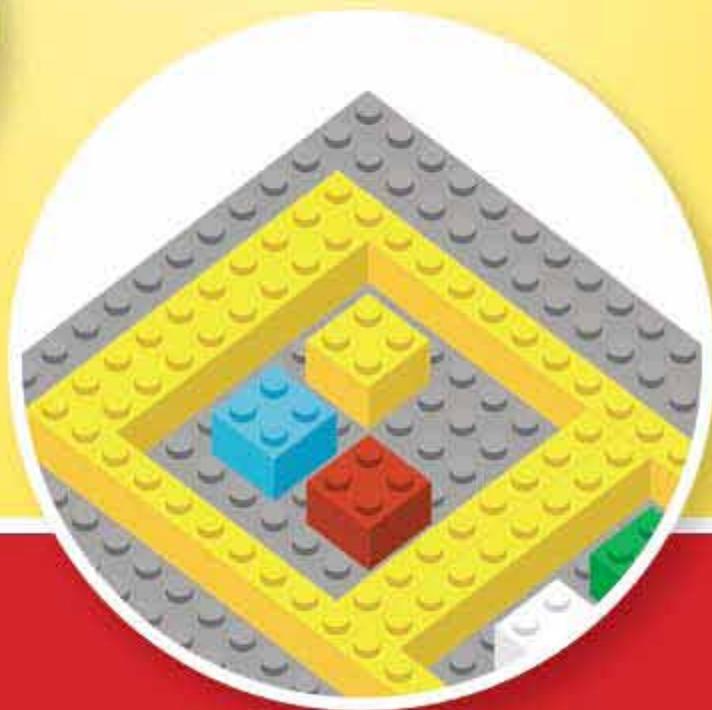
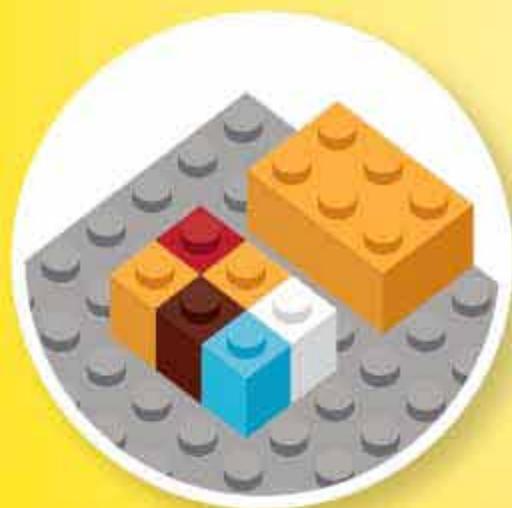


Brick Math Series

# TEACHING DIVISION USING LEGO® BRICKS



Dr. Shirley Disseler  
Math Curriculum Expert

Brick Math Series

# TEACHING DIVISION USING LEGO® BRICKS

Dr. Shirley Disseler





# USING A BRICK MATH JOURNAL

Journaling in math is an exciting way for students, teachers, and parents to review and share what is going on in the math classroom. A math journal is a resource that students can use for years to practice and review math concepts.

I recommend having your students start a Brick Math journal when you begin using LEGO® bricks to help teach math concepts. Here's how to use a Brick Math journal with the activities in this book: In each chapter, students begin in Part 1 (Show Them How) by building models that are teacher-directed. In Part 2 (Show What You Know), students build their own LEGO® brick models in response to specific prompts. Finally, students draw their LEGO® brick models on paper in their own Brick Math journals. The journal serves as a record of the physical models built that students can refer to over and over. The Brick Math journal can also serve as a form of assessment for teachers, a source for conferences, and as a way to identify if a student has any misconceptions in learning the topic.



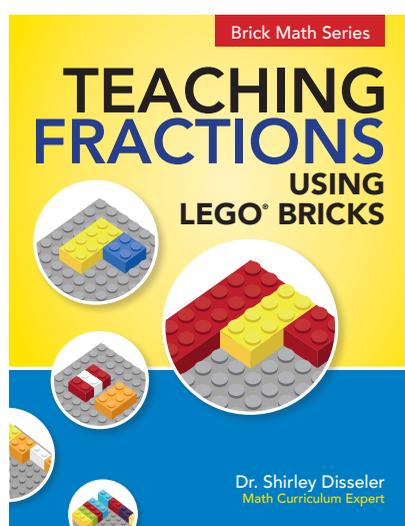
Use these steps to create a Brick Math journal:

- 1.** Use a composition book for each student. Set up pages one and two as the table of contents.
- 2.** Have students number each page on the top outside corner.
- 3.** Photocopy the base plate paper in the Appendix. Students will use the base plate paper to record their solutions, drawings, reflections, etc. Students will glue the base plate paper onto a journal page after they have drawn and colored their solutions.
- 4.** When students glue in their drawings, they should label them with the title of the activity and then make the entry in the journal's table of contents.

**Also in the Brick Math Series:**

# TEACHING FRACTIONS USING LEGO® BRICKS

Dr. Shirley Disseler



Teaching and learning fractions is easy using LEGO® bricks!

Teachers as well as parents can follow the step-by-step instructions to guide students as they learn to recognize fractions, to add and subtract fractions, and to find factors and equivalent fractions. Students model hands-on math problems with LEGO® bricks to develop true understanding of the concepts of fractions.

Math is fun when you're using LEGO® bricks to learn!

