Separating on the Mat

Grade 1

Lesson #124

Relevant Chapters in the *Digi-Block Comprehensive Teacher's Guides:*
Book I, Unit 3-3: Exploring Subtraction with Larger Blocks, pages 72-76
Book II, Unit 3-2: Exploring Subtraction with Larger Blocks, pages 64-70

Lesson Overview

Students use blocks and the place value mat to model 2-digit subtraction with and without regrouping.

Objectives

Thinking Skills: Students predict when to unpack a block-of-10 to get some more ones.

Mastery Skills: Students learn to use blocks to model 2-digit subtraction with and without regrouping.

Materials

Each group of 2-4 students needs:
- 1 block-of-100
- 1 place value mat with digit cards
  [Note: If there are no mats or digit cards available, consider making some using heavy paper. See illustrations below.]
- 1 activity sheet

Display the problem:

87 - 52

Ask one or two students to read this problem aloud and to describe what it means; i.e., what is the problem telling them to do.
- Have students explain in words how they can model this problem with blocks on the place value mat.
- Help students come to the conclusion that they need to model the first number, 87, with blocks on the place value mat. Then they need to take away, or separate, the second number, 52, from the 87.

Ask, **How can I show the first number with blocks?**
- If students correctly name the blocks needed (8 blocks-of-10 and 7 single blocks), then they are ready to continue.
- If not, more practice with place value and representing 2-digit numbers with blocks is needed before continuing this activity.
- Have a student model the number 87 with blocks on a place value mat.

Next, have students suggest how to separate or remove the 52 blocks.
- Students may take the blocks off the mat or slide them to the bottom of the mat (see illustration below). Have a student model this step.
- Ask students what they should do next to finish the problem. Help students explain that they need to count the blocks remaining and set the digit cards to show the answer to the problem, the "difference."
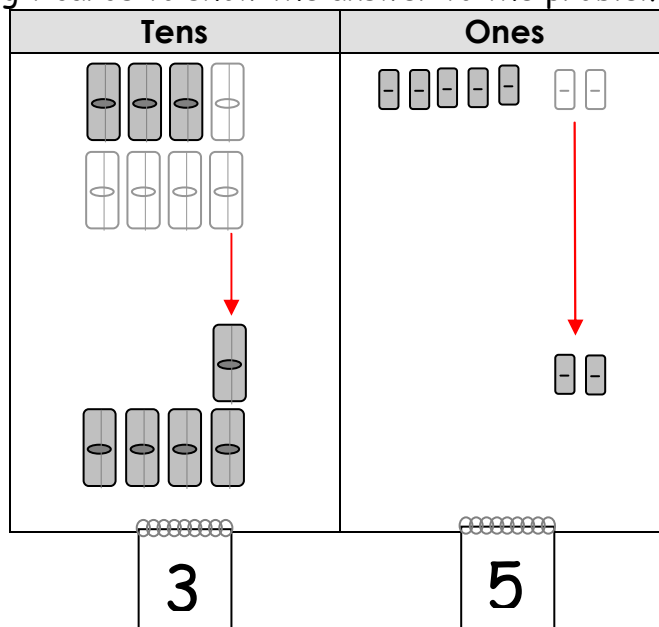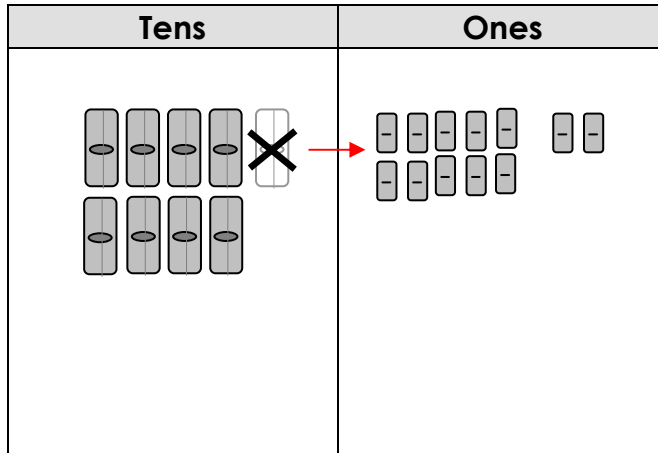
Repeat with another problem, this one requiring regrouping:

92 - 35

Have the class lead a student in modeling this problem with blocks.

- Students will notice that they cannot take away 5 ones without unpacking a ten. Have the student show how to unpack a block-of-10 to make more ones visible:

Tens	Ones

- Once the student has unpacked a block-of-10, he or she can separate the 35 blocks and set the digit cards to show the answer to the problem:

Tens	Ones

| 5 | 7 |
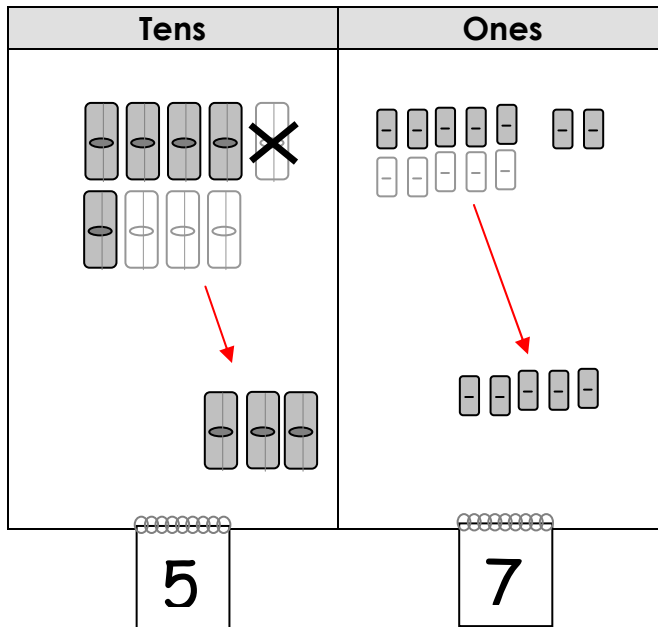
Repeat with several more examples: 63 - 19, 40 - 16, 96 - 24, etc. Each time, have students predict whether or not they will need to regroup.

Activity   (20 minutes)

Pass out the activity sheet to each group. Have students model each problem with blocks.

As students are working, walk around and make sure they model each problem accurately with the blocks. Ask:
- **Where is the first number represented on your mat?**
- **Did you have to unpack a block-of-10?**
- **Where are the blocks that you separated?**
- **What is your final answer? Can you show me how to count the final answer?**

Closure   (10-20 minutes)

Discuss the problems on the activity sheet. Have students share any discoveries they made about when they have to unpack (regroup) and when they do not.

Assessment

As students are solving problems, observe and note the following. Do they:
- Distinguish between problems that need regrouping and those that do not?
- Model the first number, the total, with blocks?
- Separate the second number with blocks (without losing count)?
- Easily identify the resulting blocks, the difference?

Extension

❑ Ask students to give estimates for the differences (i.e., ask, **Is the difference between 10 and 20? Is it greater than 50?**, etc.) before modeling the problems with blocks.

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Directions:
Predict if you will unpack. Circle yes or no.
Use blocks to solve the problem.
Write the answer.

**Will you need
to unpack?**

yes or no   93 - 50 = _____

yes or no   29 - 13 = _____

yes or no   45 - 18 = _____

yes or no   63 - 47 = _____

yes or no   81 - 52 = _____

yes or no   70 - 25 = _____