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

Grade 1

Adopted 2022

Life Science 3.1

Structure and Function

A. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. 3.1.1.A

Growth and Development of Organisms

B. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. 3.1.1.B

Organization for Matter and Energy Flow in Organisms

na1. Not applicable at this level. 3.1.1.NA1

Information Processing

na2. Not applicable at this level. 3.1.1.NA2

Interdependent Relationships in Ecosystems

na3. Not applicable at this level. 3.1.1.NA3

Cycles of Matter and Energy Transfer in Ecosystems

na4. Not applicable at this level. 3.1.1.NA4

Ecosystem Dynamics, Functioning, and Resilience

na5. Not applicable at this level. 3.1.1.NA5

Social Interactions and Group Behavior

na6. Not applicable at this level. 3.1.1.NA6

Inheritance of Traits

C. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. 3.1.1.C

Variation of Traits

a7. Not applicable at this level. 3.1.1.NA7

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vidence of Common Ancestry and Diversity

na8. Not applicable at this level. 3.1.1.NA8

Natural Selection

na9. Not applicable at this level. 3.1.1.NA9

Adaptation

na10. Not applicable at this level. 3.1.1.NA10

Biodiversity and Humans

na11. Not applicable at this level. 3.1.1.NA11

Physical Science 3.2

Structure and Properties of Matter

na1. Not applicable at this level. 3.2.1.NA1

Chemical Reactions

na2. Not applicable at this level. 3.2.1.NA2

Nuclear Processes

na3. Not applicable at this level. 3.2.1.NA3

Forces and Motion

na4. Not applicable at this level. 3.2.1.NA4

Types of Interactions

na5. Not applicable at this level. 3.2.1.NA5

Definitions of Energy

na6. Not applicable at this level. 3.2.1.NA6

Conservation of Energy and Energy Transfer

na7. Not applicable at this level. 3.2.1.NA7

Relationship Between Energy and Forces

na8. Not applicable at this level. 3.2.1.NA8

Energy in Chemical Processes and Everyday Life

na9. Not applicable at this level. 3.2.1.NA9

Wave Properties

A. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. 3.2.1.A

ectromagnetic Radiation

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B. Make observations to construct an evidence-based account that objects can be seen only when illuminated. 3.2.1.B

C. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. 3.2.1.C

Information Technologies and Instrumentation

D. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. 3.2.1.D

Earth and Space Science 3.3

The Universe and Its Stars

A. Use observations of the sun, moon, and stars to describe patterns that can be predicted. 3.3.1.A

Earth and the Solar System

B. Make observations at different times of year to relate the amount of daylight to the time of year. 3.3.1.B

The History of Planet Earth

na1. Not applicable at this level. 3.3.1.NA1

Earth Materials and Systems

na2. Not applicable at this level. 3.3.1.NA2

Plate Tectonics and Large-Scale System Interactions

na3. Not applicable at this level. 3.3.1.NA3

The Roles of Water in Earth's Surface Processes

na4. Not applicable at this level. 3.3.1.NA4

Weather and Climate

na5. Not applicable at this level. 3.3.1.NA5

Biogeology

na6. Not applicable at this level. 3.3.1.NA6

Natural Resources

na7. Not applicable at this level. 3.3.1.NA7

Natural Hazards

na8. Not applicable at this level. 3.3.1.NA8

Human Impact on Earth Systems

na9. Not applicable at this level. 3.3.1.NA9

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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

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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