

# Wyoming Department of Education Required Virtual Education Course Syllabus

## BIG HORN COUNTY SCHOOL DISTRICT #1

Program Name	WYCA	Content Area	Science
Course ID	CASC80388	Grade Level	9, 10, 11, 12
Course Name	Earth Space Science A	# of Credits	0.5
SCED Code	03008G0.5012	Curriculum Type	Connections Academy

### COURSE DESCRIPTION

*Why did early explorers risk their lives to reach the North Pole? Why does Earth look so beautiful when seen from space? What is really down at the bottom of the ocean? Discovering new things about Earth has been the dream of scientists and explorers for centuries. Today, it is your turn to continue that journey of discovery. Earth Space SC is a laboratory course focusing on the study of space and the geologic and atmospheric forces that shape the world. Through experimentation and investigation, the student will explore Earth cycles including the geosphere, hydrosphere, cryosphere, atmosphere, and the carbon cycle. The student will learn about scientific inquiry, geologic time, space exploration, the solar system, and the universe. The student will use web 2.0 tools, interactive experiences, higher-order thinking, collaborative projects, and real-world application through labs and a variety of assessments. Upon completion of the course, the student will have a clear understanding of the dynamic forces at work in the surrounding world, becoming better caretakers of planet Earth.*

### WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK
HS-ESS1-1	Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.
HS-ESS1-3	Communicate scientific ideas about the way stars, over their life cycle, produce elements.
HS-ESS2-1	Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.
HS-ESS2-2	Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.
HS-ESS2-4	Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.
HS-ESS2-5	Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.
HS-ESS3-1	Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.
HS-ESS3-4	Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.
HS-ESS3-5	Analyze data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.
HS-ESS3-6	Use the results of a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

### SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES
<b>Unit 1: Introduction and Foundation</b> This unit is an introduction to the course. Some items covered include the motif, pace, lab safety, Scientific Method, and basic skills.	HS-ESS1-1, HS-ESS1-3	<ul style="list-style-type: none"> <li>• Summarize the focus of the course</li> <li>• Describe and understand scientific practices and methods</li> <li>• Differentiate graphs used for data sets</li> </ul>
<b>Unit 2: Weather and Climate</b> In this unit, you will learn about the atmosphere of our planet, weather factors, and severe weather.	HS-ESS2-1, HS-ESS2-2, HS-ESS2-4, HS-ESS3-1, HS-ESS3-4, HS-ESS3-5, HS-ESS3-6	<ul style="list-style-type: none"> <li>• Describe characteristics of the atmosphere, weather, and climate</li> <li>• Interpret factors used for prediction of weather patterns</li> <li>• Describe the role of solar energy, air, water, and temperature trends</li> </ul>
<b>Unit 3: The Waters</b> In this unit, you will learn about the water cycle and the processes involved in that cycle; watersheds and their importance; sea water; ocean currents; maps; and sea floor features.	HS-ESS2-1, HS-ESS2-2, HS-ESS2-5, HS-ESS3-1, HS-ESS3-4, HS-ESS3-6	<ul style="list-style-type: none"> <li>• Describe the water cycle</li> <li>• Differentiate the components and processes involved in the water cycle</li> </ul>