

Wyoming Department of Education Required Virtual Education Course Syllabus

Natrona County School District # 1

Program Name	Natrona Virtual Learning	Content Area	SC
Course ID	NVA070501	Grade Level	5
Course Name	Science 5	of Credits	
SCED Code	70501	Curriculum Type	K1 Inc

COURSE DESCRIPTION

Students perform experiments, develop scientific reasoning, and recognize science in the world around them. They build a model of a watershed, test how cell membranes function, track a hurricane, and analyze the effects gravity. Students will explore topics such as:

Water Resources—water pollution; conservation; aquifers; watersheds; wetlands

The World’s Oceans—properties of ocean water; currents, waves, an tides; the ocean floor; marine organisms

Earth’s Atmosphere—layers; weather patterns, maps, and forecasts; fronts; El Niño; and the greenhouse effect

Forces of Motion—types of pushes or pulls; position and speed; inertia; energy as a measure of work; gravity an motion

Chemistry—structure of atoms; elements an compounds; the Periodic Table; chemical reactions; acids an bases

Cells an Cell Processes—structure; membrane function; respiration and photosynthesis; growth cycles; genes an DNA

Taxonomy of Plants an Animals—levels of classification; plants, animals, monerans, viruses, protists, an fungi

Animal Physiology—circulatory, respiratory, digestive, excretory, and immune systems

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK_ (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
SC8.1.1.	Levels of Organization in Living Systems: Students model the cell as the basic unit of a living system. They realize that all functions that sustain life act within a single cell and cells differentiate into specialized cells, tissues, organs, and organ systems.

SC8.1.2.	Reproduction and Heredity: Students describe reproduction as a characteristic of all living systems, which is essential to the continuation of species, and identify and interpret traits, patterns of inheritance, and the interaction between genetics and environment.
SC8.1.3.	Evolution as Theory: Students explain evolution as theory and apply the theory to the diversity of species, which results from natural selection and the acquisition of unique characteristics through biological adaptation.
SC8.1.4.	Diversity of Organisms: Students investigate the interconnectedness of organisms, identifying similarity and diversity of organisms through a classification system of hierarchical relationships and structural homologies.
SC8.1.5.	Behavior and Adaptation: Students recognize behavior as a response of an organism to an internal or environmental stimulus and connect the characteristics and behaviors of an organism to biological adaptation.
SC8.1.6.	Interrelationships of Populations and Ecosystems: Students illustrate populations of organisms and their interconnection within an ecosystem, identifying relationships among producers, consumers, and decomposers.
SC8.1.7.	The Earth in the Solar System: Students describe Earth as the third planet in the Solar System and understand the effects of the sun as major source of energy, gravitational forces, and motions of objects in the Solar System.
SC8.1.8.	The Structure of the Earth System: Students examine the structure of the Earth, identifying layers of the Earth, considering plate movement and its effect, and recognizing landforms resulting from constructive and destructive forces.
SC8.1.9.	The Earth's History: Students systematize the Earth's history in terms of geologic evidence, comparing past and present Earth processes and identifying catastrophic events and fossil evidence.
SC8.1.10.	The Structure and Properties of Matter: Students identify characteristic properties of matter such as density, solubility, and boiling point and understand that elements are the basic components of matter.
SC8.1.11.	Physical and Chemical Changes in Matter: Students evaluate chemical and physical changes, recognizing that chemical change forms compounds with different properties and that physical change alters the appearance but not the composition of substance.
SC8.1.12.	Forms and Uses of Energy: Students investigate energy as property of substances in variety of forms with range of uses.
SC8.1.13.	The Conservation of Matter and Energy: Students identify supporting evidence to explain conservation of matter and energy, indicating that matter or energy cannot be created or destroyed but is transferred from one object to another.

