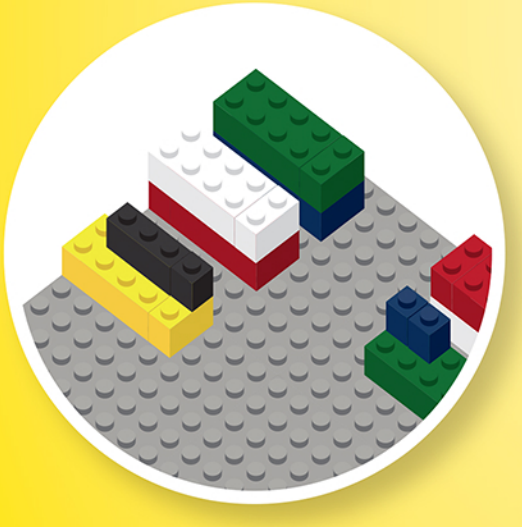
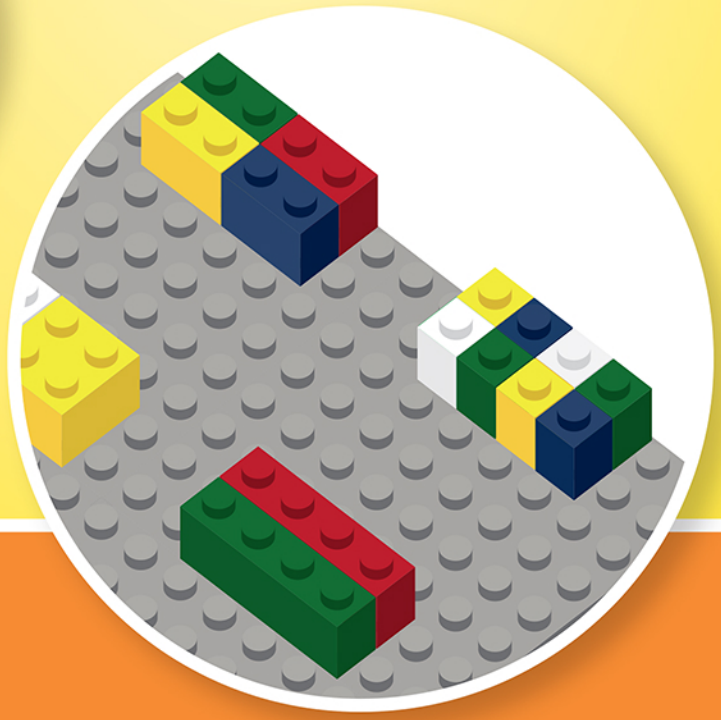
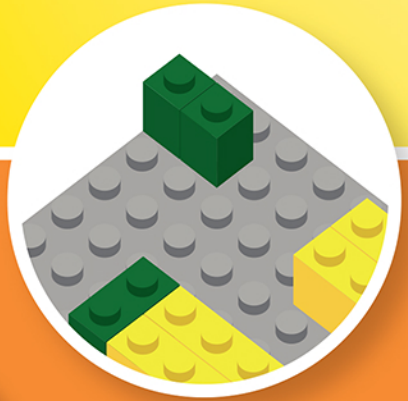
Brick Math Series

# TEACHING ADDITION USING LEGO® BRICKS







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Math Curriculum Expert

*Teaching Addition Using LEGO® Bricks*

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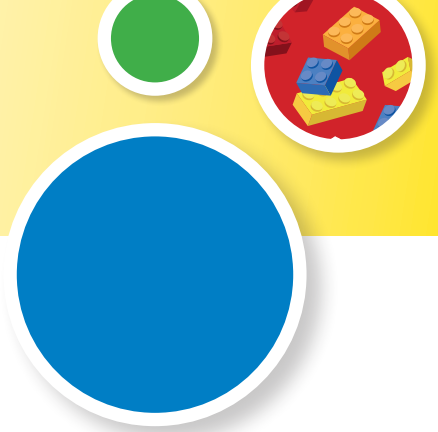

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- **Suggested Brick Inventory**
- **Student Assessment Chart**
- **Baseplate Paper**

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## SUGGESTED BRICKS

| Size | Number |
|---|---|
| 1x1 | 10 each of 4 colors |
| 1x2 | 8 |
| 1x3 | 6 |
| 1x4 | 6 |
| 1x6 | 4 |
| 1x8 | 4 |
| 1x10 | 4 |
| 1x12 | 1 |

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

Note: There are no 5, 7 or 9-stud bricks, so students will need to use a combination of bricks to create those models.

