PLTW Launch Standards Connection
Pre-Kindergarten

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:

NAEYC Early Learning Program Standards

Relationships

This program promotes positive relationships between all children and adults to encourage each child's sense of individual worth and belonging as part of a community and to foster each child's ability to contribute as a responsible community member.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Curriculum

The program implements a curriculum that is consistent with its goals for children and that promotes learning and development in each of the following areas: social, emotional, physical, language, and cognitive.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Teaching

The program uses a variety of developmentally, culturally, and linguistically appropriate and effective teaching approaches, which enhance each child's learning and development in the context of the program's curriculum goals.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Assessment of Child Progress

The program uses a variety of formal and informal assessment approaches to provide information on children's learning and development. These assessments occur in the context of reciprocal communications between teachers and families, and with sensitivity to cultural contexts in which children are developing.
The program uses assessment results to inform decisions about the children in their care, to improve teaching practices, and to drive program

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Health

The program promotes the nutrition and health of children and protects children and staff from illness.

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☐ Spatial Sense and Coding

Families

The program establishes and maintains collaborative relationships with each child's family to foster children's development in all settings. These relationships are sensitive to family composition, language, and culture.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

NAEYC Early Learning Program Standards

Community Relationships

The program establishes relationships with and uses the resources of the children's communities to support the achievement of program goals.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Physical Environment

The program has a safe and healthful environment that provides appropriate and well-maintained indoor and outdoor physical environments. The environment includes facilities, equipment, and materials to facilitate child and staff learning and development.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Approaches to Learning

Cognitive Self-regulation (Executive Functioning)

Goal P-ATL 6

Child maintains focus and sustains attention with minimal adult support.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-ATL 7

Child persists in tasks.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-ATL 8

Child holds information in mind and manipulates it to perform tasks.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-ATL 9

Child demonstrates flexibility in thinking and behavior.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Initiative and Curiosity

Goal P-ATL 10

Child demonstrates initiative and independence.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-ATL 11

Child shows interest in and curiosity about the world around them.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Creativity

Goal P-ATL 12

Child expresses creativity in thinking and communication.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-ATL 13

Child uses imagination in play and interactions with others.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Head Start Early Learning Outcomes Framework

Language and Communication

Attending and Understanding

Goal P-LC 1

Child attends to communication and language from others.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-LC 2

Child understands and responds to increasingly complex communication and language from others.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Communicating and Speaking

Goal P-LC 3

Child varies the amount of information provided to meet the demands of the situation.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-LC 4

Child understands, follows, and uses appropriate social and conversational rules.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-LC 5

Child expresses self in increasingly long, detailed, and sophisticated ways.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Vocabulary

Goal P-LC 6

Child understands and uses a wide variety of words for a variety of purposes.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Goal P-LC 7

Child shows understanding of word categories and relationships among words.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Literacy

Comprehension and Text Structure

Goal P-LIT 4

Child demonstrates an understanding of narrative structure through storytelling/re-telling.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Head Start Early Learning Outcomes Framework

Goal P-LIT 5

Child asks and answers questions about a book that was read aloud.

- [x] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [x] Healthy Habits
- [x] Spatial Sense and Coding

Writing

Goal P-LIT 6

Child writes for a variety of purposes using increasingly sophisticated marks.

- [x] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [x] Healthy Habits
- [x] Spatial Sense and Coding

Mathematics Development

Counting and Cardinality

Goal P-MATH 1

Child knows number names and the count sequence.

- [ ] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [x] Healthy Habits
- [ ] Spatial Sense and Coding

Goal P-MATH 2

Child recognizes the number of objects in a small set.

- [ ] Life Science: Living and Nonliving Things
- [ ] Matter: Floating and Sinking
- [x] Healthy Habits
- [x] Spatial Sense and Coding

Goal P-MATH 4

Child compares numbers.

- [ ] Life Science: Living and Nonliving Things
- [ ] Matter: Floating and Sinking
- [x] Healthy Habits
- [ ] Spatial Sense and Coding

Operations and Algebraic Thinking

Goal P-MATH 7

Child understands simple patterns.

- [ ] Life Science: Living and Nonliving Things
- [ ] Matter: Floating and Sinking
- [ ] Healthy Habits
- [x] Spatial Sense and Coding

Measurement

Goal P-MATH 8

Child measures objects by their various attributes using standard and non-standard measurement. Uses differences in attributes to make comparisons.

