youcubed®

Three Block Towers
Grade K

Introduction

This activity has students exploring shapes and colors. In this activity students investigate the combinations of ways they can make a tower with three different colored blocks. They then see how many different towers they can make with four different colored blocks. The many combinations of colored towers provides an authentic reason for students to find a way to keep track of and organize the ideas they collect. This task also helps students develop hand eye coordination and allows them to explore with cubes.

Agenda for the activity

Activity	Time	Description	Materials
Introduction and Work Time	15 min	Introduce the three-block tower activity. • Have students work with a partner to build towers with three different colored blocks. How many different towers can they build? • Have students record the towers they have built by coloring them in on the record sheet. How do they know they have found all of them? • Invite students to share with the class the different towers they have made.	• One yellow, one green, and one red block for every pair of students • Recording Handout for three-block towers • Colored pens or pencils
Four Block Towers	10 min	Introduce the four-block towers activity. • How many different towers can you make with four different colored blocks? • How do you know you have found all of the towers? What does this make you wonder? What would you like to explore next?	• In addition to blocks for previous work, a blue block • Recording Handout for four-block towers • Colored pens or pencils

Activity

Introduce students to the activity. How many different towers can you make using one red block, one yellow block, and one green block? They will work with a partner to figure out how many different towers they can build using these three different colored blocks. They will record on their handout all of the different towers they have made. When students think they have shown all of the different

towers that can be made, ask them how they know.

Invite students to share with the class the different towers they have made. How many towers were they able to make? How do they know they have made all the towers possible?

Have students build towers with a fourth blue block added. Now how many different towers can they make with the four different colors of blocks? As students are working have them consider the questions: How do you know you have found all of the towers? What do you notice? What does this make you wonder? What would you like to explore next?

Have a conversation with the students about the questions listed above. Let them know that by exploring and asking questions they are doing what mathematicians do. They investigate ideas and ask questions that lead them to explore further.
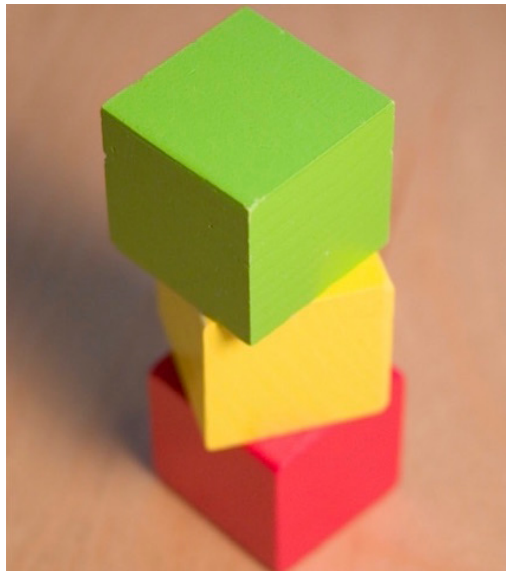
Extensions
- How many different towers could you build with five different colored blocks? six?

Materials
- One yellow, one green, one red, and one blue block for every pair of students
- Recording Handouts
- Colored pens or pencils

Adapted from http://nrich.maths.org/137

2017 — Week of Inspirational Maths 3

Three Block Towers
Handout

How many different towers can you make using one red, one green, and one yellow block? Write down which towers you have tried.

How many can you make if you have a blue block as well?

Recording Sheet

Three Block Towers:

Three Block Towers
Handout

Four Block Towers Recording Sheet: