

Wyoming Department of Education Required Virtual Education Course Syllabus

Niobrara County School District # 1

Program Name	Wyoming Virtual Academy	Content Area	SC
Course ID	D-SCI-070V1-DYN	Grade Level	9-12
Course Name	Introduction to Renewable Technologies	# of Credits	0.5
SCED Code	18506G0.5011	Curriculum Type	K12 Inc

COURSE DESCRIPTION

Interested in transforming energy? With concerns about climate change and growing populations' effects on traditional energy supplies, scientists, governments, and societies are increasingly turning to renewable and innovative energy sources. In the Introduction to Renewable Technologies course, you'll learn all about the cutting-edge field of renewable energy and the exciting new technologies that are making it possible. You'll explore new ways of generating energy and storing that energy, from biofuels to high-capacity batteries and smart electrical grids. You'll also learn more about the environmental and social effects of renewable technologies and examine how people's energy decisions impact policies.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
HS-PS1-3	Plan and conduct an investigation to gather evidence to compare the structure of substances at the macroscopic scale to infer the strength of electrical forces between particles.
HS-PS1-4	Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
HS-PS1-6	Evaluate the design of a chemical system by changing conditions to produce increased amounts of products at equilibrium, and refine the design, as needed.
HS-PS1-7	Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.
HS-PS1-8	Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.
HS-PS2-1	Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
HS-PS2-5	Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.
HS-PS3-1	Create or apply a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

HS-PS3-2	Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects).
HS-PS3-3	Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
HS-PS3-4	Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system.
HS-PS3-5	Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.
HS-PS4-3	Evaluate evidence behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.
HS-PS4-5	Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.
HS-LS2-1	Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.
HS-LS2-2	Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.
HS-LS2-3	Construct an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions, and revise as needed.
HS-LS2-4	Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.
HS-LS2-5	Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.
HS-LS2-6	Evaluate the claims, evidence, and reasoning that the complex biotic and abiotic interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a modified ecosystem.
HS-LS2-7	Evaluate and assess impacts on the environment and biodiversity in order to refine or design a solution for detrimental impacts or enhancement for positive impacts.
HS-LS2-8	Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.
HS-ESS2-3	Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.
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-ESS2-6	Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.
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-ESS3-2	Evaluate competing design solutions for developing, managing, and using energy and mineral resources based on cost -benefit ratios.
HS-ESS3-3	Use computational tools to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.
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 impact s 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.
HS-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Unit 1: Introduction to Renewable Energy Technologies Lessons 1-5	HS-ESS3-1	<ul style="list-style-type: none"> Define renewable energy technologies Identify different kinds of renewable energy technologies Defend reasons for developing and using renewable energy technologies. Recount the history of renewable energy technologies. Describe where and how renewable energy is currently used globally

<p>Unit 1: Introduction to Renewable Energy Technologies Lesson 6 Text Questions</p>	<p>HS-ESS3-1</p>	<p>Answer text questions to demonstrate knowledge in unit.</p>
<p>Unit 1: Introduction to Renewable Energy Technologies Lesson 7 Lab</p>	<p>HS-ESS3-1 HS-ESS3-3</p>	<p>Complete a web journey to learn more about renewable energy technologies.</p>
<p>Unit 1: Introduction to Renewable Energy Technologies Lesson 8 Activity</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-ETS1-2 HS-ETS1-3</p>	<p>Do some research to find one renewable energy project where its overall success (financially, socially, or ability to create sustained energy) is still in question.</p> <p>Find a similar renewable energy project and list the troubles it has been experiencing.</p> <p>Propose a solution to the issue.</p> <p>Create a PowerPoint-type presentation with no more than 10 slides in which you provide information about the project, its successes and failures, and a proposed solution.</p>
<p>Unit 1: Introduction to Renewable Energy Technologies Lesson 9 Quiz Review</p>	<p>HS-ESS3-1</p>	<p>Review for unit quiz.</p>
<p>Unit 1: Introduction to Renewable Energy Technologies Lesson 10 Quiz</p>	<p>HS-ESS3-1</p>	<p>Demonstrate comprehension of topics taught in this Unit.</p>
<p>Unit 1: Introduction to Renewable Energy Technologies Lesson 11-12 Discussion</p>	<p>HS-ESS3-1 HS-ETS1-1 HS-ETS1-3</p>	<p>Answer the following discussion questions.</p> <ul style="list-style-type: none"> • In California, you can find the largest solar power plant, the largest geothermal energy plant, and the largest wind farm. In fact, California has been at the forefront of developing renewable energy technology for many years. Why do you think this is? What factors, beyond politics, influence this? • Do you think we should just tear down all the power plants that use nonrenewable energy technology so that we can start anew with

