



## Academic Support: Standard Alignment

Our lesson includes a literacy component, a check for understanding, culminating in a summative assessment through hands-on engineering design activities.

### Kindergarten at a Glance

Students will investigate how sunlight impacts the Earth's surface and create solutions to address its warming effects. They will explore the concepts of force and motion, observing moving objects to grasp the principles of pushes and pulls in action.

### First Grade at a Glance

Students will investigate the patterns of the sun, moon, and stars while describing and observing phenomena that can be anticipated. Additionally, they will explore sound, waves, and light by designing and constructing devices that utilize either light or sound.

\*We customize the experience to fit your schedule, budget, and classroom goals



## Tiny Scientists, Big Ideas:

Read about our hands-on engineering activities. For each activity, the relevant academic standard is listed. Each lesson's final activity is connected to the Big Ideas and has a clear instructional purpose. Choose one idea for an ASC educator to implement in your classroom.

## Kindergarten Design Activities

**Freeze the Melt:** Students will investigate heat transfer from the sun and design and test different shelters to reduce the time for an ice cube to melt. [CO.GK.S1.2.a.b](#)

**Storm Proof:** After learning local weather patterns students will design and create tents and umbrellas that can withstand various weather conditions in our community. [CO.GK.S1.2.b](#)

## Grade 1 Design Activities

**Sonic Shakers:** Students will use the engineering design process to design a device that produces different sounds through vibrations. [CO.GK.S1.2.b](#)

**Space Explorers:** Explore and map different constellations using simple materials. [CO.G1.S3.1.a](#)

# TECHNOLOGY



## Academic Support: Standard Alignment

Our coding and robotics lessons are broken into manageable steps to support student understanding and allow students to demonstrate mastery at their own pace and level. Students apply coding, computational thinking, problem-solving, and engineering skills at an appropriate level of complexity.

### Kindergarten

Students will understand what an algorithm is and create simple step-by-step instructions that a peer can follow, and test algorithms with technology.

### Grade 1

Students will understand and describe basic computer hardware and software, and solve problems by building an algorithm that can be modified for different purposes.

\*We customize the experience to fit your schedule, budget, and classroom goals



## Tiny Coders, Big Ideas:

Explore our robotics and coding activities, designed to provide age-appropriate, hands-on learning experiences. The final activity in each lesson connects directly to the Big Ideas and has a clear instructional purpose. Choose one activity or idea for an ASC educator implement in your classroom.

## Kindergarten Activities

**Hungry Alligator:** Students will practice robotics and creating algorithm instructions using technology with LEGOs. Students build a LEGO alligator that can move. [CO.GK.S1.1.a](#)

**Logic Flow:** Students practice breaking instructions down into steps. Example: navigating each other in partners to different places around the room. [CO.GK.S1.1.a](#)

## Grade 1 Activities

**Tiny Coders:** Students will build simple code for a robot to follow a sequence and a path. [CO.G1.S3.1.b](#)

**Tech Explorers:** Students will take apart a computer to create a map of a computer software to demonstrate knowledge of functions. [CO.G1.S2.1.a.b](#)

# ENGINEERING



## Academic Support: Standard Alignment

Each lesson includes a literacy component, a check for understanding, and a summative assessment in the form of a hands-on engineering design challenge utilizing the engineering design process. Students will create solutions for real-world problems.

### Kindergarten

Students will apply their understanding of geometry to plan, design, and construct structures utilizing various shapes and materials.

### Grade 1

Students will utilize two- or three-dimensional shapes, along with their understanding of city and town buildings, to design and construct innovative structures.

\*We customize the experience to fit your schedule, budget, and classroom goals



## Tiny Engineers, Big Ideas:

Read about our hands-on engineering challenges. For each challenge, the relevant academic standard is listed. Each lesson's final activity is connected to the Big Ideas and has a clear instructional purpose. Choose one idea for an ASC educator to implement in your classroom.

## Kindergarten Activities

**Ramp Engineers:** Students will investigate what's the best way to move a loaded car by designing a ramp using different materials and shapes. [CO.K-PS2-1](#)

**Maze Makers: Push & Pull:** Students apply their understanding of motion by designing a "Marble Maze" to demonstrate how pushes and pulls change direction. [CO.K-PS2-2](#)

## Grade 1 Activities

**Can Your Bridge Hold?:** Students will design a bridge that can support a small toy car using only specific shapes. [1.G.A.2](#)

**Eco-Shelter Challenge:** Students will design a shelter that focuses on addressing environmental changes. [SC.1.2.1](#)



 **Academic Support: Standard Alignment**

Each lesson includes a check for understanding and a summative assessment that applies a math skill to a hands-on engineering design activity.

### Kindergarten

Students will enhance and broaden their math vocabulary by describing, comparing, and identifying the components and characteristics of their designs and constructions.

### Grade 1

Students will enhance their math vocabulary by describing the data they collected during their challenge. This will involve using both direct measurements of lengths and indirect measurements through the use of various objects.

\*We customize the experience to fit your schedule, budget, and classroom goals

 **Tiny Mathematicians, Big Ideas:**

Read about our hands-on math activities. For each challenge, the relevant academic standard is listed. Each lesson's final activity is connected to the Big Ideas and has a clear instructional purpose. Choose one idea for an ASC educator to implement in your classroom.

## Kindergarten Activities

**Once Upon a Structure:** Students will use their knowledge of geometry to build a structure for a story character from a fable. **CCSS: K.G.A.3**

**Shape Engineers:** Students will identify shapes and use vocabulary to describe, compare, measure, and explain different engineering designs. **CCSS: K.G.A.3**

## Grade 1 Activities

**Follow the Light:** Students will design a flashlight using simple materials and then measure the "Path of Light" using different objects. **CCSS: 1.MD.A.2**

**Rocket Rulers:** After students build and test different rockets, they will measure the height and distances the rocket traveled and build a graph. **CCSS: 1.MD.C.4**