

# Wyoming Department of Education Required Virtual Education Course Syllabus

## Niobrara County School District # 1

Program Name	Wyoming Virtual Academy	Content Area	SC
Course ID	CALMS3988	Grade Level	K
Course Name	Science K Summit NG	# of Credits	
SCED Code		Curriculum Type	K12 Inc

### COURSE DESCRIPTION

- Kindergarten students begin to develop observation skills as they learn about the five senses, the earth's composition, and the basic needs of plants and animals. Students will explore topics such as:
- My Body—the five senses; major organs and systems
  - Plants and Animals—needs and habitats; conservationist Jane Goodall
  - Measurement—size, height, length, weight, capacity, and temperature
    - Matter—solid, liquid, and gas
  - The Seasonal Cycle—changing weather in the seasons
  - Our Earth—geographical features; taking care of the earth; environmentalist Rachel Carson
    - Motion—pushes and pulls; magnets
  - Astronomy—the earth, sun, moon, and stars; exploring space; astronauts Neil Armstrong and Sally Ride

### WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	<a href="#">BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets</a>
K-PS2-1	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
K-PS2-2	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.
K-PS3-1	Make observations to determine the effect of sunlight on Earth's surface.
K-PS3-2	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
K-LS1-1	Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
K-ESS2-2	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
K-ESS3-1	Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
K-ESS3-3	Communicate solutions that will manage the impact of humans on the land, water, air, and/or other living things in the local environment.
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.

UNIT OUTLINE		
UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
1 Observing My World 1 Observing My World		Name the five senses. Explain that a scientist observes. Explore concepts to be addressed during the year in Science K. Describe your observations, using one sense at a time.
1 Observing My World 2 A Closer Look		Compare observations of small objects with and without a magnifying glass. Explain that light is needed in order for our eyes to see. Describe the function of eyes.
1 Observing My World 3 Sort by Sight		Describe objects by using the sense of sight. Sort objects according to their size, shape, and/or color.
1 Observing My World 4 Hear Here		Describe sounds as high or low. Identify the parts of the body that we use for hearing. Describe sounds as loud or soft.
1 Observing My World 5 Something Smells		Name the body part we use for smelling. Identify odors using the sense of smell. Explain that odors travel through the air.

1 Observing My World 6 You've Got Taste		Identify foods using the sense of taste. Compare sweet and sour tastes. Explain the function of the tongue and taste buds.
1 Observing My World 7 A Touchy Subject	K-2-ETS1-2	Categorize objects as hard, soft, rough, or smooth, using the sense of touch. Identify objects using only the sense of touch. Recognize that you can use multiple senses at the same time.
2 My Body 1 Everybody's Bodies		Identify and compare external features of the human body.
2 My Body 2 Bones Make Our Skeletons		Explain that bones protect the insides of our bodies. Explain that our skeletons hold us up and give us shape. Recognize that bones fit together at the joints to make our skeletons. Identify major joints of the body.
2 My Body 3 Inside Out		Explain that the heart pumps blood through the body. Know that the brain controls our bodies and allows us to think and remember. Explain how muscles work. Identify major joints of the body.
2 My Body 4 A Toothy Grin	K-ESS3-1, K-LS1-1	Identify the three main outer parts of the tooth: the crown, the neck, and the root. State that people are born with two sets of teeth. Explain that we use our front teeth to bite or tear food and our back teeth to grind and chew food. Explain ways to keep teeth healthy.
3 Introduction to Living Things 1 What's Alive?		Determine whether something is living or nonliving. Know that living things grow with food, water, and air.
3 Introduction to Living Things 2 What Do Plants Need?		Know that plants take in water through their roots. State that plants use sunlight to make food. Name the three main things that plants need: food, water, and air. Know that plants take in air through tiny holes in their leaves.
3 Introduction to Living Things 3 What Do Animals Need?		Know that shelter is a place where animals make their homes, in order to keep safe. Know how animals' needs are different from plants' needs. Name the three main things that animals need: food, water, and air. Identify what animals eat and what they use for shelter.
3 Introduction to Living Things 4 Changes	K-LS1-1, K-ESS2-2, K-ESS3-1	Identify how living things can grow and change. Identify how nonliving things can change. Conclude what happens to a plant when it does not get everything it needs to grow. Identify what animals eat and what they use for shelter.

