Build a Bigger Block

Grade 1

Lesson 104

Topic Overview

Students will pack blocks into holders to build bigger and bigger blocks. They also explore and build with the blocks.

Objectives

Thinking Skills:	Students use observation skills and pattern recognition to identify features and similarities among the blocks and the way they pack to form bigger blocks.
Mastery Skills:	Students use one-to-one correspondence to count blocks. They also learn that exactly ten blocks are needed to form a bigger block.

Materials

For the class demonstration, each small group of students needs at least:

- 111 single blocks
- 21 small holders
- 2 medium holders
- 1 "Building Blocks" activity sheet

For the student activity, provide as many single blocks, holders, and packed blocks as students need for exploration.

Class Demonstration (15 - 20 minutes)

Have students sit in groups of two to four. Pass out single blocks to each group. Discuss:

- **What do these blocks look like? What shape are the blocks? What color?**
- **How do the blocks sound?**
- **How do they feel?**

Hold up the next bigger block to show students what it looks like. Pass out the small holders. Challenge students to **pack the small blocks into holders to make a bigger block.** (Note: Avoid giving the bigger block a name until students discover its features. The bigger block in this case will eventually be called the "block-of-10.")

- Allow students time to explore with their packing. Students will be very creative and try many different ways to pack the blocks.
- Ask students to test their bigger block to see if it stays shut when they hold it loosely. (Note: Students will discover that there is only one way to pack the blocks into the holders such that the block snaps shut.)

Have students describe the bigger block and compare it to the small single block. They should notice:

- It is the same color as the small block.
- It has the same shape as the small block.
- It is bigger than the small block.
- Ten small blocks fit inside.

Ask the students to **gently** open the holders on all of their bigger blocks without removing the blocks inside. Have students count the small blocks in each of their holders. Discuss:

- **How many blocks are inside <u>each</u> holder?** (10) **Can you remove a block and still snap it shut with another holder?** (No. There must be ten inside for it to snap shut.)
- **How many small blocks do you have altogether? Can you count them all to see how many?** (Note: Many students will not be able to count all the blocks. Ask students to count as far as they can. Watch

to see how students are counting. Do they use one-to-one correspondence? Do they miscount or forget the next tens number?)
- **What is a good name for this bigger block?** (Together as a class, name this bigger block a **block-of-10**.)

Have students pack their blocks as much as possible without removing or adding any blocks to their group's collection.
- Explain to students that it is okay to have some **extra** blocks. (Note: Many students want to pack everything or get rid of any extra, unpacked blocks. Understanding that these blocks are all part of their collection is crucial in later activities.)
- If students have exactly 111 blocks for their group, they will be able to pack 11 blocks-of-10; and they will have 1 single block left over.

Pass out the medium holders. Have students build an even bigger block by packing the blocks-of-10 into the holders.
- Have students describe this block and compare it to the other sizes.
- Again, students should notice that it takes exactly ten blocks inside a holder for it to snap shut. Students should notice that the way the blocks-of-10 pack into the medium holders duplicates the way the single blocks packed into the small holders.

Ask the students to open this even bigger block. Discuss:
- **What kind of blocks can you see inside?** (Blocks-of-10) **How many blocks-of-10 are inside?** (10)
- **Are any small single blocks hidden inside?** (Yes, there are single blocks hidden inside the blocks-of-10.) **How many single blocks are inside the bigger block?** (Have students count by tens, or unpack and count all the blocks inside. There are 100 single blocks inside.)
- **What is a good name for this even bigger block?** Together as a class, name the even bigger block a **block-of-100**.

Individual or Small Group Activity (10 - 15 minutes)

Allow students time to explore with the blocks of varying sizes. During their exploration, explain that you would like them to build a structure out of their blocks.

When they are finished building, have students draw the blocks and their structure on the "Build a Bigger Block" activity sheet.

- When possible, have students use words and numbers to label their drawings.

Closure (4 - 8 minutes)

When students are finished exploring, building, and drawing their structures, ask students to share their work with the class. Ask:

- **What did you build?**
- **What kinds of blocks did you use?**
- **How many single blocks?**
- **How many blocks-of-10 did you use in your structure?**
- **How many blocks-of-100 did you use in your structure?**
- **If you opened all of the blocks you used so that you saw only single blocks, how many single blocks would you see? Take a guess!**

Assessment

While students are counting, packing, and building with the blocks, take note of the following:

- Are students actively engaged with the blocks? Do they follow directions and work cooperatively with other students?
- Can students tell you how many blocks are inside the block-of-10? The block-of-100?
- How far do students accurately count using one-to-one correspondence? Where do students miscount? Do they forget the next tens number? (i.e., 38, 39, um, 20, 21,…)

Look at the students' drawings. Look for evidence of the following:

- A clearly represented structure built out of blocks.
- Indication of the features and sizes of the blocks used in their structure.
- Numbers indicating the amount of blocks used.

Extension

- Have students describe their structure into a tape recorder. This activity will help students learn how to explain their work; and it will help them learn vocabulary associated with grouping blocks into tens. Note the vocabulary students use to describe the location of each block in their structures.
- Have students continue packing to build an even bigger block, a block-of-1000. Students can predict the size first, then pack and count all the single blocks inside.