SC8.1.14.	Effects of Motions and Forces: Students describe motion of an object by position, direction, and speed, and identify the effects of force and inertia on an object.
SC8.2.1.	Students research scientific information and present findings through appropriate means.
SC8.2.2.	Students use inquiry to conduct scientific investigations: Ask questions that lead to conducting an investigation. Collect, organize, and analyze and appropriately represent data. Draw conclusions based on evidence and make connections to applied scientific concepts. Clearly and accurately communicate the result of the investigations.
SC8.2.3.	Students clearly and accurately communicate the result of their own work, as well as information obtained from other sources.
SC8.2.4.	Students recognize the relationship between science and technology in meeting human needs.
SC8.2.5.	Students properly use appropriate scientific and safety equipment, recognize hazards and safety symbols, and observe standard safety procedures.
SC8.3.1.	Students explore the nature and history of science: Students explore how scientific knowledge changes and grows over time, and impacts personal and social decisions. Students explore the historical use of scientific information to make personal and social decisions.
SC8.3.2.	Students explore how scientific information is used to make decisions: The role of science in solving personal, local, and national problems Interdisciplinary connections of the sciences and connections to other subject areas and careers in science or technical fields Origins and conservation of natural resources, including Wyoming examples

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Water Resources 1 Freshwater		Explain that an aquifer stores groundwater. Identify and describe water resources. Explain the parts of the water cycle: evaporation, condensation, precipitation, runoff, collection, and seepage. Explore concepts to be addressed during the year in Science 5.
Water Resources 2 Water Uses and	SC8.3.2	Describe three or more ways in which water is used, such as for domestic, public, commercial, and irrigation purposes. Name

Treatment		three or more ways to conserve water, such as keeping showers short, turning off water while brushing teeth, and fixing leaking pipes. Identify the typical steps water-treatment plants go through to purify drinking water. Explain why it is important to conserve water.
Water Resources 3 Water Pollution		Describe how both natural processes and human activities affect water quality. Compare point-source and nonpoint-source pollution. Name ways in which nonpoint-source water pollution can be reduced.
Water Resources 4 What's a Watershed?		Identify and describe the parts of a watershed. Describe how both natural processes and human activities affect water quality in watersheds.
Water Resources 5 Topographic Maps: Tools for Environmental Studies		Interpret symbols on a topographic map. Explain how people use topographic maps to help them study watersheds. Identify contour lines and use them to determine elevation. Explain how reading a contour map can help people find ways to keep the environment healthy. Interpret a topographic map to identify the boundaries of a watershed.
Water Resources 6 Optional: Watershed Drainage Patterns		Distinguish among different types of watershed drainage patterns. Relate watershed drainage patterns and the underlying geology of the land. Tell how knowledge of watershed drainage patterns is important to environmental protection. Use a topographic profile to make a 3-D model of a watershed.
Water Resources 7 Optional: Wetlands and Watersheds		Explain how wetlands can improve water quality. Describe reasons why wetlands are important to the overall health of a watershed. Explain how wetlands form. Describe different types of wetlands.
Water Resources 8 Water Resources Unit Review and Assessment	SC8.3.2	Identify the typical steps water-treatment plants go through to purify drinking water. Identify and describe the parts of a watershed. Describe how both natural processes and human activities affect water quality in watersheds. Interpret a topographic map to identify the boundaries of a watershed. Identify the various sources of water, its uses, and different ways to conserve it. Differentiate between point-source pollution and nonpoint-source pollution and identify some ways by which they can both be reduced.
The World's Oceans Ocean Water		State that approximately three quarters of the Earth's surface is covered by water. Define salinity as the amount of salt and other dissolved minerals in ocean water. Describe how the density of ocean water modifies with changes in salinity and temperature.

