## Bridges in Mathematics Grade 5 Unit 3

# **Place Value & Decimals**

In this unit, your student will:

- Read, write, order, model, and compare decimal numbers
- Multiply and divide whole and decimal numbers by 10
- Add and subtract decimal numbers to the hundredths place
- Identify equivalent fractions and decimals
- Divide multidigit whole numbers



PROBLEM	COMMENTS
Write the number that each collection of base ten number pieces represents.	In this unit, students represent decimal numbers in a variety of ways. One way is by assigning base ten number pieces new values. The largest piece (which represents 100 when working with whole numbers) is now given a value of 1 whole, and the other pieces are assigned values relative to that. The visual model helps students make connections to their previous work with whole numbers. They point out, for example, that 10 hundredths are equivalent to 1 tenth, similar to how 10 ones were equivalent to 1 ten.
Write the base ten numeral that is equal to this expression. $(6 \times 1) + (4 \times \frac{1}{10}) + (9 \times \frac{1}{1,000}) = 6.409$ $(6 \times 1) + (4 \times 0.1) + (9 \times 0.001) = 6.409$	These expressions are written in expanded form. Writing numbers in expanded form — as well as rewriting them in standard form — helps students connect the value of each digit in the decimal number to its place value. In this example, 6.409 has a value of 0 in the hundredths place, so that place value isn't shown in the expression.

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

PROBLEM	COMMENTS
Give and take strategy for addition 1.93 + 0.07 2.00	Students apply strategies they learned for adding and subtracting whole numbers to adding and subtracting decimal numbers.
$\frac{+7.38}{-0.07} - \frac{+7.31}{-9.31}$ Constant difference strategy for subtraction	The give and take strategy includes rewriting the problem so that one addend is more friendly for adding. If you add any amount to one addend and take away the same amount from the other addend, the sum will stay the same.
7.78 + 0.11 7.89 $-2.89 + 0.11 - 3.00$ $+.89$	The constant difference strategy works because when you add or subtract the same amount from both numbers in a subtraction problem, the distance between the numbers does not change. That is, the difference remains the same.
Write a short problem situation about the division expression. Estimate the quotient. 276 ÷ 23 There were 276 students in 5th grade at P.S. 70 Elementary School. All of the 5th grade classes had the same number of students. How many classes were there? Estimate: 23 × 10 is not enough, so about 11 or 12 classes of 23 are needed.	When investigating whole number division, students are often asked to write a problem situation to match an expression. Creating a context for the expression gives meaning to the numbers in the problem. Estimating the answer allows students practice their mental math computations and gives them a way to check whether the final answer is reasonable.

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

## **Frequently Asked Questions About Unit 3**

### Q: Why does this unit have so much work involving rounding?

A: Rounding decimal numbers requires students to think explicitly about the place value of the digits in those numbers. It also encourages them to think about the relationships among decimal numbers and whole numbers. Rounding is also a useful skill itself — it promotes a strong number sense and helps students make sensible estimates.

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

- A: Invite your student to share how they are learning about decimals in school, which might be different than how you learned about them. Pose questions about adding and subtracting money, or involve your student in shopping and adding up the cost of two or more items. To further support your student in learning mathematics, you can:
  - Visit <u>mathathome.mathlearningcenter.org</u> and work through some or all of the activities in Grade 5: Set 3 together. These activities complement the learning that takes place in the classroom during Unit 3 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 Draw & Compare Decimals.
  - Visit <u>apps.mathlearningcenter.org</u> and invite your student to explore the Number Pieces and Number Line apps. Throughout Unit 3, students use these models to conceptually understand working with decimal numbers.
  - If your student would enjoy learning about math concepts through literature, consider looking for mathrelated books at your local library. Encourage your student to read to you and discuss the main characters' mathematical reasoning. Some suggestions include:
    - » Tía Isa Wants a Car by Meg Medina, illustrated by Claudio Muñoz
    - » Millions to Measure by David M. Schwartz, pictures by Steven Kellogg

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