3

Teacher's Guide Pages

MISSING TERM SUBTRACTION

Students will learn/discover:
- How to subtract numbers within 20
- How to find the missing term in subtraction problems

Why is this important?

Students need to understand the relationship between numerical operations. The ability to utilize addition strategies to find solutions to subtraction problems, and vice versa, leads to the development of invented strategies, which help students later with mental math and fact recall.

Vocabulary:
- **Subtract:** Move from the whole
- **Minus:** Symbol in a subtraction problem
- **Decompose:** Break apart a number to regroup
- **Minuend:** Largest number (and usually the first number) in a subtraction problem; the number that the subtrahend is subtracting from
- **Subtrahend:** Smaller of two numbers (and usually the second number) in a subtraction problem; the number that is being subtracted from the minuend
- **Difference:** solution to a subtraction problem

SUGGESTED BRICKS	
Size	Number
1x1	10 each of 4 colors
1x2	4
1x3	4
1x8	4
1x10	2
1x12	2
2x2	6
2x3	4
2x4	4
2x6	4
2x8	2
2x10	2

Note: Using a baseplate will help keep the bricks in a uniform line. One baseplate is suggested for these activities.
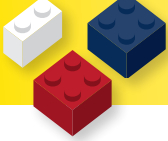
How to use the companion student book,
*Subtraction Using LEGO® Bricks – Student Edition***:**
- After students build their models, have them draw the models and explain their thinking in the Student Edition. Recording the models on paper after building them with bricks helps reinforce the concepts being taught.
- Discuss the vocabulary for each lesson with students as they work through the Student Edition.
- Use the chapter assessments in the Student Edition to gauge student understanding of the content.

