PLTW

Connections to Standards in PLTW Launch

PLTW curriculum is designed to empower students to thrive in an evolving world. As a part of the design process when developing and updating our curriculum, we focus on connections to a variety of standards. PLTW Launch modules connect to standards in the following:

Next Generation Science Standards

Motion and Stability: Forces and Interactions

K-PS2-1

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.

- ☐ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

K-PS2-2

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.

- ☐ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

Energy

K-PS3-1

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

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

K-PS3-2

Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

From Molecules to Organisms: Structures and Processes

K-LS1-1

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

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Next Generation Science Standards

Earth's Systems

K-ESS2-1

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

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

K-ESS2-2

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

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Earth and Human Activity

K-ESS3-1

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

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☐ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

K-ESS3-2

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

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

K-ESS3-3

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

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Next Generation Science Standards

Engineering Design

K-2-ETS1-1

Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

K-2-ETS1-2

Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

K-2-ETS1-3

Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Science and Engineering Practices

Asking Questions and Defining Problems

Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Developing and Using Models

Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Next Generation Science Standards

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Analyzing and Interpreting Data

Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Using Mathematics and Computational Thinking

Mathematical and computational thinking in K–2 builds on prior experience and progresses to recognizing that mathematics can be used to describe the natural and designed world(s).

- ☐ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Engaging in Argument from Evidence

Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s).

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Next Generation Science Standards

Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.

☑ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☑ Pushes and Pulls   ☑ Sunlight and Weather

☑ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

Disciplinary Core Ideas (K-2)

Physical Science

PS2.A Forces and Motion

• Pushes and pulls can have different strengths and directions.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☑ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

PS2.A Forces and Motion

• Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☑ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

PS2.B Types of Interactions

• When objects touch or collide, they push on one another and can change motion.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☑ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

PS3.B Conservation of Energy and Energy Transfer

• Sunlight warms Earth's surface.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☐ Pushes and Pulls   ☑ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

PS3.C Relationship Between Energy and Forces

• A bigger push or pull makes things speed up or slow down more quickly.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☑ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Next Generation Science Standards

Life Science

LS1.C Organization for Matter and Energy Flow in Organisms

• All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.

☐ Structure and Function: Exploring Design	☐ Animals and Algorithms
☐ Pushes and Pulls	☐ Sunlight and Weather
☐ Structure and Function: Human Body	☑ Living Things: Needs and Impacts

Earth and Space Science

ESS2.D Weather and Climate

• Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region and time. People measure these conditions to describe and record the weather and to notice patterns over time.

☐ Structure and Function: Exploring Design	☐ Animals and Algorithms
☐ Pushes and Pulls	☑ Sunlight and Weather
☐ Structure and Function: Human Body	☐ Living Things: Needs and Impacts

ESS2.E Biogeology

• Plants and animals can change their environment.

☐ Structure and Function: Exploring Design	☐ Animals and Algorithms
☐ Pushes and Pulls	☐ Sunlight and Weather
☐ Structure and Function: Human Body	☑ Living Things: Needs and Impacts

ESS3.A Natural Resources

• Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.

☐ Structure and Function: Exploring Design	☐ Animals and Algorithms
☐ Pushes and Pulls	☐ Sunlight and Weather
☐ Structure and Function: Human Body	☑ Living Things: Needs and Impacts

ESS3.B Natural Hazards

• Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events.

☐ Structure and Function: Exploring Design	☐ Animals and Algorithms
☐ Pushes and Pulls	☑ Sunlight and Weather
☐ Structure and Function: Human Body	☐ Living Things: Needs and Impacts

Next Generation Science Standards

ESS3.C Human Impacts on Earth Systems

• Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

Engineering, Technology, and Applications of Science

ETS1.A Defining and Delimiting Engineering Problems

• Asking questions, making observations, and gathering information are helpful in thinking about problems.

☑ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☑ Pushes and Pulls   ☑ Sunlight and Weather

☑ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

ETS1.B Developing Possible Solutions

• Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.

☑ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☑ Pushes and Pulls   ☑ Sunlight and Weather

☑ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

ETS1.C Optimizing the Design Solution

• Because there is always more than one possible solution to a problem, it is useful to compare and test designs.

☑ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☑ Pushes and Pulls   ☑ Sunlight and Weather

☑ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

Crosscutting Concepts (K-2)

Patterns – Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.

• Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☐ Pushes and Pulls   ☑ Sunlight and Weather

☐ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

Next Generation Science Standards

Cause and Effect: Mechanism and Prediction – Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.

