: gills, scales, and fins.</p>
<p>Classification of Vertebrates 2 Amphibians and Reptiles</p>		<p>Describe some characteristics of amphibians.</p> <p>Describe some characteristics of reptiles.</p> <p>Describe the metamorphosis of a frog from tadpole to adult.</p>
<p>Classification of Vertebrates 3 Birds</p>		<p>Identify structures in birds' bodies that help birds fly.</p> <p>Describe the functions of the crop and the gizzard.</p> <p>Name two characteristics of birds that make birds different from reptiles.</p>
<p>Classification of Vertebrates 4 Mammals</p>		<p>Identify the characteristics all mammals have in common (for example, hair, the ability to produce milk from mammary glands, constant internal body temperature, and different types of teeth).</p> <p>Identify the three ways mammals have their young: born live, born into a pouch, and hatched from an egg.</p> <p>Identify and describe the functions of incisors, molars, and canines.</p>
<p>Classification of Vertebrates 5 Classification of Vertebrates: Unit Review and Assessment</p>		<p>Distinguish between vertebrates and invertebrates.</p> <p>Recognize that some animals have a constant internal body temperature and others have an internal temperature that fluctuates depending on the temperature of the surroundings.</p> <p>Identify different groups of vertebrates (fish, amphibians, reptiles, birds, and mammals) according to their common characteristics.</p>
<p>Ecosystems 1 What's an Ecosystem?</p>	SC4.1.3	<p>Explain that an ecosystem includes all living and nonliving things that interact in a particular region.</p> <p>Define climate as the usual weather pattern in a certain area over many years.</p> <p>Identify the three main climate zones as tropical, temperate, and</p>

		<p>polar.</p> <p>Recognize that scientists identify different ecosystems by studying their patterns of climate, vegetation, and animal life.</p>
<p>Ecosystems 2 Tundra</p>	SC4.1.3	<p>Identify and describe key characteristics of the tundra (for example, cold, dry, and harsh climate). Describe two adaptations of plants that live in the tundra (for example, the need to grow low to the ground to escape fierce winds). Describe two adaptations of animals that live in the tundra (for example, the ability to hibernate through the winter, and hoof shapes that keep the animal from sinking in the snow).</p>
<p>Ecosystems 3 Boreal Forests</p>	SC4.1.3	<p>Identify and describe key characteristics of the boreal forest (for example, long, cold, snowy winters and short, warm summers). Describe two adaptations of plants that live in the boreal forest (for example, conifer needles are covered with a waxy coating that keeps them from drying out).</p>
<p>Ecosystems 4 Temperate Deciduous Forests</p>	SC4.1.3	<p>Identify and describe the characteristics of the temperate deciduous forest (for example, a mild and moist climate with four distinct seasons). Describe two adaptations of plants that live in the temperate deciduous forest (for example, deciduous trees lose their leaves in autumn). Identify two plants found in the temperate deciduous forest (for example, ferns, dogwood, and oak trees).</p>
<p>Ecosystems 5 Tropical Rain Forests</p>	SC4.1.3	<p>Identify and describe key characteristics of the tropical rain forest (for example, a warm, wet climate with a constant air temperature and rain every day). Describe two adaptations of plants that live in the tropical rain forest (for example, plants that live on the forest floor have large leaves to catch plenty of sunlight).</p>
<p>Ecosystems 6 Deserts</p>	SC4.1.3	<p>Identify and describe key characteristics of the desert (for example, extreme temperatures, rainfall of less than 2 cm per year, and the presence of sand dunes). Describe two adaptations that help plants survive in the desert (for example, shallow roots that take in water quickly, and a waxy outer coating that helps some plants retain water). Describe two adaptations of animals in the desert (for example, being active at night to avoid the daytime heat, and long ears that help keep some animals cool). Identify two animals that live in the desert (for example, snake, desert tortoise, and cactus wren). Identify two plants that live in the desert (for example, barrel cactus, owl clover, and snapdragon).</p>