		State that the Earth's four oceans are connected, allowing ocean water to circulate globally.
The World's Oceans Ocean Currents		State that surface currents are caused by prevailing winds on the ocean's surface. Explain how the Gulf Stream helps moderate the climate of Western Europe. Describe the movements of deep-water currents in the ocean.
The World's Oceans Ocean Waves		Explain the factors that influence the size of an ocean wave and describe a wave's motion. Identify and describe the different parts of a wave (wave height, wavelength, crest, and trough). Explain how changing the frequency of wave affects its wavelength.
The World's Oceans Ocean Tides		Identify the relative positions of the Earth, sun, and moon during spring and neap tides. Describe the characteristics of an intertidal zone and how organisms have adapted to live there. Explain how the gravitational pull of the sun and moon causes daily high and low tides.
The World's Oceans Life at the Edge of the Ocean		Define an estuary as a bay or inlet where fresh river water mixes with ocean water. Describe environmental impacts in estuaries. Explain why salt marshes and mangroves are some of the most biologically productive areas on Earth. Describe life on sandy beaches.
The World's Oceans Ocean Floor	SC8.1.8	Identify and describe the major features of the ocean floor (for example, the continental shelf, continental slope, continental rise, abyssal plains, trenches, ridges, seamounts, and reefs).
The World's Oceans Life Zones of the Ocean		Identify the different zones within the ocean and describe the organisms that live there. Describe the characteristics of a hydrothermal vent. Recognize that many varieties of organisms live in a vent community.
The World's Oceans Optional: Ocean Research	SC8.2.4	Explain how satellites are used to study the ocean. Describe how sonar is used to map the ocean floor. Identify underwater research tools and facilities and explain how they are used.
The World's Oceans Ocean Resources	SC8.2.4, SC8.3.2	Identify some ocean resources, such as fisheries, oil, and minerals, and describe how they are harvested.
The World's Oceans 1 The World's Oceans: Unit Review and Assessment		Explain that water covers approximately three quarters of the Earth's surface and that all the oceans are connected, allowing their water to circulate. Define salinity, and explain how density changes with salinity and temperature. Describe the movements of both the ocean's surface currents and its deep-water currents. Explain how ocean waves form, identify their properties--such as

		<p>wave height, wavelength, crest, and trough--and describe their motion. Explain how the gravitational pull of the sun and moon causes daily high and low tides. Explain that the monthly cycle of spring tides and neap tides occurs because the Earth, sun, and moon change their relative positions. Describe characteristics of ocean habitats and explain how various organisms are adapted to living in them. Explain that the continental margin extends into the ocean and has three regions: the continental shelf, the continental slope, and the continental rise. Describe major features of the ocean floor, such as abyssal plains, trenches, ridges, seamounts, and reefs. Identify some ocean resources, such as fish, oil, and minerals, and describe how they are harvested.</p>
<p>Earth's Atmosphere The Atmosphere</p>		<p>Compare the layers of the atmosphere according to properties such as temperature and composition. Explain how air density is related to both temperature and pressure.</p>
<p>Earth's Atmosphere Why the Wind Blows</p>		<p>Explain that air moves from regions of high density to regions of low density. Describe the circulation of air and the transfer of heat between the equator and the poles. Explain how winds occur.</p>
<p>Earth's Atmosphere Humidity, Dew, and Frost</p>		<p>Define humidity as the amount of water vapor in the air and the dew point as the temperature at which water vapor in the air will condense. Describe how dew and frost form. Determine relative humidity.</p>
<p>Earth's Atmosphere Clouds and Precipitation</p>		<p>Explain how clouds form and identify common cloud types according to their height and appearance.</p>
<p>Earth's Atmosphere Severe Weather</p>		<p>Describe the characteristics of thunderstorms, tornadoes, and hurricanes. Describe how thunderstorms, tornadoes, and hurricanes form.</p>
<p>Earth's Atmosphere Fronts and Forecasts</p>	<p>SC8.2.4</p>	<p>Identify tools meteorologists use to measure weather data. Identify the four types of fronts (cold, warm, stationary, and occluded) and describe how air masses interact. Interpret weather maps to forecast the weather.</p>
<p>Earth's Atmosphere Climate</p>		<p>Distinguish between weather and climate and describe some factors that influence climate (such as latitude, topography, prevailing winds, and oceans). Describe tropical, temperate, and polar climate types. Locate regions of a particular climate on a map.</p>

