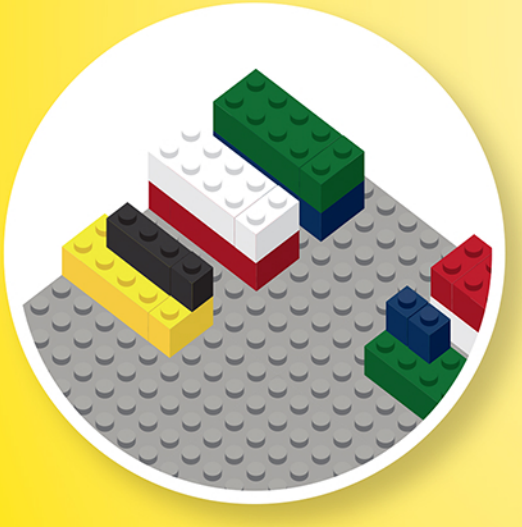
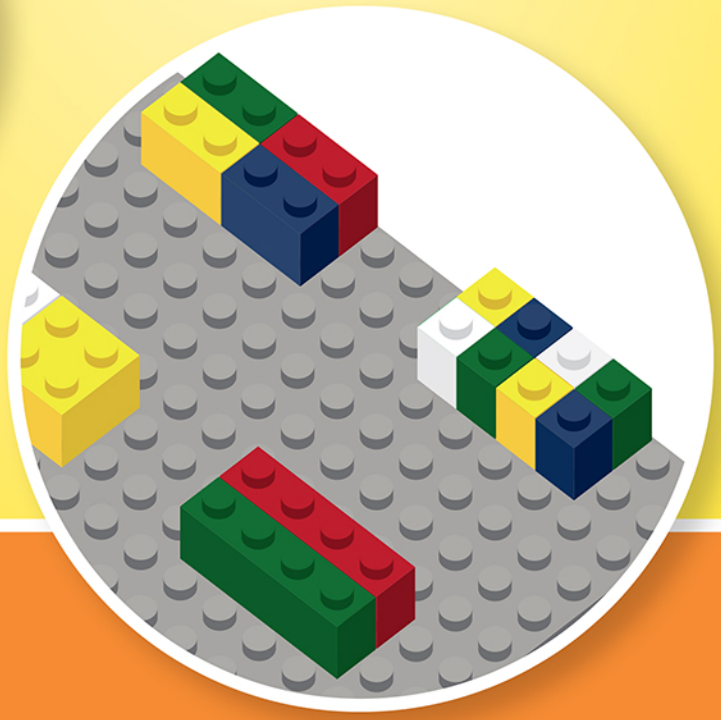
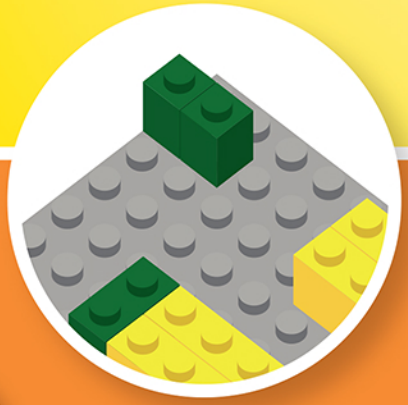
Brick Math Series

TEACHING ADDITION USING LEGO® BRICKS







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Teaching Addition Using LEGO® Bricks

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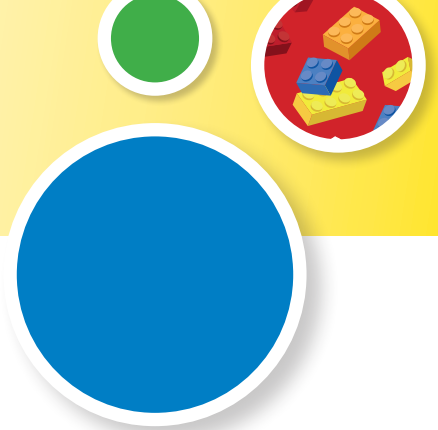


CONTENTS

DECOMPOSING NUMBERS

Students will learn/discover:

- How to add numbers up to the sum of 20 using decomposing within 20

Why is this important?

Adding numbers up to the sum of 20 using the method of decomposing numbers in place value is key with larger numbers, up to the millions, in upper elementary grades. Linking place value to addition and decomposing numbers is important in understanding the way addition is related to other operations.