		renewable energy? Explain your answer.
Unit 1: Introduction to Renewable Energy Technologies Lesson 13 Podcast	HS-ESS3-1	Listen to a podcast about renewable energy technologies.
Unit 2: Climate Change and Energy Policies Lessons 1-5	HS-ESS2-4 HS-ESS2-6 HS-ESS3-1 HS-ESS3-4 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7	Discuss global climate change issues. Discuss global climate change and its impact on ecosystem biodiversity and carrying capacity. Describe how consumer habits influence climate change and energy policies. Evaluate climate change policies globally Create frameworks for energy evaluation, including economic sustainability and tradeoffs.
Unit 2: Climate Change and Energy Policies Lesson 6 Text Questions	HS-ESS2-4 HS-ESS2-6 HS-ESS3-1 HS-ESS3-4 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7	Answer text questions to demonstrate knowledge in unit.
Unit 2: Climate Change and Energy Policies Lesson 7 Lab	HS-ESS3-5 HS-ESS3-6	Complete a web journey to learn more about climate change and energy policies.
Unit 2: Climate Change and Energy Policies Lesson 8 Activity	HS-ETS1-1 HS-ETS1-2	Design a short-term, medium-term, and long-term plan to track and change your own habits to reduce the amount of greenhouse gases your daily actions emit into the atmosphere.
Unit 2: Climate Change and Energy Policies Lesson 9 Quiz Review	HS-ESS2-4 HS-ESS2-6 HS-ESS3-1 HS-ESS3-4 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7	Review for unit quiz.
Unit 2: Climate Change and Energy Policies Lesson 10 Quiz	HS-ESS2-4 HS-ESS2-6 HS-ESS3-1 HS-ESS3-4 HS-LS2-1 HS-LS2-2	Demonstrate comprehension of topics taught in this Unit.

	<p>HS-LS2-6 HS-LS2-7</p>	
<p>Unit 2: Climate Change and Energy Policies Lesson 11-12 Discussion</p>	<p>HS-ESS3-3 HS-ETS1-3</p>	<p>Answer the following discussion questions.</p> <ul style="list-style-type: none"> • What is a symbiotic relationship? How can you relate this concept to how humans affect the earth and vice versa? • Why do you think it is difficult for government officials to work together to reduce global warming all over the world?
<p>Unit 2: Climate Change and Energy Policies Lesson 13 Podcast</p>	<p>HS-ESS2-4 HS-ESS2-6 HS-ESS3-1 HS-ESS3-4 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7</p>	<p>Listen to a podcast about climate change and energy policies.</p>
<p>Unit 3: The Electric Power System and Fossil Fuels Lessons 1-5</p>	<p>HS-ESS3-1 HS-ESS3-2 HS-PS2-5 HS-PS3-5</p>	<p>Discuss the history of the electric power system and fossil fuels.</p> <p>Evaluate the current electric power system and use of fossil fuels</p> <p>Investigate the advantages and disadvantages of the electric power system and use of fossil fuels.</p> <p>Examine new technologies and changes in the use of fossil fuels and the electric power system.</p> <p>Learn about Faraday’s electromagnet.</p> <p>Attend ClassConnect to conduct experiment on electromagnet.</p>
<p>Unit 3: The Electric Power System and Fossil Fuels Lesson 6 Text Questions</p>	<p>HS-ESS3-1 HS-ESS3-2 HS-PS2-5 HS-PS3-5</p>	<p>Answer text questions to demonstrate knowledge in unit.</p>
<p>Unit 3: The Electric Power System and Fossil Fuels Lesson 7 Lab</p>	<p>HS-ESS3-1 HS-ESS3-2 HS-PS2-5 HS-PS3-5</p>	<p>Complete a web journey to learn more about the electric power system and fossil fuels.</p>

