Kid Spark Basics

v3.0

Kid Spark Basics | Unit Overview

Unit Overview:

In this unit, students will learn the basics of how to use Kid Spark resources in the classroom. Students will get hands-on as they explore different building materials and engineering processes that are used throughout Kid Spark learning experiences.

Recommended Grade Level:
2 - 8

Kid Spark STEM Lab:
STEM Pathways

Alignment to STEM Standards:

The table below highlights how this unit is aligned to the Next Generation Science Standards (NGSS).

- NGSS Disciplinary Core Ideas (DCI) are standards related to content knowledge.
- NGSS Science and Engineering Practices (SEP) and Crosscutting Concepts (CCC) provide a foundation for all scientific and engineering disciplines and are particularly important to develop in young students.

Lessons & Assessment	NGSS DCI	NGSS SEP	NGSS CCC
Lesson 1: Basic Building Components (60 Min.) In this lesson, students will become familiar with the basic building components that are included in Kid Spark STEM Labs. Students will learn how to connect and disconnect building components, and how to add strength to a design.	Engineering Design	Asking questions & defining problems	Structure & function
Lesson 2: Articulating Components (60 Min.) In this lesson, students will learn how Kid Spark engineering materials can be used to create movement. Then, students will create a custom design that moves.	Engineering Design	Asking questions & defining problems	Structure & function
Lesson 3: Dimensions, Perspectives, & Measurement (60 Min.) In this lesson, students will learn how Kid Spark engineering materials can be used to determine the dimensions of different objects. Then, students will create a simple measuring device to determine the dimensions of several objects in the room.	Engineering Design	Using mathematics	Scale, proportion, & quantity
Lesson 4: The Design & Engineering Process (120 Min.) In this lesson, students will learn how to use a design and engineering process to develop solutions to problems or challenges. Students will learn how each step in the process is essential to developing creative, collaborative solutions to STEM challenges.	Engineering Design	Planning & carrying out investigations	Stability & change
Lesson 5: Free Build Challenge (60 Min.) In this lesson, students will apply the knowledge and skills they have acquired throughout the Kid Spark Basics Unit to develop a solution to a challenge. Students will work in teams to design, engineer, and present a custom design.	Engineering Design	Constructing explanations & designing solutions	Systems & system models
Unit Assessment: Kid Spark Basics In this assessment, students will answer a series of questions to demonstrate an understanding of the core ideas and concepts that were covered throughout this unit.			

Target Vocabulary

The following key terms will be used throughout this unit. It may be helpful to explain these terms as they show up in lessons and challenges.

Articulating	Dimension	Invention	Perspective
Brainstorm	Empathy	Iteration	Prototype
Collaboration	Engineer	Length	Rotational
Depth	Height	Measurement	Specification
Design	Innovation	Movement	Teamwork

Teaching Lessons Over Multiple Class Periods

Each lesson in this unit follows Kid Spark's convergent to divergent lesson format. Lessons can easily be taught over the course of two class periods.

Class Period 1 - Convergent Learning Activity

Students building the same models, learning the same content.

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Class Period 2 - Divergent Learning Activity

Students applying their knowledge through open-ended design challenges.

Get Engaged!

Visit our community page at KidSparkEducation.org/Community for new project ideas, lesson insights, and to see how other educators are using Kid Spark materials and resources in their classrooms.