4 Plants 1 Plant Structures		Name the following plant structures: root, stem, trunk, branch, leaf, flower, and fruit. Compare plant structures among a variety of different plants.
4 Plants 2 Sow Many Seeds!		Recognize that there are many different types of seeds. State that the fruit is the part of the plant that contains seeds. Identify seeds and fruits that we eat. Compare, sort, and graph seed types by their physical attributes.
4 Plants 3 Plants as Food		Identify plant roots, stems, leaves, flowers, and fruit as food that we eat.
4 Plants 4 Trees Are Plants, Too!	K-LS1-1, K-ESS2-2, K-ESS3-1	Name the following parts of a tree: root, trunk, branch, twig, leaf, and bark. State that evergreen trees keep most of their leaves all year round. State that deciduous trees lose their leaves in the fall and grow new ones in the spring.
5 Animals 1 What's That Animal?		Identify animal bodies and coverings including fur, feathers, scales, a hard outer shell, and smooth skin and soft bendable bodies. Match animals to their body coverings.
5 Animals 2 Animal Motion		Match animal features that are used for movement. Identify how animals move. Demonstrate different types of animal movements.
5 Animals 3 What Do Animals Eat?		Identify how animals get their food. Know that some animals eat plants, others eat animals, and some eat both plants and animals.
5 Animals 4 Biography: Jane Goodall	K-LS1-1, K-ESS2-2, K-ESS3-1,	Observe animal behavior. Explain that Jane Goodall discovered that chimpanzees use tools. Explain that Jane Goodall studied animal behavior.
7 Make the Measurement 1 Length and Height		Sequence a group of objects by their height or length. Explain that length is how long something is. Explain that height is how high or tall something is. Compare the height and length of two objects.
7 Make the Measurement 2 Give Me a Hand		Measure lengths in nonstandard units. Make a pictograph to compare the measurements of several objects in nonstandard units.
7 Make the Measurement 3 How Heavy? How Much?		Sequence objects by their weight. Sequence objects by their capacity.
7 Make the Measurement 4 Hot and Cold	K-PS3-1, K-PS3-2, K-2-ETS1-1	Identify household objects as being hot, warm, or cold. Use a thermometer to see how high and low temperatures affect it.

8 What's the Matter? 1 Solids		Observe that everything is made of matter. Know that matter is a solid, a liquid, or a gas. Identify solid forms of matter.
8 What's the Matter? 2 Liquids		Recognize that liquids can be poured and take the shape of their containers. Identify liquid forms of matter. Test whether certain materials are liquid or solid.
8 What's the Matter? 3 Gases		Identify some characteristics of gases. Demonstrate that gases, such as air, take up space.
8 What's the Matter? 4 Sink or Float		Observe that one liquid can float on top of another. Observe that some objects sink when you place them in water. Observe that some objects float when you place them in water.
8 What's the Matter? 5 Changing Matter	K-PS3-1, K-ESS2-1, K-2-ETS1-1	Know that a liquid can change to a solid. Know that matter can change forms. Know that a solid can change to a liquid.
9 What's the Weather? 1 What About Weather?		Record weather conditions on a weather chart. Determine the appropriate clothing for different weather conditions. Identify different weather conditions.
9 What's the Weather? 2 The Sun's Up		Record weather conditions on a weather chart. Record weather conditions on a weather chart. Explain that the sun is a source of warmth. Demonstrate that the sun warms water and that the water goes into the air.
9 What's the Weather? 3 As the Wind Blows		Use a windsock to observe the wind. Demonstrate how wind (moving air) can move objects. Learn that wind is moving air.
9 What's the Weather? 4 Watching the Clouds Go By		Know that clouds are made of water. Know that different types of clouds are associated with different types of weather. Know that clouds come in many different shapes, sizes, and colors. Know that clouds are moved by the wind.
9 What's the Weather? 5 Raindrops and Rainbows		State that rainbows sometimes form after it rains. Explain that rain is water that falls from clouds in the sky. Know that rainbows are made up of red, orange, yellow, green, blue, indigo, and purple
9 What's the Weather? 6 Weather Watch	K-ESS2-1, K-ESS3-2	Describe four types of severe weather: droughts, floods, hurricanes, and tornadoes. Graph observations from a weather chart.
10 Seasons 1 Falling for Fall		Explain that the weather gets cooler in the fall. Explain that some animals gather and store food during the fall. Recognize the changes that occur to deciduous trees in the fall.

