

## Overview:

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.

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## Unit Concepts & NGSS Alignment:

- Become familiar with how to use ROK Blocks to build models
- Compare/contrast number, shape, size, and color of basic blocks
- Identify and name 2 and 3 dimensional shapes that comprise the ROK Blocks
- Observe blocks closely, identifying details and functionality

**Scientific/Engineering Practice** - Asking questions and defining problems

**Crosscutting Concept** - Scale, proportion, and quantity

## Activity Time:

30 Minutes

## Kid Spark Mobile STEM Lab:

ROK Blocks

## Materials Per Student:

- 3 Yellow ROK Blocks



## Lesson Introduction:

**Instructor:** "Today we are going to start using some special blocks, called ROK Blocks. We can use ROK Blocks to help us learn math and to build things. Today we are going to use the biggest block: The Yellow ROK Block. In the future we will use the other blocks too."

## Core Learning Activity:

1. Give each student (1) Yellow ROK Block and instruct them to look at it closely.
2. Instruct students to share what they notice/observe about the block with other students. Use the following prompt questions for student discussion:
  - a. What does the block feel like? (**Point out texture on sides, openings, pyramids/cones**)
  - b. Which side is the longest? What shape is the long side? (**Rectangle**)
  - c. How many openings does a long side have? (**8**) How many long sides are there on the block? (**4**)
  - d. Which side is the shortest? What shape is the short side? (**Square**)
  - e. How many openings does a short side have? (**4**) How many short sides are there on the block? (**2**)
3. Explain to students that the Yellow ROK Block is a shape called a rectangular prism. Have students practice saying "rectangular" and "prism".
4. Explain to students that a rectangular prism has six sides. Work with students to count all six sides on the yellow block.
5. Explain to students that a rectangular prism has twelve edges. Ask students if they know what an edge is. Ask students to touch the edge of their desk (**Demonstrate touching edge of a desk**). Work with students to count the twelve edges of the block. **Note: It is okay if students have difficulty counting edges. This activity is designed to introduce them to the parts of 3D shapes.**
6. Give students a second Yellow ROK Block. Demonstrate and allow students to practice connecting and disconnecting blocks. *Tip: It is easier to pull blocks apart using a bending or twisting motion instead of pulling them straight out.*

### Lesson Challenge: Build a Bigger, Rectangular Prism

**Instructions:** Have students work in teams of two. Make sure each team has (6) Yellow ROK Blocks. Challenge teams to build a big rectangular prism using the (6) yellow blocks. Ask students to determine how many openings the long and short sides of the rectangular prism have. (E.g. structure is 6 openings on the long side, 4 openings on the short side - see example solution below).