- [x] Life Science: Living and Nonliving Things
- [ ] Matter: Floating and Sinking
- [x] Healthy Habits
- [ ] Spatial Sense and Coding

Head Start Early Learning Outcomes Framework

Geometry and Spatial Sense

Goal P-MATH 9

Child identifies, describes, compares, and composes shapes.

- ☐ Life Science: Living and Nonliving Things
- ☐ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Goal P-MATH 10

Child explores the positions of objects in space.

- ☐ Life Science: Living and Nonliving Things
- ☐ Healthy Habits
- ☐ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Scientific Reasoning

Scientific Inquiry

Goal P-SCI 1

Child observes and describes observable phenomena (objects, materials, organisms, and events).

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Goal P-SCI 2

Child engages in scientific talk.

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Goal P-SCI 3

Child compares and categorizes observable phenomena.

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Reasoning and Problem-Solving

Goal P-SCI 4

Child asks a question, gathers information, and makes predictions.

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Goal P-SCI 5

Child plans and conducts investigations and experiments.

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Goal P-SCI 6

Child analyzes results, draws conclusions, and communicates results.

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Perceptual, Motor, and Physical Development

Health, Safety, and Nutrition

Goal P-PMP 4

Child demonstrates personal hygiene and self-care skills.

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☐ Spatial Sense and Coding

Goal P-PMP 5

Child develops knowledge and skills that help promote nutritious food choices and eating habits.

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☐ Spatial Sense and Coding

Next Generation Science Standards

While NGSS does not include standards for early childhood learning, research led the PLTW Launch team to develop content that provides a scaffold to NGSS. Modules address Science and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas, and also provide a learning progression toward elementary science standards.

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.

- ☑ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

Earth's Systems

K-ESS2-2

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

- ☑ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

Matter and Its Interactions

2-PS1-1

Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

- ☐ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

2-PS1-2

Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

- ☐ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

Next Generation Science Standards

2-PS1-3

Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

- ☐ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

2-PS1-4

Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

- ☐ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☐ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Analyzing and Interpreting Data

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

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

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).

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☐ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

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).

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

Disciplinary Core Idea (K-2)

Physical Science

PS1.A Structure and Properties of Matter

• Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties.

- ☐ Life Science: Living and Nonliving Things
- ☐ Healthy Habits
- ☑ Matter: Floating and Sinking
- ☐ Spatial Sense and Coding

Next Generation Science Standards

PS1.A Structure and Properties of Matter

- Different properties are suited to different purposes.

☐ Life Science: Living and Nonliving Things ☑ Matter: Floating and Sinking
☐ Healthy Habits ☐ Spatial Sense and Coding

PS1.A Structure and Properties of Matter

- A great variety of objects can be built up from a small set of pieces.

☐ Life Science: Living and Nonliving Things ☑ Matter: Floating and Sinking
☐ Healthy Habits ☐ Spatial Sense and Coding

PS1.B Chemical Reactions

- Heating and cooling substances cause changes that are sometimes reversible and sometimes not.

☐ Life Science: Living and Nonliving Things ☑ Matter: Floating and Sinking
☐ Healthy Habits ☐ Spatial Sense and Coding

Earth and Space Science

ESS2.E Biogeology

- Plants and animals can change their environment.

☑ Life Science: Living and Nonliving Things ☐ Matter: Floating and Sinking
☐ Healthy Habits ☐ Spatial Sense and Coding

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.

☑ Life Science: Living and Nonliving Things ☐ Matter: Floating and Sinking
☐ Healthy Habits ☐ Spatial Sense and Coding

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.

☑ Life Science: Living and Nonliving Things ☐ Matter: Floating and Sinking
☐ Healthy Habits ☐ Spatial Sense and Coding

Engineering, Technology, and Applications of Science

ETS1.A Defining and Delimiting Engineering Problems

- A situation that people want to change or create can be approached as a problem to be solved through engineering.

☑ Life Science: Living and Nonliving Things ☑ Matter: Floating and Sinking
☑ Healthy Habits ☑ Spatial Sense and Coding

ETS1.A Defining and Delimiting Engineering Problems

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

☑ Life Science: Living and Nonliving Things ☑ Matter: Floating and Sinking
☑ Healthy Habits ☑ Spatial Sense and Coding

Next Generation Science Standards

ETS1.A Defining and Delimiting Engineering Problems

- Before beginning to design a solution, it is important to clearly understand the problem.

- [x] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [x] Healthy Habits
- [x] Spatial Sense and Coding

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.

- [x] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [x] Healthy Habits
- [x] Spatial Sense and Coding

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.

- [x] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [x] Healthy Habits
- [x] Spatial Sense and Coding

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.

