Grade 4

3.3.4.D Earth and Space Sciences: Earth and Human Activity

Students who demonstrate understanding can *obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.*

Clarifying Statement: Examples of renewable energy resources could include wind energy, water behind dams, and sunlight; non-renewable energy resources are fossil fuels and fissile materials. Examples of environmental effects could include loss of habitat due to dams, loss of habitat due to mining, and air pollution from burning of fossil fuels.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluate the merit and accuracy of ideas and methods. • Obtain and combine information from books and other reliable media to explain phenomena.	**ESS3.A: Natural Resources** • 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.	**Cause and Effect** • Cause and effect relationships are routinely identified and used to explain change. ***Connections to Engineering, Technology, and Applications of Science*** **Interdependence of Science, Engineering, and Technology** • Knowledge of relevant scientific concepts and research findings is important in engineering. **Influence of Engineering, Technology, and Science on Society and the Natural World** • Over time, people's needs and wants change, as do their demands for new and improved technologies.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to wood, coal, methane, minerals, oil, gasses, wind farms, hydroelectric and nuclear power, and other geologic resources of Pennsylvania.

PA Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.04.02.01.b: Analyze natural resources trends and technologies and explain how they impact AFNR systems (e.g., climate change, green technologies, water resources, etc.).

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.C. Collecting information: Learners locate and collect information about the environment and environmental topics. K-4 Strand 2.3.B. Resource distribution and consumption: Learners describe ways people harvest, re-distribute, and use natural resources.
PA Core Standards: ELA	CC.1.4.4.S: Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade level reading standards for literature and informational texts. CC.1.4.4.V: Conduct short research projects that build knowledge through investigation of different aspects of a topic. CC.1.4.4.W: Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
PA Core Standards and Practices: Math	MP.1: Make sense of problems and persevere in solving them. MP.2: Reason abstractly and quantitatively. CC.2.2.4.A.1: Represent and solve problems involving the four operations. CC.2.4.4.A.2: Translate information from one type of data display to another.
PA Standards: Social Studies	7.4.4.B: Identify the effect of people on the physical systems within a community.
Educational Technology (ISTE)	1.3. Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
Technology and Engineering (ITEEA)	STEL-4F: Describe the helpful and harmful effects of technology.