Bridges in Mathematics Grade 5 Unit 1

Expressions, Equations & Volume

In this unit, your student will:

- Solve multistep story problems involving multiplication and division with remainders
- Multiply and divide multidigit numbers



- Demonstrate an understanding of volume of rectangular prisms and structures made from rectangular prisms
- Write expressions to record calculations with numbers

Your student will practice these skills by solving problems such as these:

PROBLEM		COMMENTS
Find the volume of this rectangular prism.		When finding the volume of a rectangular prism, students often start by thinking about equal layers of cubes. In this example, they can see 2 layers (the height) with 12 cubes in each layer, for a total volume of 24 cubes, or cubic units. While some students might recognize the formula for volume ($V = l \times w \times h$), it's not taught explicitly until later in the year.
Find the volume of this co Write an expression that s	pmposite rectangular prism. shows the total volume.	There are many ways to break apart a composite rectangular prism (a shape made up of rectangular prisms) and find its volume. The expression for each composite rectangular prism shows the volumes of the separate rectangular prisms, adding those volumes together to find the total volume (18 cubic units). The expression for each solution uses parentheses to identify the base of each rectangular prism. The parentheses are helpful but aren't mathematically necessary.
Working from back	Imagine moving the $(2 \times 2) \times 1$	-
to front	piece from the bottom layer to the top layer, making two rectangular	
$(2 \times 1) \times 4 +$ (2 × 1) × 3 +	prisms instead of three.	
$(2 \times 2) \times 1$	$(2 \times 2) \times 4 + (2 \times 1) \times 1$	



For additional support, you can use the Math Vocabulary Cards app at apps.mathlearningcenter.org.

Frequently Asked Questions About Unit 1

Q: Why do some of these activities look like what my student did in fourth grade?

A: This unit reviews mathematical concepts while introducing and establishing routines that will be used in fifth grade. There are also several new ideas in Unit 1, including finding the volume of rectangular prisms and learning conventions for writing and evaluating expressions. A variety of computational strategies are also reviewed and developed. For example, students already familiar with using landmark numbers to simplify such problems as 99×87 now have a way to communicate their thinking numerically and concisely: $99 \times 87 = (100 \times 87) - (1 \times 87)$.

Q: How can I support my student's learning?

A: To support your student in learning mathematics, you can:

- Start by helping students get used to the routines of the new year, and make sure homework is being done if your school assigns it.
- Visit <u>mathathome.mathlearningcenter.org</u> and work through some or all of the activities in Grade 5: Set 1 together. These activities complement the learning that takes place in the classroom during Unit 1 and provide fun ways to engage children in mathematical thinking. This set also includes digital versions of games that your student has learned at school, such as The Product Game and The Multiple Game.
- If concepts of volume measurement are familiar to you in your professional or personal lives, share this information with your student. This could be anything from buying a new refrigerator or designing or building a treehouse to playing with building blocks together.
- Visit <u>apps.mathlearningcenter.org</u> and invite your student to explore the Partial Product Finder app. Throughout Unit 1, students explore different ways to multiply whole numbers, and the Partial Product Finder app can help them see different ways to apply the partial products strategy.
- If your student would enjoy learning about math concepts through literature, consider looking for math-related books at your local library. Some suggestions include:
 - » Look, Grandma! Ni, Elisi! by Art Coulson, illustrated by Madelyn Goodnight
 - » The World Is Not a Rectangle: A Portrait of Architect Zaha Hadid by Jeanette Winters
 - » Perimeter, Area, and Volume: A Monster Book of Dimensions by David A. Adler, illustrated by Edward Miller

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