

Filling Holders

Grade 1

Lesson 111

Relevant Chapters in the *Digi-Block Comprehensive Teacher's Guide*:

Book I: Unit 3-1, Joining and Separating, pp. 65-68

Book II: Unit 3-1, Joining and Separating, pp. 57-60

Lesson Overview

Students put 0-9 blocks in a holder. Their partners predict how many more blocks are needed to fill the holder.

Objectives

Thinking Skills: Students discover and describe patterns. They use spatial reasoning to "see" the blocks present and the blocks missing without necessarily counting. They make connections between number pairs that equal 10 and number pairs that equal 100.

Mastery Skills: Students learn to recognize pairs of single-digit numbers with a sum of 10. They also find pairs of multiples of ten that add up to 100, e.g., 20 and 80.

Materials

Each pair of students needs:

- 1 block-of-10
- 1 block-of-100
- 2 "Filling Holders" Activity Sheets (one for each student)

PART ONE -

Have students sit with a partner. Give each pair of students a block-of-10. Have students remove the cover from the block and count to verify that there are 10 single blocks inside. Have students dump all the blocks out of the holder.

Ask one student in each pair to:

- Put some (0-9) of the blocks upright in a holder.
- Keep it secret how many blocks are missing from the holder.
- Show their partner the partially full holder.

Ask the other student in the pair to:

- Predict exactly how many more blocks are needed to fill the holder.
- Check the prediction by filling the holder and counting how many blocks it takes.

Have students try a few more rounds and switch roles.

Discussion points:

- Ask students to name some number pairs that total 10. Make a list of a few student answers. Have students check to see if there are any duplicate pairs. Circle any exact duplicates on the list. For example:

$$\textcircled{3 + 7}$$

$$1 + 9$$

$$0 + 10$$

$$\textcircled{3 + 7}$$

$$9 + 1$$

- Some number pairs are written in reverse (for example, 1+9 and 9+1).

PART TWO -

Hand out the block-of-100 to each pair. Have students remove the cover from the block-of-100 to verify that there are 10 blocks-of-10 inside. Have

students count by tens to see that 10 tens is 100. This means there are 100 single blocks inside the block-of-100

Repeat the activity as described in part one. This time students determine how many blocks-of-10 are needed to fill the holder. The number of blocks needed to fill the holder in this case can be thought of as 0-9 blocks-of-10 or 10-90 single blocks.

Discussion points:

- Ask students to name a few number pairs that make 100. Make a list of student answers.
- Have students compare the two lists. Do they see any similar pairs?
For example:

$$1 + 9 \quad \text{is similar to} \quad 10 + 90$$

Activity

(20 - 25 minutes)

Model how to fold the activity sheet in half. Explain to students that they will:

- Use their block-of-10 to find and then record number pairs that equal 10 on the star side.
- Use their block-of-100 to find and then record number pairs that equal 100 on the moon side.

Pass out the activity sheets. While students work, encourage them to make an organized list so they can find all the pairs.

Closure

(10 - 15 minutes)

Discuss patterns. Ask:

- What patterns do you see?
- Do you see any similarities between the pairs that make 10 and the pairs that make 100?
- Does anyone think they found all the number pairs that make 10? 100? How do you know?

- Have the class make an organized list. Post it in a prominent place:

$$0+10=10$$

$$0+100=100$$

$1+9=10$	$10+90=100$
$2+8=10$	$20+80=100$
$3+7=10$	$30+70=100$
$4+6=10$	$40+60=100$
$5+5=10$	$50+50=100$
$6+4=10$	$60+40=100$
$7+3=10$	$70+30=100$
$8+2=10$	$80+20=100$
$9+1=10$	$90+10=100$
$10+0=10$	$100+0=100$

Assessment

As students use blocks and record number pairs, observe and note the following. Do they -

- Immediately recognize the number of blocks in the holder? Or do they have to count?
- Accurately predict how many more blocks are needed?
- Discover a pattern in the number pairs that equal 10? 100?
- Recognize duplicate answers?
- Use a strategy to make an organized list?
- Make connections between pairs in the single-digit numbers and pairs in the multiples of 10?

Extensions

- Have students use blank paper to list as many number pairs that total 10 as they can. Have them use blocks to check. Repeat with pairs that total 100.
- Have students remove blocks from the holders to play "Emptying Holders." Have them record number sentences using the minus sign.

Filling Holders



Put some single blocks in a holder.
Ask your partner to predict how many
more. Write the numbers that make 10.

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$



Put blocks-of-10 in a holder. Ask your
partner to predict how many more.
Write the numbers that make 100.

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

$$\underline{\quad} + \underline{\quad} = 100$$

fold

What patterns do you see?