Pennsylvania Science, Environment, Ecology, Technology and Engineering (K-5)

Grade K

Adopted 2022

Earth and Space Sciences

Earth and Human Activity

1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. ESH.K.1
2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. ESH.K.2
3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. ESH.K.3

Earth's Systems

1. Use and share observations of local weather conditions to describe patterns over time. ESS.K.1
2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. ESS.K.2

Life Science

From Molecules to Organisms: Structures and Processes

1. Use observations to describe patterns of what plants and animals (including humans) need to survive. LSM.K.1

Heredity: Inheritance and Variation of Traits

Physical Science

Motion and Stability: Forces and Interactions

1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. PSM.K.1
2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. PSM.K.2

Energy

1. Make observations to determine the effect of sunlight on Earth's surface. PSE.K.1
2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. PSE.K.2

Environmental Literacy and Sustainability

Agricultural and Environmental Systems and Resources

1. Examine how people from different cultures and communities, including one's own, interact and express their beliefs about nature. ELA.K2.1
2. Categorize ways people harvest, re-distribute, and use natural resources. ELA.K2.2

Environmental Literacy Skills

1. Explain ways that places differ in their physical characteristics, their meaning, and their value and/or importance. ELE.K2.1
2. Plan and carry out an investigation to address an issue in their local environment and community. ELE.K2.2

Technology and Engineering

Applying, Maintaining, and Assessing Technological Products and Systems

1. Analyze how things work. TEA.K2.1
2. Identify and use everyday symbols. TEA.K2.2
3. Describe qualities of everyday products. TEA.K2.3

Core Concepts of Technology and Engineering

1. Illustrate how systems have parts or components that work together to accomplish a goal. TEC.K2.1
2. Safely use tools to complete tasks. TEC.K2.2
3. Explain that materials are selected for use because they possess desirable properties and characteristics. TEC.K2.3
4. Develop a plan in order to complete a task. TEC.K2.4
5. Collaborate effectively as a member of a team. TEC.K2.5

Design in Technology and Engineering Education

1. Apply design concepts, principles, and processes through play and exploration. TED.K2.1
2. Demonstrate that designs have requirements. TED.K2.2
3. Explain that design is a response to wants and needs. TED.K2.3
4. Discuss that all designs have different characteristics that can be described. TED.K2.4
5. Illustrate that there are different solutions to a design and that none are perfect. TED.K2.5
6. Demonstrate essential skills of the engineering design process. TED.K2.6
7. Apply skills necessary for making in design. TED.K2.7

History of Technology

1. Discuss how the way people live and work has changed throughout history because of technology. TEH.K2.1

Impacts of Technology

1. Explain ways that technology helps with everyday tasks. TEI.K2.1
2. Illustrate helpful and harmful effects of technology. TEI.K2.2
3. Compare simple technologies to evaluate their impacts. TEI.K2.3
4. Select ways to reduce, reuse, and recycle resources in daily life. TEI.K2.4
5. Design new technologies that could improve their daily lives. TEI.K2.5

Influence of Society on Technological Development

1. Explain the needs and wants of individuals and societies. TES.K2.1
2. Explore how technologies are developed to meet individual and societal needs and wants. TES.K2.2
3. Investigate the use of technologies in the home and community. TES.K2.3

Integration of Knowledge, Technologies, and Practices

1. Apply concepts and skills from technology and engineering activities that reinforce concepts and skills across multiple content areas. TEK.K2.1
2. Draw connections between technology and human experiences. TEK.K2.2

Nature and Characteristics of Technology and Engineering

1. Compare the natural world and human-made world. TEN.K2.1
2. Explain the tools and techniques that people use to help them do things. TEN.K2.2
3. Demonstrate that creating can be done by anyone. TEN.K2.3
4. Discuss the roles of scientists, engineers, technologists and others who work with technology. TEN.K2.4