

# Wyoming Department of Education Required Virtual Education Course Syllabus

## 2201001 - Washakie County School District No. 1

Program Name	Washakie #1 Online	Content Area	SC
Course ID	WOL-SC1F1	Grade Level	1
Course Name	WOL-Science 1	# of Credits	1.0
SCED Code	NA	Curriculum Type	K-12 Fuel Education

### COURSE DESCRIPTION

Students learn to perform experiments and record observations, and understand how scientists see the natural world. They germinate seeds to observe plant growth, and make a weathervane. Students will explore topics such as: matter, weather, animal classification and adaptation, habitats, oceans, plants, human body, and light.

## WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	<a href="#">BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets</a>
1-PS4-1	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
1-PS4-2	Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.
1-PS4-3	Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.
1-PS4-4	Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.
1-LS1-1	Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
1-LS3-1	Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
1-ESS1-1	Use observations of the sun, moon, and stars to describe patterns that can be predicted.
1-ESS1-2	Make observations at different times of year to relate the amount of daylight to the time of year.
K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
RI1-10	With prompting and support, read informational texts appropriately complex for grade 1. s

**SCOPE AND SEQUENCE**

<b>LESSON TITLE</b>	<b>STANDARD</b>	<b>OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS</b>
Take Me to Your Ruler		I can measure lengths in nonstandard units, recognize the importance of using a standard unit of measurement for scientific data, measure lengths in centimeters, and explore concepts to be addressed during the year in Science 1.
Balancing Act		I can measure the mass of various objects, in grams, with a double pan balance, recognize that a gram is a standard unit of measurement, arrange objects of different mass, from the least mass to the greatest mass, and demonstrate that size and mass are not always related.
Pour It		I can use a graduated cylinder to measure the volume of water in milliliters, recognize that mL is the symbol for milliliters, and compare the capacities of containers by measuring their volumes.
Read a Thermometer		I know that a thermometer is a tool for measuring how hot or cold something is, can measure temperature in degrees Celsius, and can explain that hotter objects have higher temperatures than colder objects.
Thinking Like a Scientist		I can explain that scientists use the scientific method to answer questions, and recognize steps of the scientific process.
The Zookeeper	K-2-ETS1-1 K-2 ETS1-2	I can compile data in a table, interpret results from a bar graph, demonstrate mastery of the important knowledge and skills taught in this unit and draw a bar graph using data from the table, know that a thermometers is a tool for measuring how hot or cold something is, measure lengths in centimeters, explain that hotter objects have higher temperatures than colder objects, demonstrate mastery of the important knowledge and skills taught in this unit, measure lengths in nonstandard units, and use a graduated cylinder to measure the volume of water in milliliters.
States of Matter		I can explain that everything is made of matter, can name all three states of matter: solid, liquid, and gas, can explain that solids hold their own shape and can explain that liquids flow freely and take the shape of their containers.
Gases Matter		I can identify the three states of matter, explain that gases have no definite shape and fill up the space in which they are contained and can demonstrate that gases have mass.
Solids Melt, Liquids Freeze	2-PS1-4	I can demonstrate that solids change to liquids when heated, can demonstrate that liquids change to solids when cooled and can explain that ice and water are the same type of matter.
From Liquid to Gas and Back Again		I can explain that water vapor is water in a gaseous state, can explain that ice, water, and water vapor are the same type of matter can explain, using water as a model, that liquid changes to gases when heated. Can explain, using water as a model, that gases can change back to liquids when cooled and can state that heated water changes to water vapor.
Molecules on the Move		I can state that matter is made up of molecules, using water as a model, I can act out the relative motion of molecules in solids, liquids, and gases and I can recognize that molecules move faster when they are warm and more slowly when they are cool
On the Water's Surface		I can recognize that surface tension can hold lightweight objects on the surface of the water.
What's the Solution?	K-2-ETS1-1 K-2-ETS1-2	I can name all three states of matter: solid, liquid, and gas. I can demonstrate that solids change to liquids when heated. I can explain that