<p>Unit 3: The Electric Power System and Fossil Fuels Lesson 8 Activity</p>	<p>HS-PS3-3</p>	<p>Learn how you get your electricity. Start by reviewing your electric bill. You can also review the utility company’s website. You may have to call someone at the utility company to answer some questions as well as review other sources online.</p>
<p>Unit 3: The Electric Power System and Fossil Fuels Lesson 9 Quiz Review</p>	<p>HS-ESS3-1 HS-ESS3-2 HS-PS2-5 HS-PS3-5</p>	<p>Review for unit quiz.</p>
<p>Unit 3: The Electric Power System and Fossil Fuels Lesson 10 Quiz</p>	<p>HS-ESS3-1 HS-ESS3-2 HS-PS2-5 HS-PS3-5</p>	<p>Demonstrate comprehension of topics taught in this Unit.</p>
<p>Unit 3: The Electric Power System and Fossil Fuels Lesson 11-12 Discussion</p>	<p>HS-ESS3-1 HS-ESS3-2 HS-ESS3-4 HS-ETS1-3</p>	<p>Answer the following discussion questions.</p> <ul style="list-style-type: none"> • Describe one creative way of generating energy that interests you most. Where do you think it would work well? • Would you want a wind turbine farm near your home? Why or why not?
<p>Unit 3: The Electric Power System and Fossil Fuels Lesson 13 Podcast</p>	<p>HS-ESS3-1 HS-ESS3-2 HS-PS2-5 HS-PS3-5</p>	<p>Listen to a podcast about the electric power system and fossil fuels.</p>
<p>Unit 4: Nuclear Power Lessons 1-5</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-ETS1-1 HS-ETS1-3 HS-PS1-3 HS-PS1-4 HS-PS1-6 HS-PS1-7 HS-PS1-8 HS-PS3-2 HS-PS3-3</p>	<p>Define nuclear energy and discuss how it is harnessed.</p> <p>Describe nuclear fission.</p> <p>Discuss the advantages and disadvantages of nuclear power.</p> <p>Explain the societal debate over nuclear power.</p> <p>Come to ClassConnect to develop a device that converts one form of energy into another.</p>
<p>Unit 4: Nuclear Power Lesson 6 Text Questions</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-ETS1-1 HS-ETS1-3 HS-PS1-3</p>	<p>Answer text questions to demonstrate knowledge in unit.</p>

	<p>HS-PS1-4 HS-PS1-6 HS-PS1-7 HS-PS1-8 HS-PS3-2 HS-PS3-3</p>	
<p>Unit 4: Nuclear Power Lesson 7 Lab</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-ETS1-1 HS-ETS1-3 HS-PS1-3 HS-PS1-4 HS-PS1-6 HS-PS1-7 HS-PS1-8 HS-PS3-2 HS-PS3-3</p>	<p>Complete a web journey to learn more about nuclear power</p>
<p>Unit 4: Nuclear Power Lesson 8 Activity</p>	<p>HS-PS3-3</p>	<p>Learn how a light-water reactor works by drawing and labeling a diagram. You can either draw each item in your diagram by hand or use the drawing tools from another application, such as Word or PowerPoint. You may copy and paste the parts from a website; however, you must provide your own labels.</p>
<p>Unit 4: Nuclear Power Lesson 9 Quiz Review</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-ETS1-1 HS-ETS1-3 HS-PS1-3 HS-PS1-4 HS-PS1-6 HS-PS1-7 HS-PS1-8 HS-PS3-2 HS-PS3-3</p>	<p>Review for unit quiz.</p>
<p>Unit 4: Nuclear Power Lesson 10 Quiz</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-ETS1-1 HS-ETS1-3 HS-PS1-3 HS-PS1-4 HS-PS1-6 HS-PS1-7 HS-PS1-8 HS-PS3-2 HS-PS3-3</p>	<p>Demonstrate comprehension of topics taught in this Unit.</p>
<p>Unit 4: Nuclear Power Lesson 11-12 Discussion</p>	<p>HS-ESS3-2 HS-ESS3-3 HS-ETS1-1</p>	<p>Answer the following discussion questions.</p>

	<p>HS-ETS1-3</p>	<ul style="list-style-type: none"> • Explain whether or not you believe scientists have a responsibility to the world when inventing things? Should the scientists on the Manhattan Project be held responsible for the nuclear bomb? Why or why not? • How do you respond to the following statement: The use of nuclear energy is like giving a key to terrorists to build nuclear bombs.
<p>Unit 4: Nuclear Power Lesson 13 Podcast</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-ETS1-1 HS-ETS1-3 HS-PS1-3 HS-PS1-4 HS-PS1-6 HS-PS1-7 HS-PS1-8 HS-PS3-2 HS-PS3-3</p>	<p>Listen to a podcast about nuclear power.</p>
<p>Unit 5: Solar Energy Lessons 1-5</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-PS3-2 HS-PS3-4 HS-PS4-3 HS-PS4-5</p>	<p>Define solar energy and discuss how it is harnessed.</p> <p>Explore the idea that light travels in waves and how we use that to harness solar energy</p> <p>Compare passive solar and active solar energy.</p> <p>Examine photovoltaic cells and solar thermal systems.</p> <p>Outline the advantages and disadvantages of solar energy.</p> <p>Attend ClassConnect to conduct an experiment of passive energy transfer in a closed system.</p>
<p>Unit 5: Solar Energy Lesson 6 Text Questions</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-PS3-2 HS-PS3-4 HS-PS4-3 HS-PS4-5</p>	<p>Answer text questions to demonstrate knowledge in unit.</p>

<p>Unit 5: Solar Energy Lesson 7 Lab</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-PS3-2 HS-PS3-4 HS-PS4-3 HS-PS4-5</p>	<p>Complete a web journey to learn more about solar energy.</p>
<p>Unit 5: Solar Energy Lesson 8 Activity</p>	<p>HS-PS3-2 HS-PS3-4 HS-PS4-3 HS-PS4-5</p>	<p>Learn how photovoltaic cells and solar thermal plants work by drawing and labeling a diagram of each. You can either draw each by hand or use the drawing tools from an application such as Word or PowerPoint. You may copy and paste the parts from a website; however, you must provide your own labels.</p>
<p>Unit 5: Solar Energy Lesson 9 Quiz Review</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-PS3-2 HS-PS3-4 HS-PS4-3 HS-PS4-5</p>	<p>Review for unit quiz.</p>
<p>Unit 5: Solar Energy Lesson 10 Quiz</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-PS3-2 HS-PS3-4 HS-PS4-3 HS-PS4-5</p>	<p>Demonstrate comprehension of topics taught in this Unit.</p>
<p>Unit 5: Solar Energy Lesson 11-12 Discussion</p>	<p>HS-ETS1-1 HS-ETS1-3</p>	<p>Answer the following discussion questions.</p> <ul style="list-style-type: none"> • Do you think our knowledge of solar power is advanced enough to make large investments in power plants? Explain. • Do you believe we've come to depend too much on electricity for our heating and cooling needs? Why or why not?
<p>Unit 5: Solar Energy Lesson 13 Podcast</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-PS3-2 HS-PS3-4 HS-PS4-3 HS-PS4-5</p>	<p>Listen to a podcast about solar energy.</p>
<p>Unit 6: Wind Energy Lessons 1-5</p>	<p>HS-ESS3-2 HS-ESS3-3 HS-ESS4-3 HS-LS2-2 HS-LS2-6 HS-LS2-7</p>	<p>Describe wind energy and how it has been used historically.</p> <p>Consider environmental factors that affect harnessing wind energy.</p>

