



Academic Support: Standard Alignment

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

Grade 2 at a Glance

Students will investigate matter, its various states, and their properties. They will also discover significant geological and water features in the Roaring Fork Valley to gain insights into how Earth events can happen either rapidly or gradually.

Grade 3 at a Glance

Students will investigate electric and magnetic forces, deepen their understanding of food chains, gather data on weather patterns, and engage in discussions about solutions to weather hazards caused by natural processes in order to mitigate their impacts.

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



Tiny Scientists, Big Ideas:

Read about our hands-on engineering challenges. For each challenge, the relevant academic standard is listed below. 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 develop and implement in your classroom.

Grade 2 Design Activities

Mini Ice Age Explorers: Students will explore and uncover a Snowmass Ice Age fossil site in their own classroom. [CO.GK.S1.2.a.b](#)

Rock Formation Explorers: Students will create a model of geologic formations using simple materials. [CO.GK.S1.2.b](#)

Grade 3 Design Activities

Grab It Challenge: Students will design a tool using magnets to pick up small metal objects. [CO.GK.S1.2.b](#)

Tiny Meteorologists: Students will explore weather data and identify weather hazards to design a shelter that can withstand hazardous conditions. [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.

Grade 2 At a Glance

Students will explore essential coding skills and use software to build programs with sequences and simple loops, to express ideas or a solution to a problem.

Grade 3 At a Glance

Students will work with different algorithms exploring how they can be improved for the same task.

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Tiny Coders, Big Ideas:

Explore our robotics and coding challenges, 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 challenge or idea for an ASC educator to develop and implement in your classroom.

Grade 2 Activities

Spirograph Patterns: Students will build and code an automated spirograph to create unique patterns.

CS.2.3.1

Sorting Machine: Students will create a brick-sorting machine, which will be programmed to sort by color. **CS.2.2.1**

Grade 3 Activities

Subroutine Creation: Students will refactor navigation code into reusable functions. **CS.3.1.1**

Gyroscope Robot: Students will use a gyroscope to take in positional data that will allow a robot to navigate through a course. **CS.3.1.1**



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.

Grade 2 At a Glance

Students will investigate the characteristics of shapes and discover how an object's design impacts its functionality in the context of engineering structures.

Grade 3 At a Glance

Students will design structures as solutions to problems aimed at minimizing the effects of weather-related hazards.

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Tiny Engineers, Big Ideas:

Read about our hands-on engineering challenges. For each challenge, the relevant academic standard is listed below. 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 develop and implement in your classroom.

Grade 2 Activities

Windproof House: Students will design and build a small house that can withstand "strong winds" from a fan using limited materials. [SC.2.3.2](#)

Stop Erosion: Students will design and build a barrier that protects a model mountain or piece of land from being washed away by water. [SC.2.3.2](#)

Grade 3 Activities

Shape It, Build It, Test It!: Students will design a bridge that can support a small toy car using only specific shapes. [CO.3-PS2-1](#)

Flow by Force: Students are tasked with designing and constructing a gravity-powered water system to address a specific problem. [CO.3.P.3](#)



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 challenge.

Grade 2 At a Glance

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

Grade 3 At a Glance

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.

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Tiny Mathematicians, Big Ideas:

Read about our hands-on engineering challenges. For each challenge, the relevant academic standard is listed below. 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 develop and implement in your classroom.

Grade 2 Activities

Playground Design: Students will design a playground using a limited amount of space and measure the length of different playground features. [CO.MA.2.MD.B.6](#)

Why it Matters?: Students will test the properties of materials, collect data, and use math to determine which design works best. [SC.2.1.1](#)

Grade 3 Activities

Bridge Work: Students will build and measure a bridge, collect test data, and create a graph to compare how much weight different designs can support. [3.MD.B](#)

Water tower: Students will build a water tower plant that can distribute water to a small community. [3.MD.A](#)