Vocabulary:

- Add
- Sum
- Addend
- Decompose
- Compose
- Expanded form

How to use the companion student book, *Learning Addition Using LEGO® Bricks*:

- After students build their models, have them draw the models and explain their thinking in the student book. 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 book.
- Use the assessment in the student book to gauge student understanding of the content.

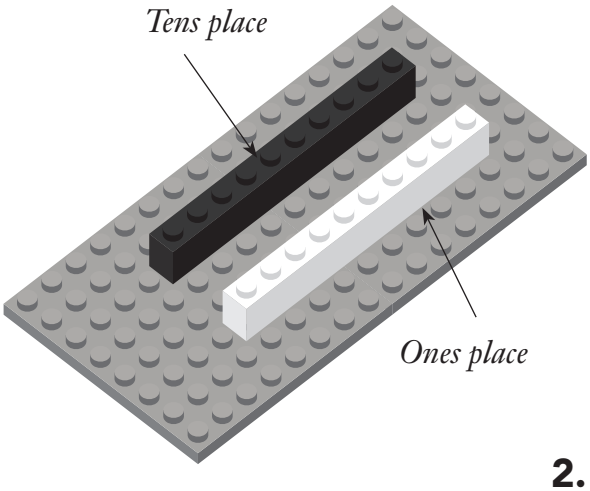
SUGGESTED BRICKS

Size	Number
1x1	10 each of 4 colors
1x2	4
1x3	4
1x10	4

Note: Using a baseplate will help keep the bricks in a uniform line. One large baseplate is suggested for these activities.

Part 1: Show Them How

1. Build the model shown using two 1x10 bricks or the equivalent in smaller bricks, and show it to the students.



Explain that the strip on the right represents the ones place and the strip on the left represents the tens place. *Note:* This is not the same type of modeling as in Chapter 4 (Place Value Addition).

Have students build this model and draw the outlines of each brick strip on baseplate paper.

2. Describe this contextual situation to students: John has 4 cookies and Samantha has 9 cookies. How many cookies do John and Samantha have altogether?

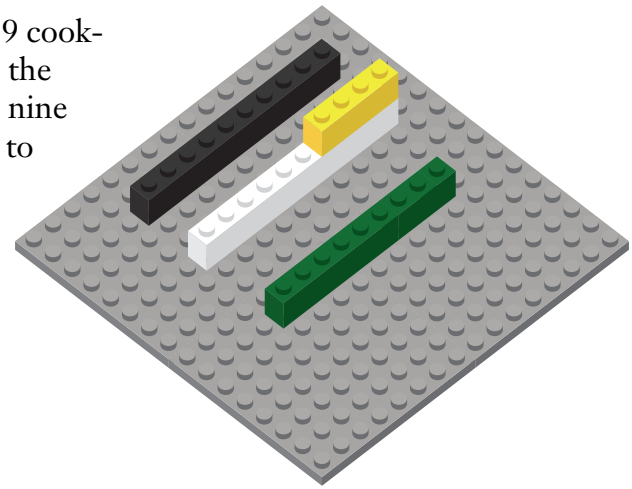
Ask students to write the math sentence for this problem.

Students should write *4* + *9* = ☐. Use the vocabulary and explain that 4 and 9 are *addends*.

3. Ask students to use the ones strip and build a model with bricks that show the number of John's cookies.

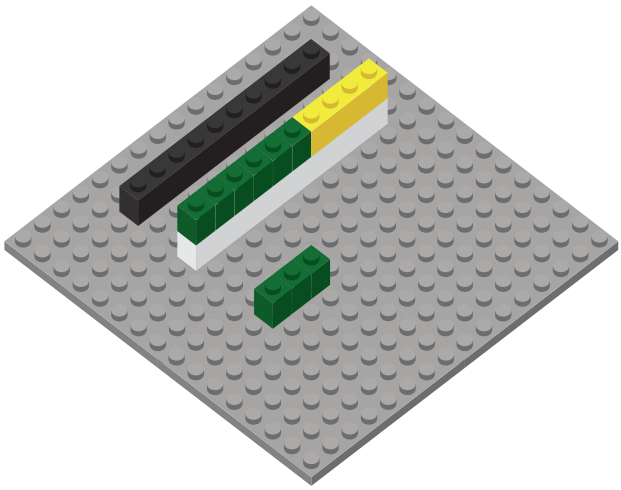
Students should place four 1x1 bricks (or two 1x2 bricks to represent 4 if they have mastered one-to-one correspondence) on the ones place strip to show John's 4 cookies. Have students draw their model of John's cookies.