	<p>HS-LS2-8 HS-PS2-1 HS-PS3-1 HS-PS3-3</p>	<p>Calculate wind power and the efficiency of windmills.</p> <p>Discuss kinetic energy.</p> <p>Evaluate the advantages of wind energy.</p>
<p>Unit 6: Wind Energy Lesson 6 Text Questions</p>	<p>HS-ESS3-2 HS-ESS3-3 HS-ESS4-3 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-LS2-8 HS-PS2-1 HS-PS3-1 HS-PS3-3</p>	<p>Answer text questions to demonstrate knowledge in unit.</p>
<p>Unit 6: Wind Energy Lesson 7 Lab</p>	<p>HS-ESS3-2 HS-ESS3-3 HS-ESS4-3 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-LS2-8 HS-PS2-1 HS-PS3-1 HS-PS3-3</p>	<p>Complete a web journey to learn more about wind energy.</p>
<p>Unit 6: Wind Energy Lesson 8 Activity</p>	<p>HS-ETS1-1 HS-ETS1-3</p>	<p>Learn about the debate regarding wind energy in the areas considered the most abundant in wind, the “Saudi Arabia of Wind Power.” Create a PowerPoint-like presentation with 10 to 15 slides.</p>
<p>Unit 6: Wind Energy Lesson 9 Quiz Review</p>	<p>HS-ESS3-2 HS-ESS3-3 HS-ESS4-3 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-LS2-8 HS-PS2-1 HS-PS3-1 HS-PS3-3</p>	<p>Review for unit quiz.</p>

<p>Unit 6: Wind Energy Lesson 10 Quiz</p>	<p>HS-ESS3-2 HS-ESS3-3 HS-ESS4-3 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-LS2-8 HS-PS2-1 HS-PS3-1 HS-PS3-3</p>	<p>Demonstrate comprehension of topics taught in this Unit.</p>
<p>Unit 6: Wind Energy Lesson 11-12 Discussion</p>	<p>HS-ETS1-1 HS-ETS1-3</p>	<p>Answer the following discussion questions.</p> <ul style="list-style-type: none"> • Do you think wind power has a future in replacing fossil fuels? Do you think it's possible to use too much wind? Explain. • Do you think it's a valid criticism that wind turbines disrupt the beauty of the countryside? After all, power lines do as well. Explain your position.
<p>Unit 6: Wind Energy Lesson 13 Podcast</p>	<p>HS-ESS3-2 HS-ESS3-3 HS-ESS4-3 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-LS2-8 HS-PS2-1 HS-PS3-1 HS-PS3-3</p>	<p>Listen to a podcast about wind energy.</p>
<p>Unit 7: Biomass and Biofuels Lessons 1-5</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-LS2-3 HS-LS2-4 HS-LS2-5</p>	<p>Describe the major sources of biomass.</p> <p>Create a life cycle analysis for biomass conversion.</p> <p>Examine different biofuel options.</p> <p>Outline the advantages and disadvantages for biomass and biofuel energy.</p>
<p>Unit 7: Biomass and Biofuels Lesson 6 Text Questions</p>	<p>HS-ESS3-2 HS-ESS3-4</p>	<p>Answer text questions to demonstrate knowledge in unit.</p>