- [x] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [ ] Healthy Habits
- [ ] Spatial Sense and Coding

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.

- [x] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [x] Healthy Habits
- [x] Spatial Sense and Coding

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.

- [x] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [x] Healthy Habits
- [x] Spatial Sense and Coding

Energy and Matter: Flows, Cycles, and Conservation – Tracking energy and matter flows, into, out of, and within systems helps one understand their system’s behavior.

- Objects may break into smaller pieces, be put together into larger pieces, or change shapes.

- [ ] Life Science: Living and Nonliving Things
- [x] Matter: Floating and Sinking
- [ ] Healthy Habits
- [ ] Spatial Sense and Coding

Next Generation Science Standards

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).

☑ Life Science: Living and Nonliving Things	☐ Matter: Floating and Sinking
☑ Healthy Habits	☑ Spatial Sense and Coding

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.

☑ Life Science: Living and Nonliving Things	☐ Matter: Floating and Sinking
☐ Healthy Habits	☐ Spatial Sense and Coding

Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena

- Scientists search for cause and effect relationships to explain natural events.

☐ Life Science: Living and Nonliving Things	☑ Matter: Floating and Sinking
☐ Healthy Habits	☐ Spatial Sense and Coding

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

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

- Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.

☐ Life Science: Living and Nonliving Things	☑ Matter: Floating and Sinking
☐ Healthy Habits	☐ Spatial Sense and Coding

Computer Science Teachers Association K-12 Computer Science

Since PreK standards are not included in CSTA K-12 Computer Science Standards, PLTW Launch PreK modules address skills that easily scaffold to expectations for learning in the K–2 grade bands.

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.

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

Algorithms and Programming

Variables

1A-AP-09

Model the way programs store and manipulate data by using numbers or other symbols to represent information.

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

Control

1A-AP-10

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

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

Modularity

1A-AP-11

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

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

Program Development

1A-AP-12

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

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

1A-AP-13

Give attribution when using the ideas and creations of others while developing programs.

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

Computer Science Teachers Association K-12 Computer Science

1A-AP-14

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

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

1A-AP-15

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

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

Common Core State Standards English Language Arts - Kindergarten

CCSS does not provide standards for early childhood learning. As with NGSS, PLTW Launch PreK modules offer a scaffold of learning that moves toward kindergarten standards in ELA and Mathematics.

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.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

CCSS.ELA-LITERACY.RL.K.2

With prompting and support, retell familiar stories, including key details.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

CCSS.ELA-LITERACY.RL.K.3

With prompting and support, identify characters, settings, and major events in a story.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

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.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

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).

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

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

Continue a conversation through multiple exchanges.

- ☑ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☑ Spatial Sense and Coding

Common Core State Standards Mathematics - Kindergarten

CCSS does not provide standards for early childhood learning. As with NGSS, PLTW Launch PreK modules offer a scaffold of learning that moves toward kindergarten standards in ELA and Mathematics.

Counting and Cardinality

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.

- ☐ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

Measurement and Data

Describe and compare measurable attributes.

CCSS.MATH.CONTENT.K.MD.A.1

Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

- ☑ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☐ Spatial Sense and Coding

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. For example, directly compare the heights of two children and describe one child as taller/shorter.

- ☑ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☑ Healthy Habits
- ☐ Spatial Sense and Coding

Geometry

Analyze, compare, create, and compose shapes.

CCSS.MATH.CONTENT.K.G.B.5

Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

- ☐ Life Science: Living and Nonliving Things
- ☑ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☐ Spatial Sense and Coding

Mathematical Practices

CCSS.MATH.PRACTICE.MP2

Reason abstractly and quantitatively.

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

CCSS.MATH.PRACTICE.MP4

Model with mathematics.

- ☐ Life Science: Living and Nonliving Things
- ☐ Matter: Floating and Sinking
- ☐ Healthy Habits
- ☑ Spatial Sense and Coding

Common Core State Standards Mathematics - Kindergarten

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

- ☑ Life Science: Living and Nonliving Things
- ☑ Healthy Habits
- ☐ Matter: Floating and Sinking
- ☑ Spatial Sense and Coding

References

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

Early Childhood Learning & Knowledge Center. (n.d.). *Head Start early learning outcomes framework: Ages birth to five.* https://eclkc.ohs.acf.hhs.gov/interactive-head-start-early-learning-outcomes-framework-ages-birth-five

National Association for the Education of Young Children. (2017). *NAEYC early learning program standards*. https://www.naeyc.org/accreditation/earlylearning/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.