• Events have causes that generate observable patterns.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms
☐ Pushes and Pulls   ☑ Sunlight and Weather
☐ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

• Simple tests can be designed to gather evidence to support or refute student ideas about causes.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms
☑ Pushes and Pulls   ☐ Sunlight and Weather
☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Systems and System Models – A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.

• Systems in the natural and designed world have parts that work together.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms
☐ Pushes and Pulls   ☐ Sunlight and Weather
☑ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

Structure and Function – The way an object is shaped or structured determines many of its properties and functions.

• The shape and stability of structures of natural and designed objects are related to their function(s).

☑ Structure and Function: Exploring Design   ☐ Animals and Algorithms
☐ Pushes and Pulls   ☐ Sunlight and Weather
☑ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Connections to Nature of Science (K-2)

Science Knowledge is Based on Empirical Evidence

• Scientists look for patterns and order when making observations about the world.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms
☐ Pushes and Pulls   ☑ Sunlight and Weather
☐ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

Next Generation Science Standards

Scientific Investigations Use a Variety of Methods

• Scientists use different ways to study the world.

☐ Structure and Function: Exploring Design	☐ Animals and Algorithms
☑ Pushes and Pulls	☑ Sunlight and Weather
☐ Structure and Function: Human Body	☐ Living Things: Needs and Impacts

Connections to Engineering, Technology, and Applications of Science (K-2)

Interdependence of Science, Engineering, and Technology

• People encounter questions about the natural world every day.

☐ Structure and Function: Exploring Design	☐ Animals and Algorithms
☐ Pushes and Pulls	☑ Sunlight and Weather
☐ Structure and Function: Human Body	☐ Living Things: Needs and Impacts

Influence of Engineering, Technology, and Science on Society and the Natural World

• People depend on various technologies in their lives; human life would be very different without technology.

☐ Structure and Function: Exploring Design	☐ Animals and Algorithms
☐ Pushes and Pulls	☑ Sunlight and Weather
☐ Structure and Function: Human Body	☐ Living Things: Needs and Impacts

Computer Science Teachers Association K-12 Computer Science

In Spring 2023 PLTW submitted all necessary documentation required by the Computer Science Teachers Association (CSTA) for a crosswalk review of our Launch and Gateway curricula by the CSTA Standards Review Team. While we anticipate approval and validation by CSTA, the review is pending.

Computing Systems

Devices

1A-CS-01

Select and operate appropriate software to perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Data and Analysis

Collection Visualization & Transformation

1A-DA-06
Collect and present the same data in various visual formats.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☐ Pushes and Pulls   ☑ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Inference & Models

1A-DA-07
Identify and describe patterns in data visualizations, such as charts or graphs, to make predictions.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☐ Pushes and Pulls   ☑ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Algorithms and Programming

Variables

1A-AP-09
Model the way programs store and manipulate data by using numbers or other symbols to represent information.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Computer Science Teachers Association K-12 Computer Science

Control

1A-AP-10

Develop programs with sequences and simple loops, to express ideas or address a problem.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Modularity

1A-AP-11

Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Program Development

1A-AP-12

Develop plans that describe a program's sequence of events, goals, and expected outcomes.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Program Development

1A-AP-14

Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Program Development

1A-AP-15

Using correct terminology, describe steps taken and choices made during the iterative process of program development.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Impacts of Computing

Social Interactions

1A-IC-17
Work respectfully and responsibly with others online.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Safety Law & Ethics

1A-IC-18
Keep login information private, and log off of devices appropriately.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Common Core State Standards English Language Arts - Kindergarten

Literature Standards

Key Ideas and Details

CCSS.ELA-LITERACY.RL.K.1
With prompting and support, ask and answer questions about key details in a text.

- ☑ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.RL.K.2
With prompting and support, retell familiar stories, including key details.

- ☑ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.RL.K.3
With prompting and support, identify characters, settings, and major events in a story.

- ☑ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.RL.K.10
Actively engage in group reading activities with purpose and understanding.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

Reading Standards for Informational Text

Key Ideas and Details

CCSS.ELA-LITERACY.RI.K.1
With prompting and support, ask and answer questions about key details in a text.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Common Core State Standards English Language Arts - Kindergarten

CCSS.ELA-LITERACY.RI.K.2
With prompting and support, identify the main topic and retell key details of a text.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Range of Reading and Level of Text Complexity

CCSS.ELA-LITERACY.RI.K.10
Actively engage in group reading activities with purpose and understanding.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

Language Arts Writing Standards

Text Types and Purposes

CCSS.ELA-LITERACY.W.K.2
Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

- ☐ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.W.K.3
Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

Production and Distribution of Writing

CCSS.ELA-LITERACY.W.K.6
With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

Common Core State Standards English Language Arts - Kindergarten

Research to Build and Present Knowledge

CCSS.ELA-LITERACY.W.K.7

Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☐ Pushes and Pulls   ☐ Sunlight and Weather

☐ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

Language Arts Speaking and Listening Standards

Comprehension and Collaboration

CCSS.ELA-LITERACY.SL.K.1

Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.