Earth's Atmosphere Climates and Change		Explain the contributing factors leading to global warming. Describe the greenhouse effect. Describe how El Niño contributes to climate trends.
Earth's Atmosphere The Atmosphere Unit Review and Assessment		Interpret weather maps to forecast the weather. Describe some properties of the atmosphere, such as its composition, density, and pressure. Explain how air density is related to both temperature and pressure. Identify the five layers of the atmosphere: troposphere, stratosphere, mesosphere, thermosphere, and exosphere. Explain that the uneven heating of the Earth's surface transfers heat through convection currents in the atmosphere. Define humidity as the amount of water vapor in the air and the dew point as the temperature at which the air cannot hold any more water vapor. Explain how clouds form and identify common weather patterns associated with different types of clouds. Identify types of precipitation (rain, snow, sleet, hail) and explain how each is formed. Identify sources of air pollution. Identify the three main types of storms and describe the air movements that produce them. Identify types of fronts and explain how air masses interact in cold and warm fronts. Distinguish between weather and climate and describe some factors that influence climate (such as latitude, altitude, and ocean currents). Describe possible causes of climate changes (such as El Niño and the greenhouse effect) and their potential effects on climate.
Motion and Forces 1 Motion	SC8.1.14	Measure and graph the movement of an object's speed in a straight line. Estimate speed by dividing the distance an object travels by the time it takes to travel that distance. Describe how fast an object moves as the speed and direction of the object over time. State the difference between speed and velocity.
Motion and Forces 2 Mass and Force	SC8.1.14	State that objects keep moving with constant speed and direction unless there is an extra push or pull (force) to change their motion. Describe the mass of an object as a measure of how hard it is to change its speed or direction. Identify different "pushes" and "pulls" (electric, magnetic, muscular, spring-driven, wind-driven) as forces that can change an object's speed and direction. State that every push or pull (force) on one thing must make a balancing push or pull in the other direction on something else. Identify the forces that are in balance when an object's speed and direction stay constant.
Motion and Forces 3 Potential and Kinetic	SC8.1.12, SC8.1.13	State that energy is the ability to do work. State that all the energy in a system added together always stays constant (is conserved). Explain the difference between potential energy and

Energy		kinetic energy. In a moving system, identify where the kinetic and potential energies are contained. Recognize that a force acting over a distance changes the energy of an object.
Motion and Forces 4 Simple Machines and Work		Describe how simple machines change the work-distance relationship to make effort easier. Describe examples of simple machines in everyday life.
Motion and Forces 5 Optional: Motion in a Circle	SC8.1.14	Explain the forces at work that will cause an object to move in a circle. Predict how the motion of an object will change if the force applied to the object is more or less, or the speed of the object is faster or slower, or both. State that if the force holding an object in a circular motion suddenly falls to zero, the object will continue to move in a straight line with the same energy.
Motion and Forces 6 Optional: Gravity and Motion at the Earth's Surface		State that near the Earth's surface, objects with no other force acting on them accelerate downward at constant rate. , Define weight as the product of an object's mass and the gravitational force on it. State that any two masses have a gravitational pull between them, but this pull is easily noticeable only if the mass of at least one is very great. , Recognize that the pull decreases as the masses move farther apart, and increases as the mass of either increases.
Motion and Forces 7 Optional: Gravity and Motion Between Planets and Beyond!	SC8.1.7	Describe the role of gravity in maintaining a planet's orbit around the sun. Define weight as the result of the force of gravity on mass.
Motion and Forces 8 Unit Review and Assessment	SC8.1.14	Demonstrate mastery of the objectives taught in this unit.
Motion and Forces 9 Semester Assessment	SC8.1.14	Demonstrate mastery of the semester's content.
Chemistry Atoms and Elements		Recognize that atoms of each element are exactly alike. Identify the three main parts of atoms as protons, electrons, and neutrons, and that protons have a positive charge, electrons a negative charge, and neutrons have n charge at all. Describe the current model of the atom as a positively charged nucleus containing the protons and neutrons surrounded by electrons moving in certain regions within an "electron cloud". State that atoms of different elements have different masses depending on the number of protons, electrons, and neutrons, but that most of the mass comes from the protons and neutrons. Describe the current model of the atom as a positively charged nucleus