Ask students to find bricks to model Samantha's 9 cookies in the problem and place them to the side on the baseplate, not on the strips. Students can choose nine 1x1 bricks or a combination of bricks equivalent to nine studs.



Note: It is helpful if students choose different color bricks to represent John's and Samantha's cookies.

4. Ask students to add Samantha's cookies to John's cookies in the model by counting them forward or adding on. When the strip is full, explain that they now have ten and the number has to be "decomposed" to make 1 ten on the tens strip.



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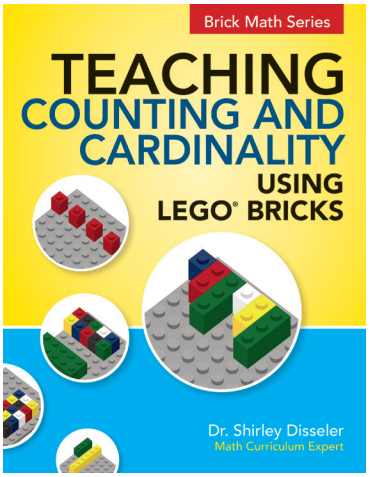

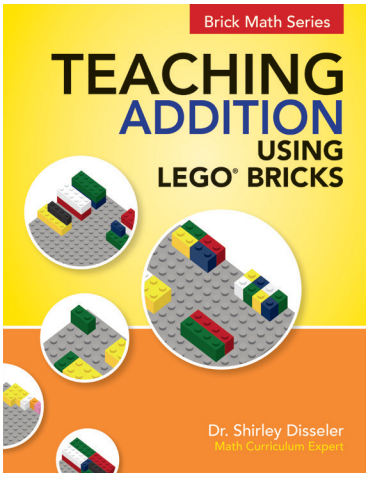

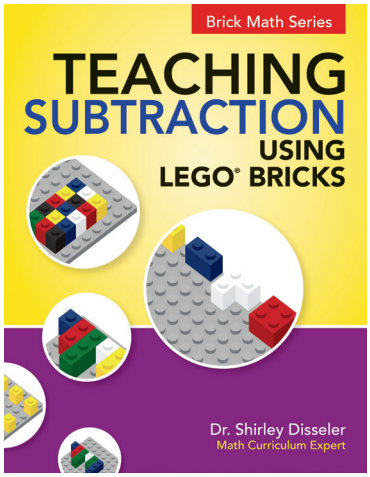

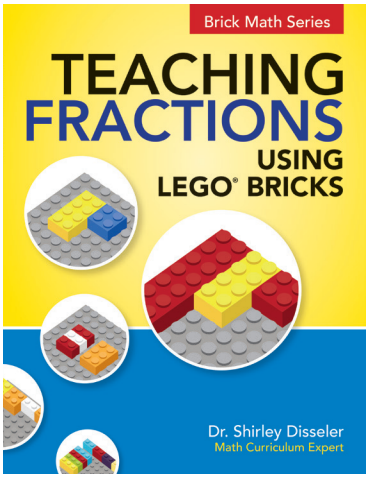

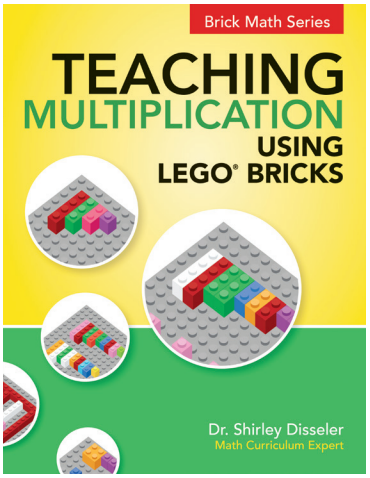

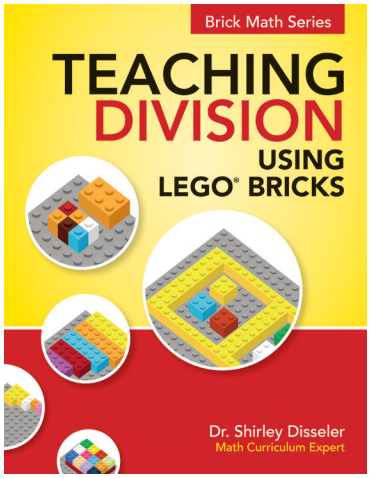

Companion Student Editions

Individual student books that follow the teaching curriculum, complete with additional activities for practice and assessments.