☑ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☑ Pushes and Pulls   ☑ Sunlight and Weather

☑ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.SL.K.1.a

Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).

☑ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☑ Pushes and Pulls   ☐ Sunlight and Weather

☑ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.SL.K.1.b

Continue a conversation through multiple exchanges.

☑ Structure and Function: Exploring Design   ☑ Animals and Algorithms

☑ Pushes and Pulls   ☐ Sunlight and Weather

☑ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.SL.K.2

Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms

☑ Pushes and Pulls   ☑ Sunlight and Weather

☐ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

Common Core State Standards English Language Arts - Kindergarten

CCSS.ELA-LITERACY.SL.K.3
Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms
☑ Pushes and Pulls   ☑ Sunlight and Weather
☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Presentation of Knowledge and Ideas

CCSS.ELA-LITERACY.SL.K.4
Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms
☑ Pushes and Pulls   ☐ Sunlight and Weather
☐ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.SL.K.5
Add drawings or other visual displays to descriptions as desired to provide additional detail.

☐ Structure and Function: Exploring Design   ☑ Animals and Algorithms
☑ Pushes and Pulls   ☑ Sunlight and Weather
☐ Structure and Function: Human Body   ☑ Living Things: Needs and Impacts

CCSS.ELA-LITERACY.SL.K.6
Speak audibly and express thoughts, feelings, and ideas clearly.

☐ Structure and Function: Exploring Design   ☐ Animals and Algorithms
☐ Pushes and Pulls   ☑ Sunlight and Weather
☐ Structure and Function: Human Body   ☐ Living Things: Needs and Impacts

Common Core State Standards Mathematics - Kindergarten

Counting and Cardinality

Know number names and the count sequence.

CCSS.MATH.CONTENT.K.CC.A.1
Count to 100 by ones and by tens.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☐ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

CCSS.MATH.CONTENT.K.CC.A.3
Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Count to tell the number of objects.

CCSS.MATH.CONTENT.K.CC.B.4
Understand the relationship between numbers and quantities; connect counting to cardinality.

- ☑ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

CCSS.MATH.CONTENT.K.CC.B.5
Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

- ☑ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☐ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Compare numbers.

CCSS.MATH.CONTENT.K.CC.C.6
Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

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Measurement and Data

Describe and compare measurable attributes.

CCSS.MATH.CONTENT.K.MD.A.2
Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

CCSS.MATH.CONTENT.K.MD.B.3
Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

- ☐ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

Geometry

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

CCSS.MATH.CONTENT.K.G.A.1
Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

- ☐ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

CCSS.MATH.CONTENT.K.G.A.2
Correctly name shapes regardless of their orientations or overall size.

- ☑ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☐ Structure and Function: Human Body
- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

Mathematical Practices

CCSS.MATH.PRACTICE.MP1
Make sense of problems and persevere in solving them.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body
- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

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CCSS.MATH.PRACTICE.MP2
Reason abstractly and quantitatively.

- ☑ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body

- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

CCSS.MATH.PRACTICE.MP3
Construct viable arguments and critique the reasoning of others.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body

- ☑ Animals and Algorithms
- ☑ Sunlight and Weather
- ☑ Living Things: Needs and Impacts

CCSS.MATH.PRACTICE.MP4
Model with mathematics.

- ☑ Structure and Function: Exploring Design
- ☐ Pushes and Pulls
- ☑ Structure and Function: Human Body

- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

CCSS.MATH.PRACTICE.MP5
Use appropriate tools strategically.

- ☑ Structure and Function: Exploring Design
- ☑ Pushes and Pulls
- ☑ Structure and Function: Human Body

- ☐ Animals and Algorithms
- ☐ Sunlight and Weather
- ☐ Living Things: Needs and Impacts

References

Computer Science Teachers Association. (2017). *CSTA K-12 Computer Science Standards, revised 2017.* http://www.csteachers.org/standards

National Governors Association Center for Best Practices, & Council of Chief State School Officers. (2010). *Common Core State Standards.* National Governors Association Center for Best Practices, Council of Chief State School Officers.

NGSS Lead States. (2013). *Next Generation Science Standards: For states, by states.* National Academies Press.