<p>Ecosystems 7 Grasslands</p>	<p>SC4.1.3</p>	<p>Identify and describe key characteristics of the prairie (for example, hot summers and cold winters, average rainfall of 25-50 cm per year, and frequent wildfires). Describe an adaptation that helps plants survive in the prairie (for example, strong roots that spread wide and reach deep into the soil to anchor the plant against winds). Describe an adaptation that helps animals survive in the prairie (for example, birds build nests on the ground because there are few trees, and small animals hibernate through the cold winter months). Identify two animals that live in the prairie (for example, crickets, coyotes, and blackbirds). Identify two plants that live in the prairie (for example, wild roses, cattails, and wild clover).</p>
<p>Ecosystems 8 Freshwater Ecosystems</p>	<p>SC4.1.3</p>	<p>Describe two main characteristics of a pond (for example, fresh water, calm water, shallow enough for sunlight to reach the bottom). Describe some adaptations that help plants survive in a pond (for example, the smooth, waxy leaves of the pond lily, which float on top of the water). Describe some adaptations of animals in a pond (for example, the long legs and lightweight body of the water strider, which allow the insect to walk on the surface of the water). State that Ann Morgan was a scientist who studied pond life. Identify two animals you might find in a pond (for example, frogs and dragonflies). Identify two plants you might find in the pond (for example, water lilies and cattails).</p>
<p>Ecosystems 9 Marine Ecosystems</p>	<p>SC4.1.3</p>	<p>Identify and describe key characteristics of the coral reef (for example, warm, tropical water; wave action; plenty of sunlight). Identify a plant that lives in the coral reef (for example, phytoplankton, zooxanthelle). Identify a type of animal that lives in the coral reef (for example, sponges, corals, sharks, parrotfish). Describe an adaptation of a plant that lives in the coral reef (for example, zooxanthelle lives with corals to get the carbon dioxide it needs to grow). Describe an adaptation of an animal that lives in the coral reef (for example, the wavy arms of corals are designed to catch food).</p>
<p>Ecosystems 10 Ecosystems Unit Review and Assessment</p>	<p>SC4.1.3</p>	<p>Identify the three main climate zones as tropical, temperate, and polar. Explain that an ecosystem includes all living and nonliving things interacting in a particular region. Define climate as the usual weather in a certain area over many years. Recognize that scientists use patterns of climate, vegetation, and animal life to identify different ecosystems. Describe different ecosystems (tundra, boreal forest, deciduous forest, tropical rain forest, grasslands, desert, freshwater, and marine). Recognize that living things have both physical and behavioral adaptations that enable</p>

		them to survive in a particular ecosystem. Demonstrate mastery of the knowledge and skills taught in this unit.
Ecosystems of the Past 1 Animals of the Ancient Reefs		Recognize that scientists think that many kinds of animals that once lived in coral reefs have completely disappeared. , Recognize that scientists think that some animals alive today in reefs resemble animals of the past.
Ecosystems of the Past 2 Plants and Animals of the Ancient Forests		Explain that when the environment changes, some plants and animals survive and reproduce, while others either die off or move to new locations. Classify dinosaurs as either herbivores (plant eaters) or carnivores (meat eaters).
Ecosystems of the Past 3 Animals of the Ancient Tundra		Explain that when the environment changes, some plants and animals survive and reproduce, while others either die off or move to new locations. Recognize that scientists think that many kinds of animals that once lived on Earth have completely disappeared. , Recognize that scientists think that some animals alive today resemble animals of the distant past. , Describe the main characteristics of the woolly mammoth (it is related to the elephant; it ate only plants; it lived in cold, dry grasslands and open tundra).
Ecosystems of the Past 4 Methods of Studying Ecosystems of the Past		Recognize different types of evidence scientists use to study ecosystems of the past, such as fossils, tree rings, and ice cores. Use tree-ring patterns to describe various climate characteristics from the past.
Ecosystems of the Past 5 Ecosystems of the Past Unit Review		Explain that when the environment changes, some plants and animals survive and reproduce, while others either die off or move to new locations. Recognize that scientists think that many kinds of organisms that once lived on Earth have completely disappeared. , Recognize that scientists think that some animals and plants alive today resemble those of the past. Compare the climates of modern ecosystems with similar ecosystems from Earth's geologic past, including reef, tundra, and forest. Recognize some methods scientists use to study past ecosystems, such as those of examining fossils, tree rings, and ice. Demonstrate mastery of the knowledge and skills taught in this unit.
Properties of Matter 1 States of Matter		Describe properties of solids, liquids, and gases (for example, solids have a definite shape and a definite volume; liquids have a definite volume but n definite shape; gases have neither a definite shape nor a definite volume). Recognize that all matter is made up of particles called atoms, which are much too small to