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	K-2-ETS1-3 2-PS1-4	water vapor is water in a gaseous state. I can explain, using water as a model, that liquid changes to gases when heated. I can state that matter is made up of molecules. I can recognize that molecules move faster when they are warm and more slowly when they are cool. I can explain that ice, water and water vapor are the same type of matter. I can explain that everything is made of matter. I can recognize that states of matter can be combined to make mixtures, I can explain that items in a mixture can be separated and I can describe how to separate two solids in a mixture. I can demonstrate mastery of the important knowledge and skills taught in this unit.
The Weather Forecast		I can record weather conditions, state that the weather changes every day, tell that meteorologists use satellites to help make weather forecasts and define a meteorologist as a person who studies the weather.
Seasons		I can state that the Earth spins around completely on its axis in one day, tell that the Earth orbits the sun, making one complete orbit in one year, explain that the seasons change because the axis of the Earth is tilted, and the sun warms the Earth differently at different times during the year and recognize the general weather conditions associated with each of the four seasons.
Wind Direction and Wind Speed		I can construct an anemometer to measure wind speed, construct a weather vane to determine wind direction, record weather conditions and explain that an anemometer measures wind speed and that a weather vane measures wind direction.
The Rain Catcher		I can construct a rain gauge explain that a rain gauge is used to measure the amount of rainfall and record weather conditions.
Water in the Air		I can explain that clouds are made of water droplets, describe evaporation as the process of a liquid changing into a gas, state that condensation is the process of a gas changing into a liquid, explain that rains happens when droplets in the clouds become large and heavy enough to fall to the ground and measure humidity using a glass of ice cubes.
Cotton Ball Clouds		I can identify the four types of clouds: stratus, cumulus, cirrus, and cumulonimbus and I can state the common weather conditions associated with each cloud type.
The Water Cycle		I can sequence the steps of the water cycle, tell how hail is formed in a cloud and name the four main types of precipitation.
Drifting Snowflakes		I can demonstrate how large snowflakes fall more slowly than sleet, tell how to measure snowfall depth, explain that the depth of snow is greater before it melts than after it melts and state that snowflakes usually have six sides or points.
Flash, Crash, Rumble, and Roll		I know that electricity in thunderclouds can make a flash of lightning, I can demonstrate how lightning and thunder are made and I can identify ways to stay safe in a lightning storm.
My Weather Chart	1-PS4-1 K-ESS2-1 K-ESS3-2	I can interpret weather chart observations, and demonstrate mastery of the important knowledge and skills taught in this unit including: explain that clouds are made of water droplets, name the four main types of precipitation, explain that an anemometer measures wind speed and that

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		a weather vane measure wind direction, define a meteorologist as a person who studies the weather, state that the Earth spins around completely on its axis in one day, recognize the general weather conditions associated with each of the four seasons., sequence the steps of the water cycle – know that water evaporates from the surface of the Earth, rises and condenses to form clouds, returns to Earth as precipitation, state that the weather changes every day, sequence the steps to the water cycle, know that electricity in thunderclouds can make a flash of lightning, interpret weather chart observations.
Insects and Spiders		I can explain the differences between an insect and a spider and identify the main characteristics of insects and spiders.
Reptiles and Amphibians		I can identify the main characteristics of amphibians, identify the main characteristics of reptiles and recognize the difference between amphibians and reptiles.
Birds		I can recognize birds as a group of animals and I can identify and explain the functions of the main characteristics of birds.
Mammals	1-LS1-1 1-LS1-2 1-LS3-1	I can demonstrate mastery of the important knowledge and skills taught in this unit, identify the main characteristics of mammals and recognize mammals as a group of animals. I can identify the main characteristics of mammals. I can recognize mammals as a group of animals.
Teeth and Beaks	1-LS1-1 1-LS1-2	I can recognize that a bird's beak is shaped to help it eat certain food and recognize that an animal's teeth are shaped to help it eat certain food. I can recognize and explain the function of the main characteristics of birds.
Feet and Fins	1-LS1-1	I can explain that feet and fins help animals move in water, on land, or in both places and tell how animals use their feet or fins.
What Color Is Camouflage?	1-LS1-1	I can explain that camouflage is an adaptation that helps animals blend in with their surroundings in order to survive.
Fur and Feathers	1-LS1-1	I can explain that fur keeps mammals warm by trapping their body heat, explain that down feathers keep birds warm by trapping their body heat and explain that flight feathers help birds fly.
Behavioral Adaptations	1-LS1-1	I can demonstrate mastery of the important knowledge and skills taught in this unit and describe behaviors that help animals stay alive.
Light in Our Lives	1-PS4-3 1-LS1-1	I can identify sources of light, explain that light can reflect off objects explain that smooth surfaces reflect light better than rough surfaces and demonstrate that light can be blocked.
A Beam of Light	1-PS4-2	I can state that light travels in a straight path and explain how light reflects.
See Through It		I can define transparent, translucent, and opaque, explain how the thickness of an object affects its translucency, classify objects according to how much light they transmit and identify transparent, translucent, and opaque materials.
Dancing in the Dark		I can explain how a shadow is made and describe how the sizes and shapes of shadows can change.
Make a Shadow Clock	1-PS4-2 1-PS4-3 1-PS4-4	I can construct a shadow clock by using common household items and record shadows over a period of time and demonstrate that the length of a shadow changes throughout the day.