# HOW MANY WAYS?

**Students will learn/discover:**

- How to use multiple statements to find the same sum

**Why is this important?**

Being able to model sums using various addend combinations helps students develop a firm base for mental math, fact recognition, and number relationships.

**Vocabulary:**

- Sum
- Addend
- Equation

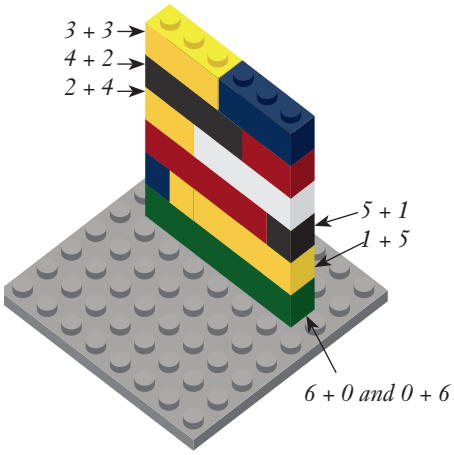
**How to use the companion student book, *Learning Addition Using LEGO® Bricks:***

- 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.

## Part 1: Show Them How

**1.** Build a base model of 6 using a 1x6 brick. Have students build the same model, or display your model to the class. Explain that this model shows the sum. Ask students how many ways there are to make the number 6.

**2.** Begin with 1 + 5. Use two different colors of bricks for the two addends. Stack the bricks on top of the 1x6 brick to represent the 2 addends that make the sum.




Show the next two addends, 5 + 1, using different colors. Stack the bricks showing 5 + 1 on top of the model of 1 + 5. Continue building the model until all the equations that equal 6 are represented.

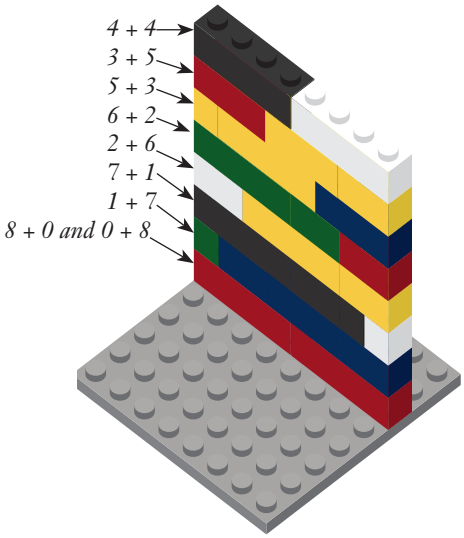
Have students draw the model and label all the equations represented by each row of bricks.

**3.** Ask students how many ways there are to make the number 8. Have students begin by placing one 1x8 brick on the baseplate to represent the number 8.

Ask students what would be the first way to make 8. Answers will vary, but try to get students in the habit of beginning with the number 1. Lead students by saying "1 plus blank equals 8," and asking students what number goes in the blank.

Have students use one 1x1 brick to represent the number 1 and find a combination of bricks in one other color that total 7 studs. Student could use a 1x3 and a 1x4 brick, or a 1x1, 1x2, and a 1x4 brick, etc. Write a math equation for this model: 1 + 7 = 8.

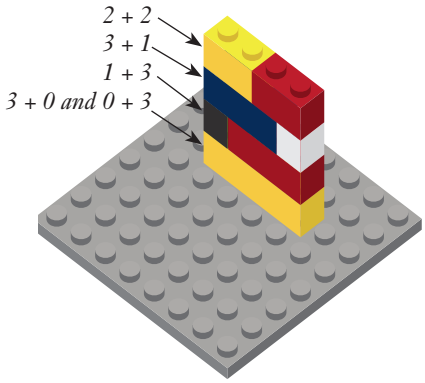
Have students build another layer reversing the colors. Ask students what new math equation is shown with the reversed color bricks. (7 + 1 = 8)




4. Have students continue the process until they think they have found all the ways to make 8. Ask students how they know they have all the ways to make 8. (The pattern will begin to repeat.)