		see with the naked eye and are constantly in motion. Compare the motion of atoms in solids, liquids, and gases (atoms in solids vibrate around a fixed position, atoms in liquids do not stay in a fixed position but remain close to each other, and atoms in gases move freely, bouncing off other atoms but not staying close together most of the time).
Properties of Matter 2 Changes in the States of Matter	SC4.1.8	Describe how matter changes states by freezing, melting, or boiling when heated. State that the boiling point is the temperature at which liquid changes to gas as it evaporates and gas changes to liquid as it condenses. State that the melting point and the freezing point is the same temperature at which a solid changes to a liquid and a liquid changes to a solid.
Properties of Matter 3 Length and Volume		Use appropriate tools to measure in metric units the length, volume, mass, and weight of different objects. Define volume as the amount of space occupied by matter, or the amount of space inside a container. Convert measurements from centimeters to millimeters. Convert measurements from meters to centimeters. Estimate and measure the length of various objects. Estimate and measure the volume of various objects.
Properties of Matter 4 Mass and Weight		Recognize that mass is a measure of the resistance of an object to acceleration by force. Recognize that the mass of an object stays the same, but the object's weight changes depending on where in the universe the object is being weighed. Explain that mass is the amount of matter in an object, whereas weight is the force exerted by gravity on an object. , Define kilogram as a unit of mass, and milligram and gram as related units.
Properties of Matter 5 Properties of Matter Unit Review and Assessment		Identify three states of matter: solid, liquid, and gas. Describe the properties of solids, liquids, and gases (solids have a definite shape and a definite volume; liquids have a definite volume but n definite shape; gases have neither a definite shape nor a definite volume). Recognize that all matter is made of particles called atoms, much too small to see with the naked eye and constantly in motion. Describe the motion of atoms in solids, liquids, and gases (atoms in solids vibrate but do not move around; atoms in liquids move around but stay close to other atoms; and atoms in gases move freely). Describe how matter changes state when heated (solid to liquid to gas) or cooled (gas to liquid to solid). , Use appropriate tools to measure the length, volume, mass, and weight of different objects in metric units. , Convert measurements from one metric unit to another one of the same dimensions, such as mm to cm. Recognize that volume is the amount of space occupied by matter, or the amount of

		<p>space inside a container. Recognize that mass is a measure of the resistance of an object to acceleration by a force. Recognize that the mass of an object stays the same, but the object's weight varies depending on where the object is being weighed.</p> <p>Demonstrate mastery of the knowledge and skills taught in this unit.</p>
<p>Properties of Matter 6 Semester Review and Assessment</p>		<p>Demonstrate mastery of the semester's content.</p>
<p>Physical and Chemical Changes of Matter 1 Physical Changes</p>		<p>Describe a physical change of matter as a change in size and shape (through cutting, breaking, or grinding), or state (through melting, boiling, freezing, evaporating, or condensing). ,</p> <p>Recognize that a physical change does not change the molecules that make up matter.</p>
<p>Physical and Chemical Changes of Matter 2 Chemical Changes</p>		<p>Recognize that a chemical change occurs when atoms within molecules rearrange themselves, changing one substance into another. Identify clues that suggest chemical change (for example, color change, change in temperature, or the production of light). Classify changes of matter as chemical or physical.</p>
<p>Physical and Chemical Changes of Matter 3 Atoms</p>		<p>State that all matter is made up of particles too small to see called atoms which combine to form many kinds of molecules. Name the three parts of an atom (protons, neutrons, and electrons). Explain that an element is substance made up of just one kind of atom, all with the same number of protons (and electrons). Explain that the atoms of one element have different properties than the atoms of another element. Explain that several atoms, often many, bind together to form molecules. A sample of a single substance contains many identical molecules.</p>
<p>Physical and Chemical Changes of Matter 4 Mendeleev and the Periodic Table</p>		<p>Recognize that elements are represented by chemical symbols. Locate elements on the periodic table. Identify Dimitry Mendeleev as the scientist who first successfully arranged all the known chemical elements into a table according to their common properties. Identify the chemical symbols of the four common elements that make up living things: carbon, oxygen, nitrogen, and hydrogen.</p>
<p>Physical and Chemical Changes of Matter 5 Physical and Chemical Changes</p>		<p>Demonstrate mastery of the important knowledge and skills taught in this unit.</p>