		containing the protons and neutrons surrounded by electrons moving in certain regions within an electron "cloud."
Chemistry The Periodic Table of Elements		Explain that all the elements are organized in the Periodic Table of the Elements according to their chemical properties. Describe the common properties of metals (for example, they have luster, are bendable, and are good conductors of heat and electricity). Describe the common properties of nonmetals (for example, they are dull, brittle, and are poor conductors of heat and electricity). Find the number of protons, electrons, and neutrons in an atom using its atomic number (the number of protons) and mass number (the number of protons and neutrons).
Chemistry 3 Compounds and Molecules	SC8.1.10, SC8.1.11	Define a compound as a substance made of two or more elements. Explain that the properties of a compound differ from those of the elements that make up the compound. Recognize that elements combine in certain specific proportions to form compounds. Use the chemical formula of a compound to identify the elements from which it is composed, and determine the number of each type of atom in the compound.
Chemistry 4 Chemical Reactions	SC8.1.11, SC8.1.13, SC8.2.5	Identify the reactants and products in a chemical equation. Match chemical equations to word equations. Recognize that in chemical reactions the original atoms rearrange themselves into new combinations, and that the resulting products have properties differing from those of the reacting compounds. Recognize that for every chemical reaction the number of atoms of each element must be the same for both the reactants and the products.
Chemistry Acids and Bases	SC8.2.3, SC8.2.5	Describe properties of acids (for example, acids taste sour, are corrosive, and contain the element hydrogen). Describe properties of bases (for example, bases taste bitter and feel slippery when dissolved in water). Use the pH Scale to determine whether a solution is acidic or basic.
Chemistry 6 Identification of Compounds	SC8.1.11	Name four types of evidence of a chemical reaction: Change in temperature, color change, release of a gas, and the formation of precipitate. Describe one method of identifying compound or element in product of chemical reaction.
Chemistry 7 Molecules of Life		Define organic compounds as carbon-based, such as those produced by living things and certain others produced in chemistry laboratories. Define inorganic compounds as those that do not usually contain the element carbon. Recognize that living organisms are composed of mainly just a few elements: carbon,

		hydrogen, oxygen, and nitrogen. Describe the functions of proteins, lipids, and carbohydrates in human nutrition.
Chemistry 8 Reaction Rates		Explain that all chemical reactions require a certain amount of energy in order to break existing bonds in the reactants and form new bonds in the products. , Recognize that enzymes can act as catalysts to speed up chemical reactions in the human body. Identify four ways to increase the rate of a chemical reaction (increase the temperature, surface area, concentration, and add a catalyst).
Chemistry Unit Review and Assessment	SC8.1.11	Identify the three main parts of atoms as protons, electrons, and neutrons, and that protons have a positive charge, electrons a negative charge, and neutrons have no charge at all. Describe the current model of the atom as a positively charged nucleus containing the protons and neutrons surrounded by electrons moving in certain regions within an "electron cloud". Explain that all the elements are organized in the Periodic Table of the Elements according to their chemical properties. Recognize that in chemical reactions the original atoms rearrange themselves into new combinations, and that the resulting products have properties differing from those of the reacting compounds. Use the pH Scale to determine whether a solution is acidic or basic. Recognize that the atoms of an element are exactly alike and that each element is made of only one kind of atom. Describe the common properties of metals and nonmetals. Identify some common elements and compounds by both their chemical symbols and their formulas. Describe a compound as a substance made of two or more elements. Explain that the properties of a compound differ from those of the elements that make up the compound. Write chemical equations to show what happens in a chemical reaction. Explain that all chemical reactions require energy. Describe how reaction rates increase with temperature, surface area, concentration, and in the presence of a catalyst. Demonstrate mastery of the skills taught in this unit. Identify some parts of the human endocrine system and their function (pituitary gland, thyroid gland, adrenal gland, and pancreas).
Cells and Cell Processes The Cell Theory	SC8.1.1	Identify the major structures of the cell (such as cell membrane, cytoplasm, and nucleus) and describe their functions. Describe the three major ideas of the cell theory.
Cells and Cell Processes Cell Organelles	SC8.1.1	Recognize the major cell organelles (for example, endoplasmic reticulum, ribosomes, Golgi bodies, chloroplasts, chromosomes, mitochondria, and vacuoles) and describe their functions.

