Pennsylvania
Science, Technology & Engineering and Environmental Literacy & Sustainability Standards (STEEL)

Grade K

Adopted 2022

Life Science 3.1

Structure and Function

na1. Not applicable at this level. 3.1.K.NA1

Growth and Development of Organisms

na2. Not applicable at this level. 3.1.K.NA2

Organization for Matter and Energy Flow in Organisms

A. Use observations to describe patterns of what plants and animals (including humans) need to survive. 3.1.K.A

Information Processing

na3. Not applicable at this level. 3.1.K.NA3

Interdependent Relationships in Ecosystems

na4. Not applicable at this level. 3.1.K.NA4

Cycles of Matter and Energy Transfer in Ecosystems

na5. Not applicable at this level. 3.1.K.NA5

Ecosystem Dynamics, Functioning, and Resilience

na6. Not applicable at this level. 3.1.K.NA6

Social Interactions and Group Behavior

na7. Not applicable at this level. 3.1.K.NA7

Inheritance of Traits

na8. Not applicable at this level. 3.1.K.NA8

Variation of Traits

na9. Not applicable at this level. 3.1.K.NA9

Evidence of Common Ancestry and Diversity

na10. Not applicable at this level. 3.1.K.NA10

Natural Selection

na11. Not applicable at this level. 3.1.K.NA11

Adaptation

na12. Not applicable at this level. 3.1.K.NA12

Biodiversity and Humans

na13. Not applicable at this level. 3.1.K.NA13

Physical Science 3.2

Structure and Properties of Matter

na1. Not applicable at this level. 3.2.K.NA1

Chemical Reactions

na2. Not applicable at this level. 3.2.K.NA2

Nuclear Processes

na3. Not applicable at this level. 3.2.K.NA3

Forces and Motion

A. 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. 3.2.K.A

Types of Interactions

B. 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. 3.2.K.B

Definitions of Energy

na4. Not applicable at this level. 3.2.K.NA4

Conservation of Energy and Energy Transfer

C. Make observations to determine the effect of sunlight on Earth's surface. 3.2.K.C

D. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. 3.2.K.D

Relationship Between Energy and Forces

na5. Not applicable at this level. 3.2.K.NA5

Energy in Chemical Processes and Everyday Life

na6. Not applicable at this level. 3.2.K.NA6

Wave Properties

na7. Not applicable at this level. 3.2.K.NA7

Electromagnetic Radiation

na8. Not applicable at this level. 3.2.K.NA8

Information Technologies and Instrumentation

na9. Not applicable at this level. 3.2.K.NA9

Earth and Space Science 3.3

The Universe and Its Stars

na1. Not applicable at this level. 3.3.K.NA1

Earth and the Solar System

na2. Not applicable at this level. 3.3.K.NA2

The History of Planet Earth

na3. Not applicable at this level. 3.3.K.NA3

Earth Materials and Systems

na4. Not applicable at this level. 3.3.K.NA4

Plate Tectonics and Large-Scale System Interactions

na5. Not applicable at this level. 3.3.K.NA5

The Roles of Water in Earth's Surface Processes

na6. Not applicable at this level. 3.3.K.NA6

Weather and Climate

A. Use and share observations of local weather conditions to describe patterns over time. 3.3.K.A

Biogeology

B. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. 3.3.K.B

Natural Resources

C. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. 3.3.K.C

Natural Hazards

D. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. 3.3.K.D

Human Impact on Earth Systems

E. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. 3.3.K.E

Environmental Literacy & Sustainability 3.4

Agricultural Systems

A. Categorize ways people harvest, redistribute, and use natural resources. 3.4.K-2.A

Environment and Society

B. Examine how people from different cultures and communities, including one's own, interact and express their beliefs about nature. 3.4.K-2.B

Watersheds and Wetlands

na1. Refer to other standards in this document to build a learning progression. 3.4.K-2.NA1

Investigating Environmental Issues

na2. Refer to other standards in this document to build a learning progression. 3.4.K-2.NA2

Environmental Experiences

C. Explain ways that places differ in their physical characteristics, their meaning, and their value and/or importance. 3.4.K-2.C

Evaluating Solutions

na3. Refer to other standards in this document to build a learning progression. 3.4.K-2.NA3

Environmental Sustainability

D. Plan and carry out an investigation to address an issue in the local environment and community. 3.4.K-2.D

Environmental Stewardship

na4. Refer to other standards in this document to build a learning progression. 3.4.K-2.NA4

Environmental Justice

na5. Refer to other standards in this document to build a learning progression. 3.4.K-2.NA5

Technology & Engineering 3.5

Applying, Maintaining, and Assessing Technological Products and Systems

A. Identify and use everyday symbols. 3.5.K-2.A

B. Describe qualities of everyday products. 3.5.K-2.B

C. Explain ways that technology helps with everyday tasks. 3.5.K-2.C

D. Select ways to reduce, reuse, and recycle resources in daily life. 3.5.K-2.D

E. Illustrate helpful and harmful effects of technology. 3.5.K-2.E

F. Investigate the use of technologies in the home and community. 3.5.K-2.F

G. Explain the tools and techniques that people use to help them do things. 3.5.K-2.G

H. Explain the needs and wants of individuals and societies. 3.5.K-2.H

I. Compare simple technologies to evaluate their impacts. 3.5.K-2.I

J. Design new technologies that could improve their daily lives. 3.5.K-2.J

K. Safely use tools to complete tasks. 3.5.K-2.K

L. Explore how technologies are developed to meet individual and societal needs and wants. 3.5.K-2.L

Design and Design Thinking in Technology and Engineering Education

M. Demonstrate essential skills of the engineering design process. 3.5.K-2.M

N. Analyze how things work. 3.5.K-2.N

O. Illustrate that there are different solutions to a design and that none are perfect. 3.5.K-2.O

P. Discuss that all designs have different characteristics that can be described. 3.5.K-2.P

Q. Apply skills necessary for making in design. 3.5.K-2.Q

R. Draw connections between technology and human experience 3.5.K-2.R

S. Apply design concepts, principles, and processes through play and exploration 3.5.K-2.S

T. Demonstrate that designs have requirements. 3.5.K-2.T

U. Explain that design is a response to wants and needs 3.5.K-2.U

Integration of Knowledge, Technologies, and Practices

V. Explain that materials are selected for use because they possess desirable properties and characteristics. 3.5.K-2.V

W. Apply concepts and skills from technology and engineering activities that reinforce concepts and skills across multiple areas. 3.5.K-2.W

X. Develop a plan in order to complete a task. 3.5.K-2.X

Nature and Characteristics of Technology and Engineering

Y. Discuss how the way people live and work has changed throughout history because of technology. 3.5.K-2.Y

Z. Illustrate how systems have parts or components that work together to accomplish a goal. 3.5.K-2.Z

AA. Demonstrate that creating can be done by anyone. 3.5.K-2.AA

BB. Compare the natural world and human-made world. 3.5.K-2.BB

CC. Discuss the roles of scientists, engineers, technologists, and others who work with technology. 3.5.K-2.CC

DD. Collaborate effectively as a member of a team. 3.5.K-2.DD