Part 1: Show Them How

1. Draw the subtraction diagram and have students draw it. (If your students are using the Student Editions, the subtraction diagrams for the problems are in the books.) Explain to students that the box labeled with the letter M represents the first number in the problem, or the *minuend*. The box labeled with the letter S represents the second number in the problem, or the *subtrahend*. The box labeled with the letter D represents the *difference*. Explain that in these problems a different term is missing (*start number*, *change number*, or the *result number*). Start to discuss with students invented strategies that they might use to find the missing term in the problem. As you discuss strategies with students, note if the chosen strategies are reasonable and can be built and drawn.
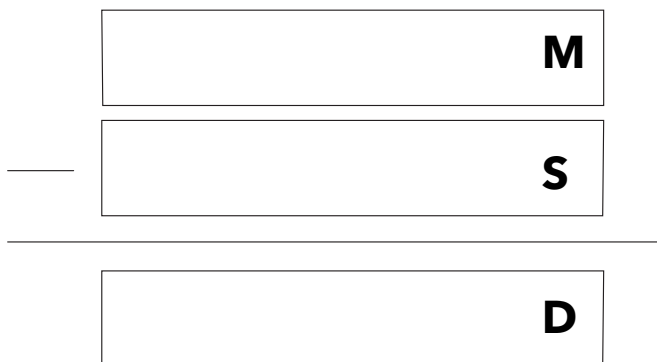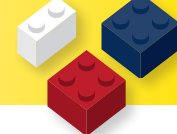
2. Show students a 2x6 brick and a 2x2 brick and have students find those bricks. Ask students to count the number of studs on each brick, draw the bricks, and record that number of studs for each brick.
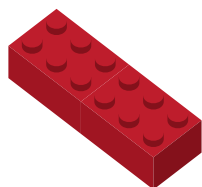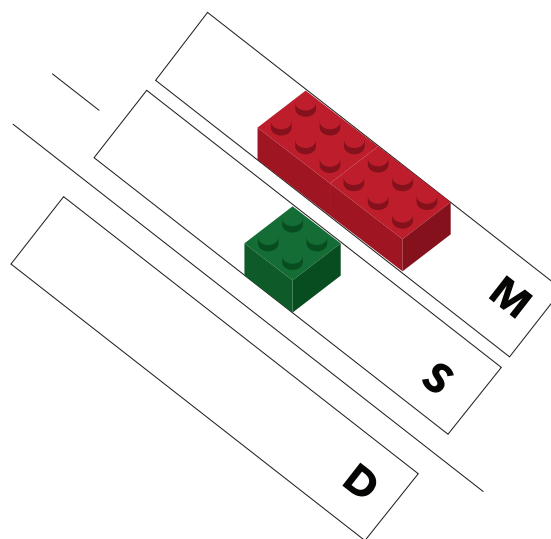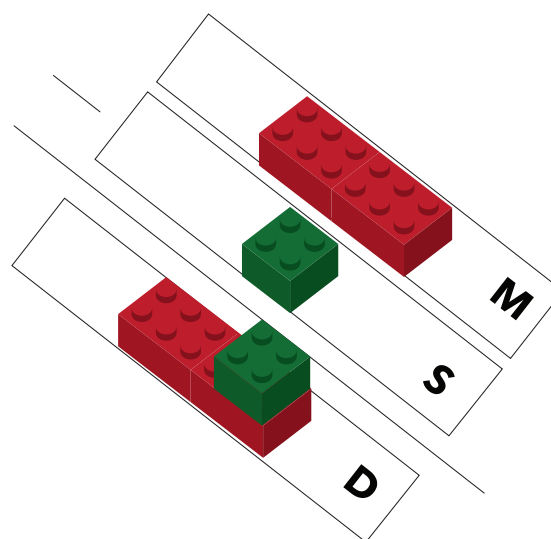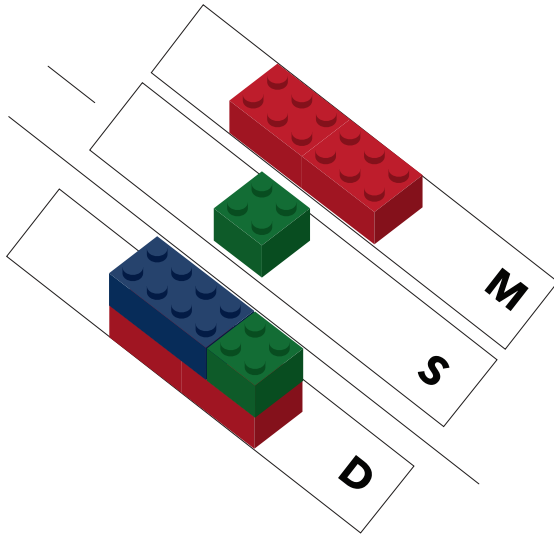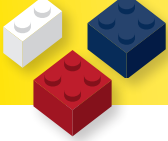
12 studs   *4 studs*

3. Have students put the 2x6 brick on the M box. Have students put the 2x2 brick on the S box.

Ask students how to find the number that goes in the box labeled D. Have students discuss strategies to find the solution with a partner. Have students model their ideas and create a math sentence that describes the model.

One strategy students might discover is to place a 2x2 brick on top of a 2x6 brick and count the studs that are not covered.

Another strategy students might discover is to find parts of the whole and match up the amounts. They may model the 8 studs left over after taking away 4 studs from 12 studs, using a 2x4 brick. *Note:* It is not acceptable for a student to simply place an 8-stud brick in the D box since that does not show the process.

Have students choose a strategy for solving the problem and model it. Have students draw the whole problem and label each part of the problem.
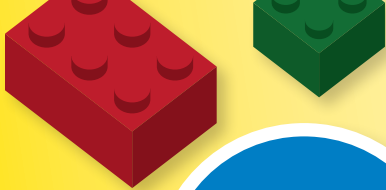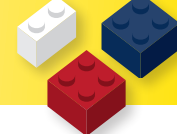
MISSING TERM SUBTRACTION

Part 1

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1. On the diagram, write M, S, or D in the box that shows the correct location of the
minuend, *subtrahend*, and *difference* in a subtraction problem.