		Distinguish between plant and animal cells.
Cells and Cell Processes 3 Diffusion, Osmosis, and Active Transport		Define diffusion as the process by which molecules move from areas of higher concentration to areas of lower concentration. , Recognize that water moves through membranes by osmosis--diffusion of water through a semipermeable membrane. Recognize various ways in which molecules are transported across the cell membrane.
Cells and Cell Processes 4 Photosynthesis and Respiration		Describe the process of cellular respiration. Describe the process of photosynthesis in plants.
Cells and Cell Processes Optional: The Cell Cycle		Identify and describe the four stages of mitosis: prophase, metaphase, anaphase, and telophase. Recognize that dividing plant and animal cells have a cycle with three phases: interphase, mitosis, and cytokinesis. Recognize that interphase is a period of growth and the copying of the genetic material. Recognize that mitosis is a period of division of the cell nucleus. Recognize that cytokinesis is a final event of cell division after mitosis. Demonstrate mastery of the skills taught in this lesson.
Cells and Cell Processes Optional: DNA		Describe the structure of DNA as two twisted chains of molecular pieces with pairs of bases attached between them like rungs of a ladder. Explain that all the information an organism needs to live and reproduce is contained in its DNA.
Cells and Cell Processes Optional: Heredity	SC8.1.2	Explain that traits are passed from parents to offspring and are determined by genes, with an individual having two copies of each gene, one from each parent. Distinguish between dominant and recessive forms of genes. Use Punnett square to determine the genetic combinations and traits possible in offspring of a simple genetic cross.
Cells and Cell Processes Unit Review and Assessment	SC8.1.1	Demonstrate knowledge and skills gained in this unit. Describe the three major ideas of the cell theory. Distinguish between plant and animal cells. Identify the major structures of cells and describe their functions (nucleus, cytoplasm, cell wall, cell membrane, chromosomes, mitochondria, and chloroplasts). Explain that different types of substances move across the cell membrane by means of diffusion, osmosis, and active transport. Explain that plant cells store energy through photosynthesis and that plant and animal cells release stored energy during respiration. Demonstrate mastery of the skill taught in this unit.

Taxonomy of Plants and Animals Naming and Classifying Life	SC8.1.4	State that Carolus Linnaeus developed system for naming and classifying organisms that is still used today. Recognize that an organism's scientific name is made up of the genus and species the organism belongs to.
Taxonomy of Plants and Animals The Tools of Taxonomy	SC8.1.4	Recognize that living things are classified by shared characteristics. Identify the seven major levels of classification: Kingdom, Phylum, Class, Order, Family, Genus, and Species.
Taxonomy of Plants and Animals 3 Phylogenetic Trees and the Kingdoms of Life	SC8.1.4	Name the six kingdoms: Archaeobacteria, Eubacteria, Protista, Fungi, Planta, and Animalia.
Taxonomy of Plants and Animals 4 Kingdom Archaeobacteria		Identify two characteristics common to organisms in Kingdom Archaeobacteria (live without oxygen, live in extreme environments both hot and cold). Identify one organism in Kingdom Archaeobacteria.
Taxonomy of Plants and Animals 5 Kingdom Eubacteria		Identify a characteristic common to organisms in Kingdom Eubacteria (live in less extreme environments). Identify one organism in Kingdom Eubacteria.
Taxonomy of Plants and Animals 6 Kingdom Protista		Identify two characteristics common to organisms in Kingdom Protista (thrive in wet environments, most are single celled). Identify two organisms in Kingdom Protista (protozoa, amoeba, paramecium, algae, seaweed, water mold, slime mold). State that protists are often grouped according to whether they are plant-like, fungus-like or animal-like.
Taxonomy of Plants and Animals 7 Kingdom Fungi		Identify characteristics common to organisms in Kingdom Fungi (grow best in warm, moist conditions; reproduce through spores). Identify two organisms in Kingdom Fungi (mushroom, lichens, some molds, yeast).
Taxonomy of Plants and Animals 8 Kingdom Planta		Identify characteristics common to organisms in Kingdom Planta (all except mosses are vascular, all use photosynthesis to get nutrients). Identify two plants in Kingdom Planta. Describe vascular plants as plants that have systems for transporting water, sugar, and minerals, whereas nonvascular plants lack these structures. Explain how sugar, water, and minerals are transported in vascular plants. Compare characteristics of gymnosperms and angiosperms.
Taxonomy of Plants and Animals 9	SC8.1.4	Identify characteristics common to organisms in Kingdom Animalia (multicellular, need to get food from an outside source).