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Kaleidoscopes		I can explain how light is reflected in a kaleidoscope and demonstrate how two small mirrors can produce multiple images.
Biography: Thomas Edison	1-PS4-3 1-PS4-4 1-ESS1-1 1-ESS1-2	I can identify Thomas Edison as the inventor of many things, including the light bulb, the phonograph, and the motion picture, explain that smooth surfaces reflect better than rough surfaces., Identify sources of light, demonstrate that light can reflect off objects, state that light travels in a straight line, demonstrate how the thickness of a material affects its translucency, identify transparent, translucent, and opaque materials, demonstrate that the length of a shadow changes throughout the day, demonstrate that the length of a shadow changes throughout the day and explain how light is reflected in a kaleidoscope; identify sources of light; state that light travels in a straight line, demonstrate that light can reflect off objects, identify transparent, translucent and opaque materials, explain how a shadow is made.
From Seed to Seedling	1-LS3-1	I can tell what plants need in order to live and grow, state that plants grow from seeds and that this starts with a process called germination and describe what happens when a seed germinates.
What's Inside a Seed?	1-LS3-1	I can identify the three main parts of a seed: cotyledons, seed coat, and embryo, state that the cotyledons provide food for the baby plant inside the seed and record seed germination observations.
Rootin' Tootin' Roots		I can differentiate between fibrous roots and taproots, describe the basic functions of roots in plants and record seed germination observations.
Lovely Leaves		I can record seed germination observations, Identify two parts of a leaf: petiole and veins, describe the function of leaves, and explain that chlorophyll is a green substance in plants that helps them make their own food from sunlight.
Super Strong Stems, Part 1		I can differentiate between soft and green stems and hard, woody stems, explain that a stem's functions are to carry water to the leaves and to hold the plant and its leaves up toward the sun and record seed germination observations.
Super Strong Stems, Part 2		I can identify structures that carry water and nutrients throughout the plant as xylem, list two functions of stems: they support the plant and carry water and nutrients to its leaves and record seed germination observations and draw accurate conclusions from the germination experiment.
Flowers and Fruit		I can state that fruits come from flowers, explain that fruits contain seeds and identify foods we eat as fruits and seeds.
Bulbs	1-LS1-2 1-LS3-1	I can recognize that a bulb is a type of plant that can grow without seeds, identify parts of a bulb and demonstrate mastery of the important knowledge and skills of this unit, identify parts of a bulb, tell what plants need in order to live and grow, identify the three main parts of a see: cotyledons, seed coat and embryo, explain that fruits contain seeds, describe the basic functions of roots in plants, explain that a stem's functions are to carry water to the leaves and to hold the plant and its leaves up toward the sun, identify foods we eat as fruits and seeds, state that the cotyledons provide food for the baby plant inside the seed, state that fruits come from flowers.