2. Find one 2x6 brick and one 2x2 brick. Draw each brick on the baseplates below. Count
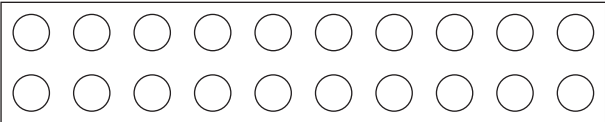the number of studs on each brick and record that number under your drawing of each
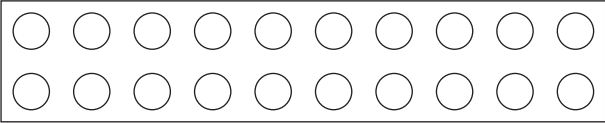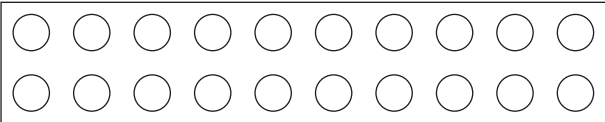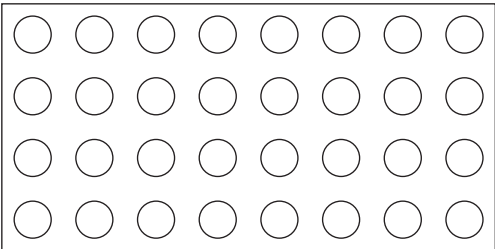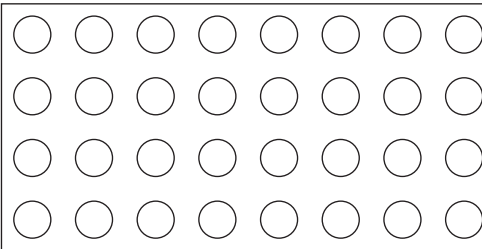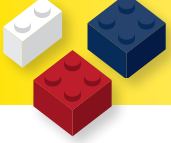brick.
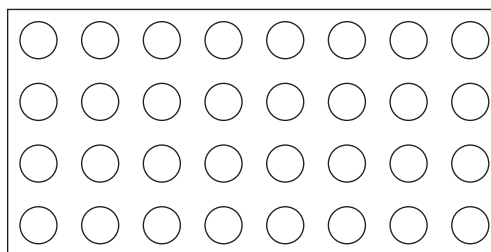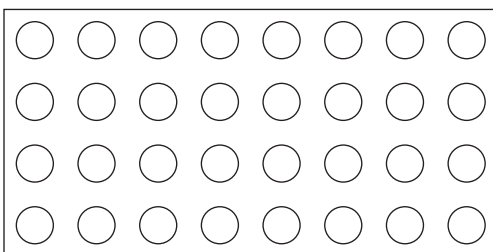
_____ studs   _____studs

3. Place the brick with the larger number of studs on the box above that you labeled *M*. Place the smaller brick on the box labeled *S*.

Discuss with a partner some strategies to find the number that goes in box D. Build a model of your ideas using bricks. Draw your model and explain your strategy.
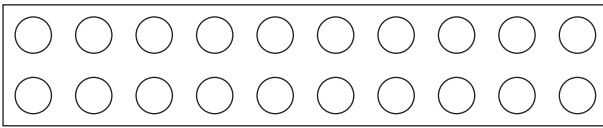

M

S

D

_____

_____

_____

4. Find one 2x4 brick and one 1x2 brick. Draw each brick on the baseplates below. Count the number of studs on each brick and record that number under your drawing of each brick.
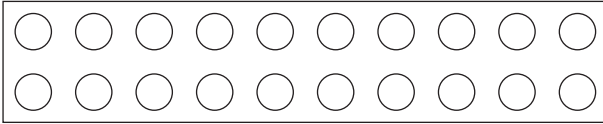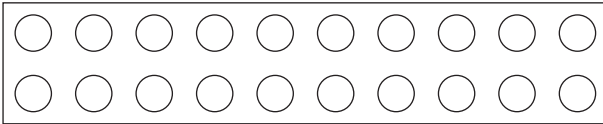

_____ studs   _____studs

5. Place the brick with the largest number of studs on the box labeled M. Place the smaller brick on the box labeled D.

$$\begin{array}{c} \boxed{\text{M}} \\ - \ \boxed{\text{S}} \\ \hline \boxed{\text{D}} \end{array}$$

M

S

D

6. Discuss with a partner some strategies to find the number that goes in box S. Build a model of your idea using bricks. Draw your model on the diagram and explain your strategy. Write the math sentence.

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