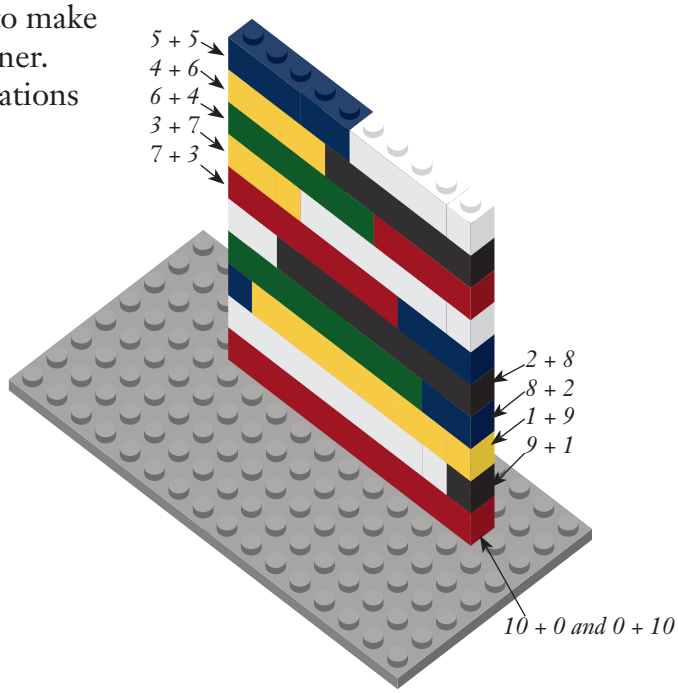
5. Have students share their models with a partner and discuss the ways to make 8. *Note:* Discuss with students that you cannot show 8 + 0 and 0 + 8 two different ways.

## Part 2: Show What You Know

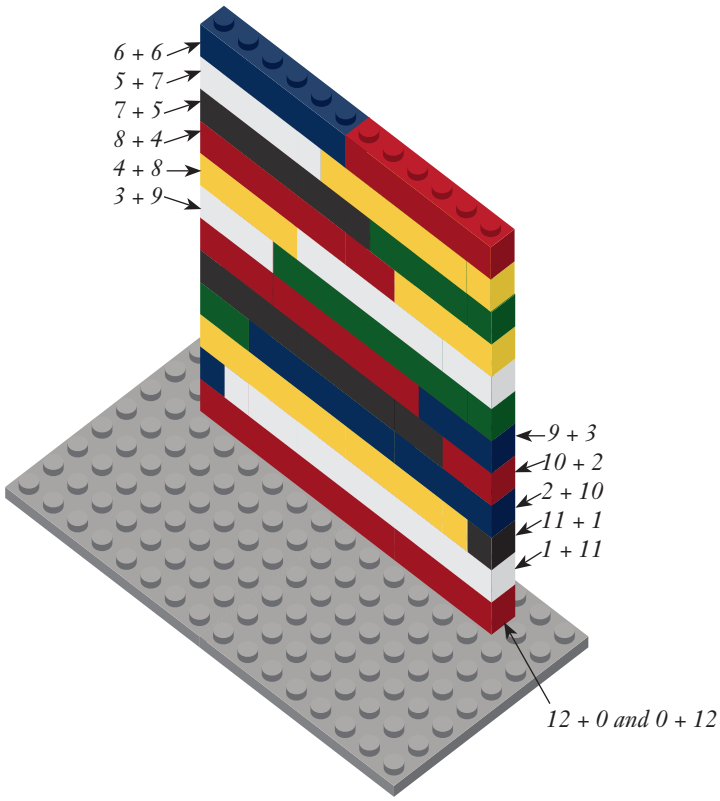



1. Can you build a model to show all the ways to make the sum of 4? Share your model with a partner. Draw your model and write all the math equations for your model.

**2.** Can you build a model to show all the ways to make the sum of 10? Share your model with a partner. Draw your model and write all the math equations for your model.




**3.** Can you build a model to show all the ways to make the sum of 12? Share your model with a partner. Draw your model and write all the math equations for your model.