of Matter Unit Review		
Human Body 1 Introduction to the Musculoskeletal System		Recognize that cells form tissues, tissues form organs, organs form body systems, and systems work together to make up the human body. Explain that bones, cartilage, tendons, and ligaments make up the skeletal system. State three main functions of the skeletal system: support, protection of internal organs, and movement. , Identify the functions of joints, ligaments, tendons, and cartilage. Compare the movement of various joints.
Human Body 2 Bone Identification		Classify bones by function: support, protection, or movement. , Classify bones by shape: long, short, flat, and irregular. , Identify five of the many bones of the skeletal system. State that bone cells and tissue are formed as cartilage is replaced. Demonstrate mastery of important knowledge and skills taught in previous lessons.
Human Body 3 Bone Structure		Recognize that bones are made u of various types of cells, blood vessels, nerves, and minerals like calcium. Explain how the structure of bones makes bones both strong and light. Identify two types of bone tissue: compact and spongy.
Human Body 4 Joints in the Human Body		Describe the following types of joints: hinge, ball-and-socket, gliding, and pivot. Locate an example of each type of joint (hinge, ball-and-socket, gliding, and pivot) in the body. Evaluate the function of joints by restricting a joint, such as the thumb.
Human Body 5 Broken Bones		Identify two types of bone fractures, such as open and closed. , Identify tools used to detect and treat a broken bone, such as X-rays, casts, and splints. , Describe how a broken bone heals.
Human Body 6 Types of Muscles		Recognize that voluntary muscles are muscles you can move when you want to, while involuntary muscles are muscles that move automatically. Identify the three types of muscles (skeletal, smooth, and cardiac). Explain the function of the skeletal, smooth, and cardiac muscles.
Human Body 7 Muscle Action		State that your muscles can move your body only by contracting. State that most skeletal muscles work in pairs. State that when a muscle contracts it gets shorter. Explain that flexor muscles contract to bend joints as extensor muscles relax, and extensor muscles contract to straighten joints as flexors relax.
Human Body 8 Layers of the Skin		Identify the skin as the body's largest organ. Explain the main functions of the skin (protecting against infection, helping keep the body's internal temperature constant, and sensing the

		environment). Identify the two main layers of the skin as the epidermis and dermis and explain their main characteristics. Recognize that hair and nails are part of the skin system.
Human Body 9 More on Skin and Skin Protection		Identify melanin as the substance in skin that determines color. Label structures of the skin: sweat glands, hair follicles, oil glands, and sense receptors. List ways to care for and protect skin.
Human Body 10 Human Body: Unit Review and Assessment		Demonstrate mastery of the knowledge and skills taught in this unit.
Energy 1 Forms of Energy	SC4.1.9	Recognize that energy is the ability to cause change in structure or motion. Recognize that energy is neither created nor destroyed. Identify the Earth's major source of energy as the sun. Recognize that energy from the sun makes life on Earth possible. Identify different forms of energy, such as light energy, heat energy, and mechanical energy. Recognize that energy can be stored for later use in many forms, such as in food, fuel, batteries, and stretched rubber bands.
Energy 2 Energy Conversions	SC4.1.9	Recognize that energy can transfer from one place to another or convert from one form into another. Identify when a transfer of energy from one place to another or conversion of energy from one form to another has taken place. Recognize that both machines and living things convert energy from one form into another, such as chemical energy into heat energy, light energy, or mechanical energy.
Energy 3 Conductors and Insulators	SC4.1.9	Compare the conduction of heat energy through different types of solids and determine which types are most effective in conducting heat energy. , Explain how heat energy is conducted through a solid. , Explain the difference between a thermal conductor and a thermal insulator.
Energy 4 Energy Resources		Describe the difference between a renewable and a non-renewable resource. Identify renewable resources such as wood, sun, wind, or water, and non-renewable resources such as coal, natural gas, and oil. , Describe the use of a renewable resource.
Energy 5 Energy: Unit Review and Assessment		Demonstrate mastery of the skills taught in this unit.
Light 1 Traveling Light	SC4.1.9	Explain that when light strikes an object it can reflect, pass through, or be absorbed. Classify objects as transparent, opaque,

