

# What A Handful! (Part 2)

Grade 2

Lesson 209

## Lesson Overview

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Students pack blocks, explore a "growing" quantity, and name numbers using the Counter.

## Objectives

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**Thinking Skills:** Students devise and describe estimation strategies. Students discover features of the Counter and how it works as blocks are loaded. They observe and describe patterns on the Counter to help them make predictions.

**Mastery Skills:** Students explore our number system as they use the Counter to predict, load, pack, and name sums up to 3-digit numbers.

## Materials

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Paper plates that contain each student's handful of blocks (from "What a Handful - Part 1.")

For the class activity -

- 3-place Counter

For the student activity -

- "Give Us A Hand(full!)" Activity Sheet

## Class Introduction

(5-10 minutes)

Refer to the Digi-Block graph constructed in Part 1 (see Weekly Pack-it 208 under Archived Lessons).

- Ask, **How many blocks do you think our class grabbed altogether? If we count all of the platefuls of blocks that we grabbed, how many do you think there are?** Have the students study the graph they made. Give them time to ponder the question alone, and with a group. To get their "wheels turning," ask, **Are there more or less than 100 blocks altogether? How do you know?**

## Activity

(45 minutes)

Distribute "Give Us a Hand(ful)!" activity sheets to small groups or pairs of students. Have students:

- Complete parts A and B.
- Share responses.

Depending on students' levels, some will focus on the blocks-of-10 they see on the plates. They may count them first and then "clean up" by adding singles to make their estimates. This is a very efficient strategy for estimating! Help students express their ideas with words and numbers on the activity sheet.

Display the Counter.

- Have students place their packed handfuls, one at a time, on the Counter. Before each student's turn, have the class **predict** what the blocks and dials will look like when the new handful is added. (Have individual students complete part C on the activity sheet as they add their own handfuls to the Counter.)
- Place each plateful of blocks at the "foot" of the Counter before loading them. This will help students visualize, discuss, and predict what the outcome will be before they are actually loaded.
- Have students give a thumbs-up sign if they predict they will need to pack and move when they add a handful. If not, they give a thumbs-down.
- Record the growing number on chart paper and have students talk about **how and why the number changes**, especially when the tens or

hundreds place increases by two digits (i.e. 36 plus 15 equals 51.) Individual students may record this change by drawing "before and after" pictures on their activity sheets (part C). More able students may write a number sentence (such as  $146 + 15 = 161$ ) to show the change.

- After about half of the handfuls have been loaded from the graphing mat to the Counter, ask, **Does anyone want to adjust his or her estimate of the total number of blocks that we grabbed?** Discuss revised estimates and reasoning supporting them.

### Closure

(10 minutes)

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Have students complete the activity sheet, parts D and E. Guide students in drawing conclusions about how the Counter works. Highlight the following:

- Only 9 blocks can fit in any holder.
- When the tenth block is inserted, the Counter ejects the holder.
- This is a cue to pack and move the block to the next size holder.
- The dials read from 0 to 9 and repeat again.

### Assessment

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As students work, observe and note:

Do they-

- Describe estimation strategies that make use of how the blocks are packed? (For example, "ten tens make 100, and ten singles make a new ten")
- Anticipate and explain what will happen as blocks are added to the Counter?
- Set and read the dials on the Counter correctly from left to right?
- Understand that an empty holder represents zero, and means there are no blocks of that size?

Use the student activity sheet, "Give Us A Handful," to further evaluate students' understanding.

### Extension

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- Unpack all of the blocks on the Counter. Count them by ones to check the base ten representation.
- Display 4 blocks-of-10 and 5 singles on the Counter. Place a plate with 1 block-of-10 and 3 singles at the foot of the Counter. Have students write about what will happen when the blocks are loaded on the Counter. They may use pictures, words, and/or numbers. Repeat, adding 1 block-of-10 and 6 singles.
- Have students write a letter to a friend or someone at home about how the Counter works.