

# Before and After

Grade 2

Lesson 205

## Lesson Overview

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Students combine two collections of blocks-of-10 and single blocks. They identify the place(s) in which blocks need to be packed, pack and move the blocks, set the Digit flip cards, then name the number.

## Objectives

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**Thinking Skills:** Students recognize situations in which they do and do not need to pack and move groups of ten blocks. Students will predict what the packed number will look like, and name the final number.

**Mastery Skills:** Students learn to pack single blocks, blocks-of-10, and blocks-of-100 to determine a total amount. They use a Place mat to organize blocks, and Digit flip cards to represent the final, packed-as-much-as-possible quantity.

## Materials

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Each pair of students needs:

- 1 Place mat
- Digit flip cards - set of 3
- 1 container of about 16 single blocks, 16 blocks-of-10, 2 small holders, and 1 medium holder
- 1 "Before and After" activity sheet
- 1 die (with digits 0-6 or more) or spinner (with digits 0-6 or more)

### Class Demonstration

(10-15 minutes)

Have two student volunteers do the activity to model the process and clarify directions.

- Designate roles: one student is the **Recorder** and the second is the **Digit-Setter**.
- Each student rolls a die or spins a spinner two times.
  - The first time shows how many blocks-of-10 to place on the Place mat.
  - The second time shows how many single blocks to put on the mat.
- Players combine their blocks-of-10 and single blocks together on the same mat.
- Recorders draw the "before" picture of what the blocks look like on their activity sheet. They write how many of each block are in each place before the blocks are packed as much as possible.
- Before setting the digits for the total amount, have students discuss what the blocks will look like when packed as much as possible.
- Digit-Setters use the Digit flip cards to represent the total combined amount. They may need to pack ones and tens as much as possible in order to do this!
- The Recorder completes the "after" picture of how the blocks look when they are packed as much as possible. They write the digits in the blank Digit flip card spaces on the activity sheets.

### Student Activity

(10-15 minutes)

Student pairs work independently, switching roles so that each partner has a chance to be Recorder and Digit-Setter.

Walk around to each pair of students and ask them to predict how the blocks will look in the "after" picture (when packed as much as possible.) Ask students to explain how they know.

### Closure

(10-15 minutes)

Have students reflect on their work with the blocks, and review the "Before and After" pictures and numbers they recorded. Ask:

- **How did you know if you would need to pack?**

- How are the “before” numbers that you recorded the same as or different from the “after” numbers?
- Do any partners have a “before” picture that is the same as the “after” picture? Why did this happen?
- Were there any instances where packing ones triggered packing blocks-of-10 to make a block-of-100, or a “chain reaction”? (For example 18 ones and 9 tens when packed would be 8 ones, 0 blocks-of-10, and 1 block-of-100.) What made this happen?

Have the students make generalizations, such as:

- If there are fewer than 9 blocks of a kind, they cannot be packed.
- If there are more than 9 blocks of a kind, they can be packed.

Have students share some of their “before” and “after” numbers. Display a 2-column (before, after) list of them. Look for, and describe patterns.

- For example, 8 tens and 14 ones is equivalent to 9 tens and 4 ones. Show the 4 ones in each representation, and have the students explain that the ten ones made another block-of-10, so now instead of 8 blocks-of-10, there are 9.
- Once again, have students explain what makes a “before” number the same as the “after.” For example, if students spun and combined their blocks to make 8 ones and 7 blocks-of-10, there would be no need for regrouping.

### Assessment

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As students work, observe and note the following. Do they:

- Recognize situations in which they need, or *don't need* to pack?
- Predict what the blocks will look like before they are packed as much as possible?
- Name the final, packed number correctly?
- Understand, and can they explain, that the before and after pictures show *different representations* of the *same* quantity?

### Extension

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- Have students choose one of their before and after pictures to explain in their math journal. Ask them to explain when and why they needed to pack.
- Have students record the numbers that they combined along with the total number. This step is a precursor to understanding addition with regrouping.