

Unit 1: It's All About the Blocks

Foundational Fluencies: It's All About The Blocks

Unit Overview

Primary Unit Objective:

Get excited about using KidSpark's ROK Blocks.

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Recommended Grade Level:

PreK - 1st

Mobile STEM Lab Required:

ROK Blocks (1 per group of 4 students)

of Lessons Included:

4

Developing STEM Identity:

This unit is designed to introduce young students to Kid Spark's ROK Blocks during short learning experiences. By focusing their attention on each of the four basic ROK Blocks, students will learn the properties and function of each and be better able to use them in their own creative designs, in future lessons, and free play. The lessons are intended to ensure students experience success immediately.

Alignment to STEM Standards:

Unit 1 engages students in multiple opportunities to compare and contrast ROK Blocks and the shapes and constructions that can be made with them. Students begin to explore scale and proportions. They are introduced to the idea that the physical structure of objects is related to their functionality. They are asked to make frequent observations. The table below outlines the Student Learning Objectives (SLO) for Unit 1 and their alignment to the Next Generation Science Standards (NGSS) and the Common Core State Standards in Math.

- ⚙️ NGSS Disciplinary Core Ideas (DCI) are standards related to content knowledge.
- ⚙️ NGSS Science and Engineering Practices (SEP) and Cross-Cutting Concepts (CCC) provide a foundation for all scientific and engineering disciplines and are particularly important to develop in young children.
- ⚙️ Common Core Stand Standards in Math help teachers integrate ROK Block experiences with math curriculum and to help build a continuum of engineering learning from preschool to the primary grades.

Unit Learning Objectives	NGSS DCI	NGSS SEP	NGSS CCC	CCSS-MA
SLO 1: Become familiar with and use ROK Blocks to build models.		Developing and using models		
SLO 2: Compare/contrast number, shape, size, color of basic blocks.	Critical thinking: compare & contrast	Using mathematical & computational thinking	Scale, proportion, and quantity	Counting objects, comparing sets
SLO 3: Identify and name 2 and 3 dimensional shapes that comprise the basic ROK Blocks.			Structure and function	Geometry-identify & describe shapes
SLO 4: Observe blocks closely, identifying details, and functionality.	Making observations	Asking questions and defining problems	Structure and function	Describing the physical world using geometry

Unit 1 Lesson Overview:

Lesson 1: The Big Yellow Block (30 min.)

In this lesson, students will explore the different features and attributes of the Yellow ROK Block. Students will get hands-on experience as they analyze the block, practice connecting and disconnecting, and working as a team to solve a fun challenge.

Lesson 2: The Little Blue Block (30 min.)

In this lesson, students will explore the different features and attributes of the Blue ROK Block. Students will get hands-on experience as they analyze the block, practice connecting and disconnecting, and working as a team to solve a fun challenge.

Lesson 3: The Angled Red Block (30 min.)

In this lesson, students will explore the different features and attributes of the Red ROK Block. Students will get hands-on experience as they analyze the block, practice connecting and disconnecting, and working as a team to solve a fun challenge.

Lesson 4: The Medium Green Block (30 min.)

In this lesson, students will explore the different features and attributes of the Green ROK Block. Students will get hands-on experience as they analyze the block, practice connecting and disconnecting, and working as a team to solve a fun challenge.

Target Vocabulary

Size	Rectangle	Compare
Big(ger/est)	Line	Same
Large(r/st)	Circle	Different
Small(er/est)	Curve	Symmetry
Medium	Arch	Straight
Long(er/est)	Round	Red
Short(er/est)	Pyramid	Blue
Tall(er/est)	Cube	Yellow
Half	Rectangular	Green
Double	Prism	Edge
Twice	Connect	Side
Square	Separate	Medium

Classroom Organizational Tips

All the lessons in Unit 1 can be taught to the whole class (with or without older student facilitators) or in teacher-facilitated small groups. The lessons are designed to be implemented with small groups of students seated around a shared table. At times it is helpful to have students work in pairs, sharing their observations with their partner.

GET ENGAGED!

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

Recommended Children's Literature

"Not a Box" by Antoinette Portis

"Build It!: Structures, Systems and You" by Adrienne Mason

"Give Me Half!" by Stuart Murphy

"Shapes Are Everywhere!" by Charles Ghigna