Kingdom Animalia		Identify two organisms in Kingdom Animalia that are vertebrates. Identify two organisms in Kingdom Animalia that are invertebrates. Recognize that Kingdom Animalia includes organisms that are vertebrates and invertebrates.
Taxonomy of Plants and Animals 1 Unit Review and Assessment	SC8.1.4	Demonstrate mastery of the skills taught in this unit. Explain how sugar, water, and minerals are transported in vascular plants. Recognize that living things are classified by shared characteristics, and that there are seven major levels of classification: kingdom, phylum, class, order, family, genus, and species. Name the six kingdoms (Archaeobacteria, Eubacteria, Protista, Fungi, Planta, and Animalia) and identify organisms from each. Compare the characteristics of the various groups of plants.
Animal Physiology 1 The Miracle of Life	SC8.1.1, SC8.1.4	Recognize that all body systems play a role in maintaining a constant internal environment. Describe how bones and muscles interact to cause movement.
Animal Physiology 2 The Nervous and Endocrine Systems	SC8.1.1	Identify the parts of the human nervous system and their function (brain, spinal cord, and nerves). Identify some parts of the human endocrine system and their function (pituitary gland, thyroid gland, adrenal gland, and pancreas).
Animal Physiology 3 The Respiratory System	SC8.1.1	Identify the parts of the human respiratory system (nose, mouth, trachea, lungs, diaphragm). Describe how the respiratory system exchanges carbon dioxide and oxygen in the lungs. Demonstrate mastery of the skills taught in this lesson.
Animal Physiology 4 The Circulatory System	SC8.1.1	Recognize that the circulatory system transports oxygen and nutrients to cells while carrying carbon dioxide and other wastes for removal. Recognize that some organisms have no circulatory system, some have an open circulatory system, and others have a closed circulatory system. Explain how blood flows through the human heart. Identify the structures of the heart (atria, ventricles, valves, major veins and arteries). Demonstrate mastery of the skills taught in this lesson.
Animal Physiology 5 The Digestive System	SC8.1.1	Sequence the digestion process. Identify the structures involved in the digestive process and describe their function (mouth, esophagus, stomach, small intestine, large intestine, and liver). Demonstrate mastery of the skills taught in this lesson.
Animal Physiology 6 The Excretory System	SC8.1.1	Identify the organs of the excretory system and describe their function (lungs, liver, kidneys, and skin). Explain how the excretory system removes cellular waste from the blood, converts it to urine, and stores it in the bladder before it leaves

		the body. Demonstrate mastery of the skills taught in this lesson.
Animal Physiology 7 The Immune System and the Reproductive System	SC8.1.2	Describe some reproduction differences between animals. Identify the structures involved with the immune system and describe their function (bone marrow, white blood cells, and lymphocytes). Identify two ways we can work to keep our immune system healthy (get vaccines, eat healthful foods). Recognize that different organisms reproduce through division or fusion.
Animal Physiology 8 Unit Review and Assessment	SC8.1.2	Recognize that all body systems play a role in maintaining a constant internal environment. Describe how the respiratory system exchanges carbon dioxide and oxygen in the lungs. Explain how blood flows through the human heart. Explain how the excretory system removes cellular waste from the blood, converts it to urine, and stores it in the bladder before it leaves the body. Recognize that the circulatory system transports oxygen and nutrients to cells while removing carbon dioxide and other wastes. Put the steps of digestion in the correct order and describe the function of the structures that are part of the digestive process. Describe the functions of the immune system. Describe the reproductive system of some animals.
Animal Physiology 9 Semester Review and Assessment	SC8.1.4, SC8.1.10, SC8.1.11	Demonstrate mastery of the semester's content.