10 Seasons 2 Winter Wonderland		Explain that the weather is coldest in the winter. Recognize the changes that can occur to deciduous trees in the winter. Explain that food can be hard for animals to find in the winter.
10 Seasons 3 Animals in Winter		Recognize that animals use different strategies to make it through cold winters (for example, hibernating, migrating, storing food, or actively searching for food and shelter.)
10 Seasons 4 Spring Has Sprung		Explain that many animals become more active and have babies in the spring. Recognize the changes that occur to deciduous trees in the spring. Explain that the weather becomes warmer in spring.
10 Seasons 5 Summer Sun	K-ESS2-1, K-ESS3-2	Explain that the weather is warmest in the summer. Explain that the seasons continuously cycle from one to the next, always in the same order. Recognize the changes that occur in many deciduous trees in the summer.
11 Planet Earth 1 The Shape of the Earth		Identify the shape of the Earth as a sphere. Define Earth as the name of our world. Locate the North Pole, South Pole, and the equator on a globe.
11 Planet Earth 2 The Earth's Surface		Explain that the Earth's surface is composed of land and water. Identify the large areas of land on Earth as continents. Identify the large areas of water on Earth as oceans. Explain that more of the Earth's surface is covered by water than by land.
11 Planet Earth 3 Land Shapes		Identify mountains, valleys, hills, islands, and plains. Recognize that land on Earth has different shapes.
11 Planet Earth 4 Bodies of Water		Identify oceans, lakes, ponds, rivers, and streams as bodies of water on the surface of the Earth.
11 Planet Earth 5 Rocks and Soil	K-ESS3-1	Explain that land is made of rocks and soil, and that rocks are found all over the Earth, even under bodies of water. Explain that soil is made of tiny bits of rock mixed with other bits of things like leaves, worms, and bugs, living and dead. Sort rocks by size and by texture.
12 Taking Care of Our Earth 1 The Earth Gives Us So Much		Identify water and trees as resources we use every day.
12 Taking Care of Our Earth 2 Why Should We Conserve?		State one way to conserve water and one way to conserve electricity.

12 Taking Care of Our Earth 3 Is There a Solution to Pollution?		Describe different ways to keep the Earth clean. Identify water and land pollution.
12 Taking Care of Our Earth 4 Reduce, Reuse, Recycle		State that one way to conserve is to reduce the amount of paper you throw away.
12 Taking Care of Our Earth 5 Biography: Rachel Carson	K-ESS3-3, K-2-ETS1-1	Tell that Rachel Carson studied and wrote books about nature. Observe and record things found in nature.
14 Make It Move 1 How Things Move		Describe an object's position. Tell how an object has moved using position words.
14 Make It Move 2 Pushes and Pulls		Explain that big pushes can make things go faster than small pushes. Demonstrate how pushes and pulls can make things move.
14 Make It Move 3 A New Way to Push and Pull		Recognize that magnets are strongest at the ends, at their poles. Show that magnets attract some things made of metal. Demonstrate how magnets can attract and repel each other with pushes and pulls.
14 Make It Move 4 Magnets Are Everywhere	K-PS2-1, K-PS2-2, K-2, ETS1-3	Identify ways people use magnets. Explain that magnets can work through certain objects.
15 Astronomy 1 Day and Night		Explain that day and night are a result of the spinning of the Earth.
15 Astronomy 2 The Closest Star		State that the sun is a star. Recognize that stars are very far away. Compare the size of the sun to the size of the Earth.
15 Astronomy 3 Star Patterns		Recognize that groups of stars form shapes in the sky called constellations. Identify the Big Dipper and Little Dipper constellations.
15 Astronomy 4 Biography: Neil Armstrong		Identify Neil Armstrong as the first person to walk on the moon. Name some items that the astronauts brought back from the first trip to the moon.
15 Astronomy 5 On the Surface of the Moon		Explain why people cannot live on the moon. Describe the surface of the moon as dusty, rocky, and covered with craters.

15 Astronomy 6 Biography: Sally Ride	HS-ESS2-1, K-Ess3-3, K- 2, ETS1-1	Identify Sally Ride as the first American woman to fly into space. Compare life on Earth to how astronauts must live while traveling in space.
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