		or translucent.
Light 2 Colors of Light	SC4.1.9	State that white light contains all the colors of the rainbow. Define refraction as the bending of light as it travels from one type of matter to another. Explain that objects reflect the color of light that we see and absorb the rest. , State the three primary colors of light: red, green, blue.
Light 3 Light Energy	SC4.1.9	Explain that dark-colored surface absorbs more visible light than a light-colored surface. Explain that a light-colored surface reflects more visible light than a dark-colored surface. Recognize that when light energy is absorbed it is often changed to heat energy.
Light 4 Vision		Recognize that the sense of sight relies on light energy. Identify the parts of the eye and their functions (pupil, iris, cornea, lens, retina, optic nerve, rods and cones).
Light 5 Light: Unit Review and Assessment		Demonstrate mastery of the skills taught in this unit.
1 Sun, Earth, and Moon 1 Earth and Sun		Describe the shape of the earth as being very close to a sphere. State that the Earth completes one rotation on its axis every 24 hours. State that the Earth completes one revolution, called an orbit, around the sun each year. Describe the difference between the Earth's movements as it rotates on its axis and revolves around the sun. Identify the shape of the Earth's orbit around the sun as being nearly circular.
1 Sun, Earth, and Moon 2 The Seasons		State that the tilt of the Earth's axis causes the seasons. Explain that the Earth's tilt causes the seasons, partly because the sun shines more directly on the part of the Earth where it's summer and less directly where it's winter. Explain that the Earth's tilt causes the seasons, partly because the amount of time the sun shines each day is greater in the summer and less in the winter. State that the Earth receives sunlight more directly at the equator than at the poles.
1 Sun, Earth, and Moon 3 Phases of the Moon	SC4.1.5	State that the moon makes one revolution around Earth, and one rotation on its own axis, in approximately one month. State the order of the moon's phases from one new moon to the next (new, crescent, first quarter, gibbous, full, gibbous, third quarter, crescent, new). Identify the moon's phases: new, crescent, quarter, gibbous, and full. State that the moon does not produce its own light, but that the moon is visible from Earth because sunlight reflects off its surface. Recognize that the moon's phases

		are the result of our seeing different amounts of the moon's lighted side from our position on the Earth. Demonstrate mastery of the skills taught in this lesson.
1 Sun, Earth, and Moon 4 Eclipses		Describe the positions of the Earth, moon, and sun during a lunar eclipse (the Earth, between the sun and the moon, blocks the sunlight and casts a shadow on the moon). Describe the positions of the Earth, moon, and sun during a solar eclipse (the moon, between the sun and the Earth, blocks the sunlight and casts a shadow on the Earth). Define eclipse as the darkening of a planet, moon, or other object in space by the shadow of another object in space.
1 Sun, Earth, and Moon 5 Lunar Landscape		Describe how a crater is formed on the moon. Identify and describe some characteristics of the moon's surface: craters, maria (lowland plains), rilles (valleys), highlands, and soil. State that the moon's surface has no air, wind, liquid water, or life.
1 Sun, Earth, and Moon 6 Origin of the Moon		Identify the moon as a natural satellite of Earth, held in orbit by the force of gravity. Recognize how the the large-impact hypothesis explains the formation of the moon.
1 Sun, Earth, and Moon 7 Sun, Earth and Moon: Unit Review and Assessment		Demonstrate mastery of the skills taught in this unit.
1 The Solar System and Beyond 1 The Solar System: Planets and Orbits		State that the force of gravity keeps the planets in orbit around the sun. Name the planets of the solar system in order, starting at the sun. Name the largest planet and the smallest planet in our solar system.
1 The Solar System and Beyond 2 The Sun		Identify the major layers of the sun: core, photosphere, and corona. State that the sun is the major source of energy on Earth.
1 The Solar System and Beyond 3 The Inner Planets		Name the inner planets of the solar system: Mercury, Venus, Earth, and Mars. , Recognize the common characteristics of the inner planets. Identify each of the four inner planets by their characteristics.
1 The Solar System and Beyond 4 The Outer Planets		Identify the characteristics of the outer planets. Name the outer planets: Jupiter, Saturn, Uranus, and Neptune. Identify the common characteristics of the gas giants (Jupiter, Saturn, Uranus, and Neptune).

1 The Solar System and Beyond 5 Stars of the Night Sky		Recognize that stars are classified according to their brightness. Recognize that the brightness of a star in the sky depends on the star's light-energy output as well as its distance from the Earth.
1 The Solar System and Beyond 6 Constellations: Star Patterns		Recognize some bright stars (Polaris, Sirius, Betelgeuse, and Rigel). Recognize some well-known constellations (Little Dipper, Big Dipper, and Orion). Recognize that the Earth's rotation makes the constellations appear to revolve in the sky, or move across it.
1 The Solar System and Beyond 7 Galaxies		State that our solar system is part of the Milky Way galaxy. State that telescopes magnify the appearance of some distant objects in the sky and collect enough light from very dim objects to make them visible.
1 The Solar System and Beyond 8 The Solar System and Beyond: Unit Review and Assessment		Demonstrate mastery of the skills taught in this unit.
1 The Solar System and Beyond 9 Semester Unit Review and Assessment		Demonstrate mastery of the skills and concepts taught in this semester.