

Wyoming Department of Education Required Virtual Education Course Syllabus

Sheridan County School District # 1

Program Name	Sheridan County School District #1 Virtual School	Content Area	SC
Course ID	AC03234	Grade Level	4
Course Name	Grade 4 Science	# of Credits	1
SCED Code	03234	Curriculum Type	Acellus

COURSE DESCRIPTION

Acellus Grade 4 Science is a stimulating course discussing topics of life, earth, and physical science as well as space and technology. The course includes lab to help students experience the theory they are learning "in action".

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
4-PS3-1	Use evidence to construct an explanation relating the speed of an object to the energy of that object.
4-PS3-2	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
4-PS3-3	Ask questions and predict outcomes about the changes in energy that occur when objects collide.
4-PS3-4	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.
4-PS4-1	Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.
4-PS4-2	Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.
4-PS4-3	Generate and compare multiple solutions that use patterns to transfer information.
4-LS1-1	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
4-LS1-2	Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.
4-ESS1-1	Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
4-ESS2-1	Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.
4-ESS2-2	Analyze and interpret data from maps to describe patterns of Earth's features.
4-ESS3-1	Obtain and combine information to describe that energy and fuels are derived from renewable and non-renewable resources and how their uses affect the environment.
4-ESS3-2	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.
3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5-ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
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SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Unit 1 – Classifications of Plants and Animals	4-LS1-1; 4-LS1-2	In this unit students learn about the building blocks of life – cells – how living things are grouped. Students also learn how plants and animals are classified, and how animals adapt to survive.
Unit 2 – Energy from Plants	4-LS1-1	In this unit students learn about plants, including their characteristics, parts, reproduction, and life cycle. They also learn about the life of Charles Darwin.
Unit 3 – Ecosystems	4-LS1-1	In this unit students study ecosystems. They learn about their parts, energy flow, and matter flow.
Unit 4 – Changes in Ecosystems	4-LS1-1	In this unit students learn about what a balanced ecosystem is, as well as things that disturb the balance of ecosystems, such as competition, organisms' interaction, environmental changes, and people. They also learn about how to conserve the balance in an ecosystem, and careers in biology.
Unit 5 – Human Body Systems	4-LS1-1; 4-LS1-2	In this unit students learn about major human body systems, including skeletal, muscular, respiratory, circulatory, digestive, and nervous systems. They also learn about viruses and diseases, the body's defense systems, and optometry as a career.
Unit 6 – Water Cycles and Weather	4-ESS2-1	In this unit students study the water found on Earth. They learn about clouds, the atmosphere, air pressure, the water cycle, and measuring and predicting the weather.
Unit 7 – Hurricanes and Tornadoes	4-ESS3-2	In this unit students learn about hurricanes and tornadoes, including predicting hurricanes and forecasting tornadoes. They also learn about Meteorology as a career.
Unit 8 – Minerals and Rocks	4-ESS1-1	In this unit students learn about minerals, focusing on how sedimentary, metamorphic, and igneous rocks are formed. They also learn about the life of Alfred Wegner.
Unit 9 – Surface Changes on Earth	4-ESS1-1; 4-ESS2-1; 4-ESS2-2; 4-ESS3-2	In this unit students learn about how Earth's surface is being worn away and what happens to weathered material. They also learn about covered are volcanoes and earthquakes.
Unit 10 – Uses of Natural Resources	4-ESS3-1	In this unit students learn about natural resources with special emphasis on soil. They also learn about resources used for energy, about careers in Geology.

Unit 11 – Properties of Matter		In this unit students learn about matter and its properties, including how to measure matter, as well as an overview of different ways matter can change. They also learn about physical, chemical, and phase changes.
Unit 12 – Heat	4-PS3-2; 4-PS3-4	In this unit students learn about matter that contains energy, how heat moves, convection, and radiation. They also learn about careers in Chemistry.
Unit 13 – Magnetism and Electricity	4-PS3-2; 4-PS3-4	In this unit students learn about atoms, magnetic fields, and how matter can be charged. They also learn how electric charges flow, and how electricity can be transformed into magnetism.
Unit 14 – Light and Sound	4-PS3-2; 4-PS3-4; 4-PS4-1; 4-PS4-2; 4-PS4-3	In this unit students learn about energy as sound and as light, how sound is produced, and how matter and light interact. They also learn about the life of Thomas Edison.
Unit 15 – Objects in Motion and Simple Machines	4-PS3-1; 4-PS3-3	In this unit students study motion and simple machines. They also learn how force affects moving objects and how force, mass, and energy relate to each other.
Unit 16 – Inner and Outer Planets		In this unit students learn about how the universe came to be, what is within our solar system, the concepts of revolution and rotation, and each of the eight planets. They also learn about rockets, constellations, eclipses, moon phases, asteroid belts, comets, the moon, the stars, the sun, and the life of Nicolas Copernicus.
Unit 17 – Technology's Effects	4-PS4-3; 3-5-ETS1-1; 3-5-ETS1-2; 3-5-ETS1-3	In this unit students study technology. They learn how technology affects our lives and has changed transportation and communication.