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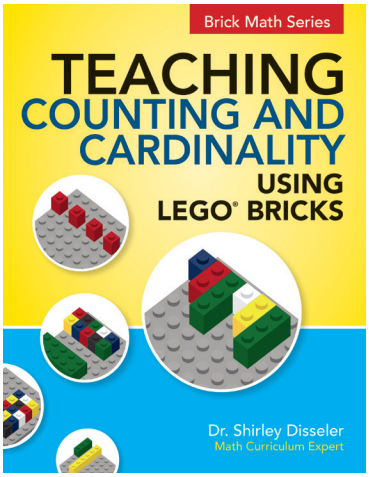
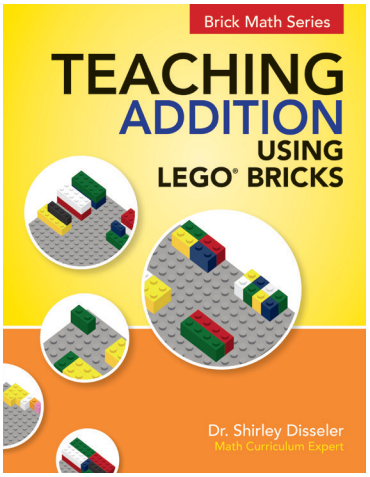
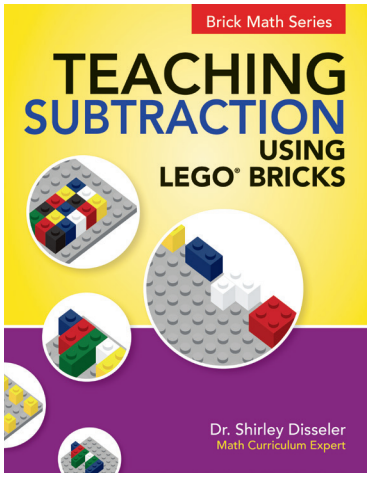
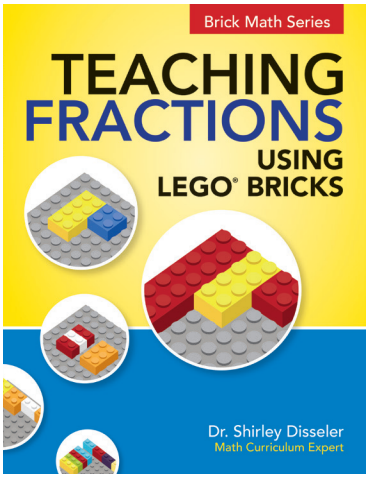
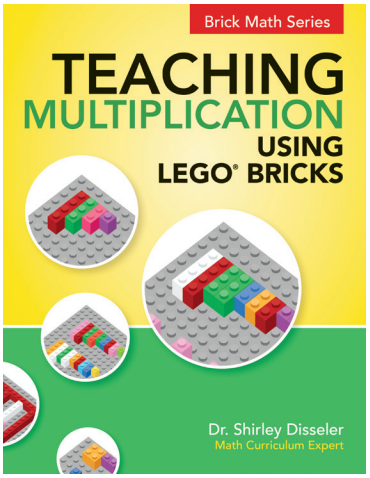
## www.brick-math.com

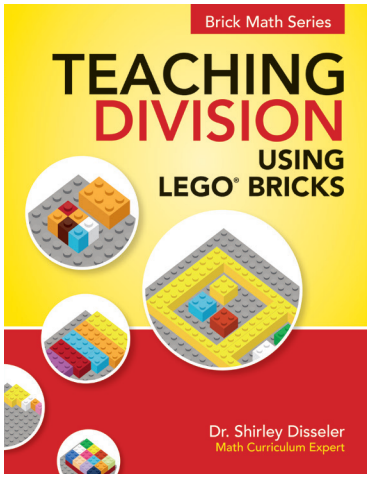


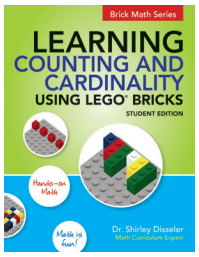
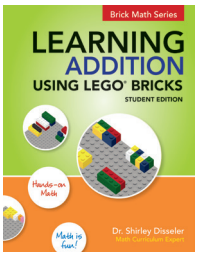
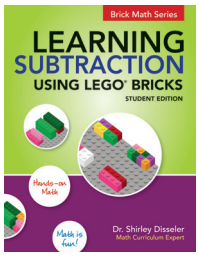
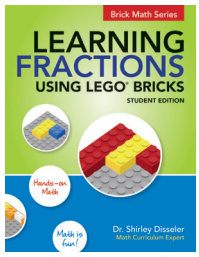
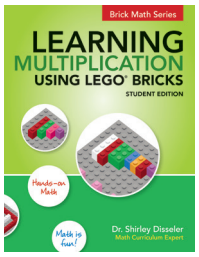
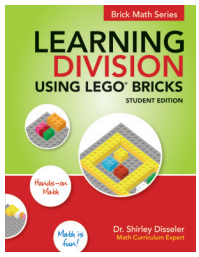




## Companion Student Editions

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