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<b>LESSON TITLE</b>	<b>STANDARD</b>	<b>OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS</b>
Introduction to Habitats		I can recognize that there are many different kinds of habitats, each with different types of plants and animals and describe a habitat as a place where plants and animals live.
Forest Habitat		I can describe the forest habitat as having different layers where different types of forest animals and plants live and recognize animals and plants that live in the forest.
Desert Habitat		I can explain how some desert plants and animals have found ways to live in a hot, dry desert, recognize the characteristics of a desert habitat and recognize plants and animals that live in a sandy desert.
Polar Habitat		I can recognize characteristics of the polar habitats, identify plants and animals that live in the Arctic, state that polar habitats are near the Earth's North and South Poles and explain that blubber helps animals that live in cold habitats stay warm.
Grasslands Habitat		I can identify some plants and animals that live in the grasslands habitat, differentiate between grazers and predators, measure plant growth and record data and identify characteristics of the grasslands habitat.
Rain Forest Habitat		I can give an example of a product made from rain forest plants, recognize characteristics of a rain forest and recognize that the rain forest has different layers.
Wetlands Habitat		I can recognize characteristics of the wetlands habitat, identify some animals and plants that live in the wetlands habitat, and make a model to show how the wetlands help clean the Earth's water.
Life Underground		I can explain that living underground provides protection from hot and cold weather, explain that in different habitats, some animals live underground and identify some animals that live underground.
Biography: John Muir		I can tell that John Muir was a conservationist and writer who worked to preserve wilderness and name different habitats that are protected by the National Park Service in the United States.
Endangered Species	1-LS1-1 1-LS1-2 1-LS3-1 K-2ETS1-1	I can show how constructing a town can reduce the amount of space available for plants and animals, demonstrate mastery of the important knowledge and skills of this unit, describe a habitat as a place where plants and animals live, tell that John Muir was a conservationist and writer who worked to preserve wilderness, explain that in different habitats, some animals live underground, recognize animals and plants that live in the forest, recognize the characteristics of a desert habitat, recognize characteristics of a rain forest, identify characteristics of the grassland habitat, recognize characteristics of the polar habitats.
Ocean Waves and Currents		I can state that the Earth's oceans contain saltwater, state that ocean water is always in motion and recognize that light winds form small waves, and strong winds form large waves.
Coasts: Where the Ocean Meets the Land		I can define a coast as the place where land and ocean meet, recognize that animals and plants that live in tide pools depend on tides to survive and describe tides as the rise and fall of the ocean.
Drifters, Swimmers, and Crawlers		I can describe some of the different ways animals move around the ocean (for example, drifting, crawling, and swimming) and recognize that many animals drift with the moving ocean.
04M - An Octopus Is Amazing	1-LS1-2	I can recognize that an octopus has eight arms and no bones, explain that an octopus can move quickly by pushing water through its siphon and

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		explain one way an octopus protects itself, for example, with camouflage or by squirting ink out of its siphon.
The Kelp Forest		I can recognize that a kelp forest has layers and explain that kelp is a type of plant that grows only in the ocean.
The Coral Reef		I can recognize that corals are animals that make up coral reef and explain that corals use tentacles to catch food.
The Deep Ocean	1-PS4-2	I can recognize that most of the ocean is dark, state that animals live at all depths of the ocean and compare the formations on the bottom of the ocean with familiar landforms.
Biography: Jacques Cousteau	1-LS1-1 1-LS1-2 1-LS3-1 K-2-ETS1-1	I can explain that Jacques Cousteau was an important oceanographer and demonstrate mastery of the important knowledge and skills of this unit, recognize that [many animals drift with the moving ocean, recognize that most of the ocean is dark, recognizes that light winds form small waves and strong winds fomr large waves, state the the Earth’s oceans contain saltwater, define a coast as the place where land and ocean meet, recognize that corals are animals the make up coral reefs, stathe that animals live at all depths of the ocean, explain that kelp is a type of plant that grows only in the ocean, compare the formation on the bottom of the ocean with familiar landforms..
The Skeletal and Muscular Systems	1-LS1-1	I can explain that bones protect and support our bodies and state that muscles are attached to bones and make our bodies move.
The Digestive System	1-LS1-1	I can recognize how the mouth, esophagus, stomach, and intestines function as part of the digestive process and identify the mouth, esophagus, stomach, and intestines as parts of the digestive system.
The Circulatory and Respiratory Systems	1-LS1-1	I can explain that the heart pumps blood to all parts of the body through blood vessels and state that when we breathe, we take air into our lungs, and we must do so to stay alive.
The Nervous System	1-LS1-1	I can state that the brain controls the entire body and allows you to think, remember, and feel and explain that the nervous system is made up of the brain, the spinal cord, and the nerves.
Biography: Elizabeth Blackwell	1-LS1-1 1-LS1-2 RI.1.10	I can demonstrate mastery of the important knowledge and skills of this unit, state that Elizabeth Blackwell was the first woman doctor and explain how washing your hands can reduce the spread of germs, state that when we breathe we take air into our lungs and we must do so to stay alive, recognize how the mouth, esophagus, stomach and intestines function as part of the digestive process, identify the mouth, esophagus, stomach and intestines as parts of the digestive system, explain that the heart pumps blood to allp0arts of the body through blood vessels, state that your brain controls your entire body and allows you to think, remember and feel, Nonfiction texts differ from fiction texts in that they describe real or true things in life, rather than things made up by the author.