	<p>HS-LS2-3 HS-LS2-4 HS-LS2-5</p>	
<p>Unit 7: Biomass and Biofuels Lesson 7 Lab</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-LS2-3 HS-LS2-4 HS-LS2-5</p>	<p>Complete a web journey to learn more about biomass and biofuels.</p>
<p>Unit 7: Biomass and Biofuels Lesson 8 Activity</p>	<p>HS-ESS3-2 HS-ESS3-4</p>	<p>Learn about how biomass plantations are arranged and to draw and label a diagram of a biomass plantation. You can either draw each by hand or use the drawing tools from applications such as Word or PowerPoint. You may copy and paste the parts from a website; however, you must provide your own labels. Be sure to label at least five parts of the plantation.</p>
<p>Unit 7: Biomass and Biofuels Lesson 9 Quiz Review</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-LS2-3 HS-LS2-4 HS-LS2-5</p>	<p>Review for unit quiz.</p>
<p>Unit 7: Biomass and Biofuels Lesson 10 Quiz</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-LS2-3 HS-LS2-4 HS-LS2-5</p>	<p>Demonstrate comprehension of topics taught in this Unit.</p>
<p>Unit 7: Biomass and Biofuels Lesson 11-12 Discussion</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-LS2-3 HS-LS2-4 HS-LS2-5</p>	<p>Answer the following discussion questions.</p> <ul style="list-style-type: none"> • Do you believe “slash-and-char” methods solve the problem of clear-cutting forests? Explain. • Do you think that biomass energy is just sacrificing one resource (food) for another (energy)? Explain.
<p>Unit 7: Biomass and Biofuels Lesson 13 Podcast</p>	<p>HS-ESS3-2 HS-ESS3-4 HS-LS2-3 HS-LS2-4 HS-LS2-5</p>	<p>Listen to a podcast about biomass and biofuels.</p>
<p>Unit 8: Geothermal and Hydroelectric Energy Lessons 1-5</p>	<p>HS-ESS2-3 HS-ESS2-5 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4 HS-LS2-1</p>	<p>Describe types of geothermal energy.</p> <p>Discuss how hydroelectric energy is created.</p>

	<p>HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-PS3-1 HS-PS3-3</p>	<p>Examine environmental factors that influence these energy types.</p> <p>Evaluate the advantages and disadvantages of geothermal and hydroelectric energy.</p>
<p>Unit 8: Geothermal and Hydroelectric Energy Lesson 6 Text Questions</p>	<p>HS-ESS2-3 HS-ESS2-5 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-PS3-1 HS-PS3-3</p>	<p>Answer text questions to demonstrate knowledge in unit.</p>
<p>Unit 8: Geothermal and Hydroelectric Energy Lesson 7 Lab</p>	<p>HS-ESS2-3 HS-ESS2-5 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-PS3-1 HS-PS3-3</p>	<p>Complete a web journey to learn more about geothermal and hydroelectric energy.</p>
<p>Unit 8: Geothermal and Hydroelectric Energy Lesson 8 Activity</p>	<p>HS-ETS1-2</p>	<p>Put yourself in the shoes of a person whose boss has asked you to recommend whether to build a geothermal or hydropower plant near your community.</p>
<p>Unit 8: Geothermal and Hydroelectric Energy Lesson 9 Quiz Review</p>	<p>HS-ESS2-3 HS-ESS2-5 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-PS3-1 HS-PS3-3</p>	<p>Review for unit quiz.</p>
<p>Unit 8: Geothermal and Hydroelectric Energy Lesson 10 Quiz</p>	<p>HS-ESS2-3 HS-ESS2-5 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4 HS-LS2-1 HS-LS2-2</p>	<p>Demonstrate comprehension of topics taught in this Unit.</p>

	<p>HS-LS2-6 HS-LS2-7 HS-PS3-1 HS-PS3-3</p>	
<p>Unit 8: Geothermal and Hydroelectric Energy Lesson 11-12 Discussion</p>	<p>HS-ETS1-3 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7</p>	<p>Answer the following discussion questions.</p> <ul style="list-style-type: none"> • Would you rather live near a hydroelectric or geothermal power plant, knowing the damage and risks they can cause to surrounding communities? Why or why not? • Put yourself in the position of American citizens in 1935 when President Roosevelt opened the Hoover Dam. How would you have reacted to the taxpayer money spent in the midst of the Great Depression?
<p>Unit 8: Geothermal and Hydroelectric Energy Lesson 13 Podcast</p>	<p>HS-ESS2-3 HS-ESS2-5 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4 HS-LS2-1 HS-LS2-2 HS-LS2-6 HS-LS2-7 HS-PS3-1 HS-PS3-3</p>	<p>Listen to a podcast about geothermal and hydroelectric energy.</p>