Science Unit 6: Earth and Human Activity (Grade 4)

Content Area: **Science**
Course(s): **Science 4**
Time Period: **Marking Period 3**
Length: **6-8 weeks**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

SEL.PK-12.2.1	Understand and practice strategies for managing one's own emotions, thoughts, and behaviors
SEL.PK-12.2.2	Recognize the skills needed to establish and achieve personal and educational goals
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals
SEL.PK-12.3.1	Recognize and identify the thoughts, feelings, and perspectives of others
SEL.PK-12.3.2	Demonstrate and awareness of the differences among individuals, groups, and others' cultural backgrounds
SEL.PK-12.3.3	Demonstrate an understanding of the need for mutual respect when viewpoints differ
SEL.PK-12.3.4	Demonstrate an awareness of the expectations for social interactions in a variety of settings
SEL.PK-12.4.1	Develop, implement and model effective problem-solving, and critical thinking skills
SEL.PK-12.4.2	Identify the consequences associated with one's actions in order to make constructive choices
SEL.PK-12.4.3	Evaluate personal, ethical, safety, and civic impact of decisions
SEL.PK-12.5.1	Establish and maintain healthy relationships
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others
SEL.PK-12.5.4	Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways
SEL.PK-12.5.5	Identify who, when, where, or how to seek help for oneself or others when needed
CAEP.9.2.4.A.1	Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
CAEP.9.2.4.A.2	Identify various life roles and civic and work - related activities in the school, home, and community.
CAEP.9.2.4.A.3	Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
4-ESS3-1	Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment.
4-ESS3-2	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.
4-ESS3-1.2.1	Cause and effect relationships are routinely identified and used to explain change.
4-ESS3-2.2.1	students routinely identify and test causal relationships and use these relationships to explain change. They understand events that occur together with regularity might or might not signify a cause and effect relationship.

4-ESS3-2.6.1	Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design solution.
4-ESS3-1.8.1	Obtain and combine information from books and other reliable media to explain phenomena.
4-ESS3-1.ESS3.A.1	Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not.
4-ESS3-2.ESS3.B.1	A variety of hazards result from natural processes (e.g., earthquakes, tsunamis, volcanic eruptions). Humans cannot eliminate the hazards but can take steps to reduce their impacts.
4-ESS3-2.ETS1.B.1	Testing a solution involves investigating how well it performs under a range of likely conditions.

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- How can both renewable and nonrenewable resources be used for energy?
- How can humans work to reduce the impact of land-based hazards?
- How can humans work to reduce the impact of water-based hazards?
- What are nonrenewable resources?
- What are renewable resources?
- What are the positive and negative impacts of using the various types of natural resources for energy?
- What is a natural hazard? What causes natural hazards? What are the effects on the land and people?

Core Ideas

Please add your Enduring Understandings by clicking on the Lists tab above.

- Knowledge of relevant scientific concepts and research findings is important in engineering.
- A natural hazard is an earth process that threatens to harm people and property.
- A nonrenewable resource is a resource that once used cannot be replaced in a reasonable amount of time.
- A renewable resource is a resource that can be replaced within a reasonable amount of time.
- A variety of hazards result from natural processes (e.g., earthquakes, tsunamis, volcanic eruptions). Humans cannot eliminate the hazards but can take steps to reduce their impacts.
- All energy sources have advantages and drawbacks.
- Cause and effect relationships are routinely identified, tested, and used to explain change.
- Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not.
- Engineers improve existing technologies or develop new ones to increase their benefits, to decrease known risks, and to meet societal demands.
- Natural resources are materials found in nature that people and other living things use.

- Testing a solution involves investigating how well it performs under a range of likely conditions.

Content

Students will be able to:

- distinguish between renewable and nonrenewable resources
- identify kinds of fuel that are used across the globe
- discuss ideas for alternative forms of energy
- determine the impact energy use has on the environment
- identify types of natural hazards and their causes
- determine ways people can help prevent damage from natural hazards

Resources

- HMH Science Dimensions textbook
- ActivBoard flipcharts
- Labs Activities
- United Streaming videos
- Brainpop
- Newsela