Author Dr. Shirley Disseler is Associate Professor at High Point University and Chair of the Department of Elementary and Middle Grades Education. She serves on the LEGO® Education Ambassadors Panel.

## **Companion student edition:**

### **LEARNING FRACTIONS USING LEGO® BRICKS**

Individual student book that follows the teacher's curriculum, complete with additional activities for practice and assessments.

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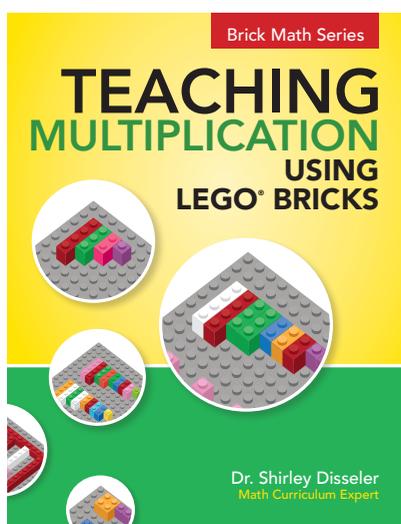
Quantity pricing and classroom packs available at 802-751-8802 or [neil@compasspublishing.org](mailto:neil@compasspublishing.org).



**Also in the Brick Math Series:**

# TEACHING MULTIPLICATION USING LEGO® BRICKS

Dr. Shirley Disseler



Teaching and learning multiplication is easy using LEGO® bricks!

Teachers as well as parents can follow the step-by-step instructions to guide students as they learn multiplication facts, one-digit multiplication, and two-digit and larger multiplication. Students model hands-on math problems with LEGO® bricks using a variety of techniques—sets, arrays, and place values—to develop true understanding of the concepts of multiplication.

Math is fun when you're using LEGO® bricks to learn!

Author Dr. Shirley Disseler is Associate Professor at High Point University and Chair of the Department of Elementary and Middle Grades Education. She serves on the LEGO® Education Ambassadors Panel.

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## PRAISE FOR THE BRICK MATH SERIES: TEACHING MATH USING LEGO® BRICKS

“I finally know what a fraction is. I can *see* it!”

—Student

“Why doesn’t everyone learn math this way?”

—Student

“As an elementary teacher, exploring varying methods of learning is always necessary. From the very first activity in *Teaching Multiplication Using LEGO® Bricks*, it is clear that this book is extremely useful for any student learning (or struggling with) multiplication. For example, when learning/discussing fact families, I have witnessed many students blindly memorizing the facts without truly understanding *why* there is a relationship between the facts. By using different sizes of LEGO® bricks in one of the activities in this book, students are able to build and then observe a visual representation of the fact families. The students are able to see that one 1x6 brick contains the same number of studs as two 1x3 bricks.

In my experience as an educator, students tend to deeply grasp a concept whenever they are fully immersed in the learning process. The activities in this book require students to think critically about the process of multiplication that so often becomes robotic. *Teaching Multiplication Using LEGO® Bricks* covers multiplication processes such as: bundling, repeated addition, using place value, using array models, one-to-one correspondence, and more. Rather than blindly following a set of steps, students are able to build and think critically about what is happening as the problem evolves.

This book is a must-have for any educators exploring multiplication!”

—Elementary Teacher

“As an instructional coach at an elementary school, I have been searching for a teacher-friendly text that emphasizes the educational aspects of LEGO® bricks. *Teaching Multiplication Using LEGO® Bricks* helps breathe life back into mathematics, particularly multiplication instruction. The progression from basic multiplication principles to two- and three-digit multiplication problems is seamless. The students’ understanding of these concepts is reinforced when using the LEGO® bricks, and the text encourages students to explain their findings. I recommend *Teaching Multiplication Using LEGO® Bricks* to everyone in education who wants to take the next step in hands-on learning.”

— Kelli Coons, Instructional Coach

“*Teaching Fractions Using LEGO® Bricks* is a great resource for children to learn about fractions with conceptual understanding and modeling. It’s hands-on, engaging, and overall an exciting way to learn about fractions. When you bring LEGO® bricks into the classroom the students automatically react with “ooh, cool!” and they are hooked on the activity. There is nothing better as a teacher than seeing your students enjoy learning, and using this resource, I see that. Another great feature about this resource is that it utilizes various learning modalities. Students learn physically by manipulating the LEGO® bricks, they draw the models for a visual reference, they write and describe concepts for a verbal understanding, and they are able to reason about the models and concepts to have a comprehensive understanding of fractions. Overall, this resource is phenomenal, and students are sure to be excited about math and fractions!”

—Tina Lupton, Teacher

“The visual models in *Teaching Fractions Using LEGO® Bricks* helped my students see and understand how equivalent fractions really work. The activities are super easy to follow and make learning operations with fractions fun for both the students and the teacher!”

— Jamie Piatt, Fifth Grade Teacher

## *Teaching Division Using LEGO® Bricks*

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Published by Brigantine Media/Compass Publishing  
211 North Avenue, St. Johnsbury, Vermont 05819

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St. Johnsbury, Vermont 05819  
Phone: 802-751-8802  
Fax: 802-751-8804  
E-mail: [neil@brigantinemedia.com](mailto:neil@brigantinemedia.com)  
Website: [www.compasspublishing.org](http://www.compasspublishing.org)

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[www.compasspublishing.org](http://www.compasspublishing.org)  
ISBN 978-1-9384065-7-7