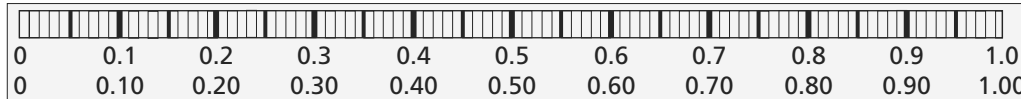


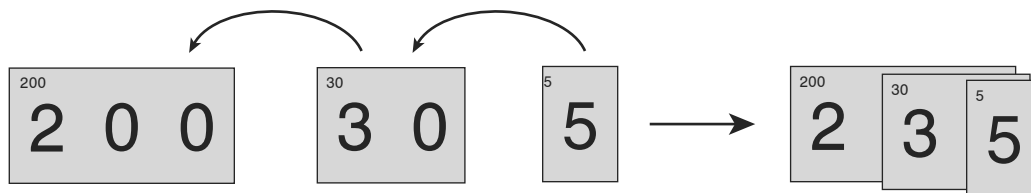
Teaching Unit 2 (Continued)

Place Value Concepts

Unit 2 broadens and deepens students' experiences with large numbers and decimal numbers, which are explored to billions and billionths. Students name these numbers and compare them ($0.52 < 0.6$), visualizing their comparative size and location within the place value system. A special feature on the MathBoard allows students to visualize tenths and hundredths and to establish equivalent decimals. Money is also used as a conceptual support.



Secret Code Cards show place values and are also used to show larger values.

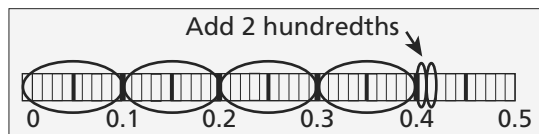


By the end of Unit 2, students will acquire a comprehensive understanding of place value and how the large numbers and decimal numbers relate to each other. The Place Value Parade helps everyone see the repeated ten-for-one trades between places and the symmetry around the ones place. Money and the metric system are also related. This visual aid is displayed in the classroom and used repeatedly as a reference tool.

← × 10 (Larger)			Place Value Parade	→ ÷ 10 (Smaller)		
Thousands	Hundreds	Tens	ONES	Tenths	Hundredths	Thousandths
1,000.	100.	10.	1.	0.1	0.01	0.001
$\frac{1,000}{1}$	$\frac{100}{1}$	$\frac{10}{1}$	$\frac{1}{1}$	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1,000}$
\$1,000.00	\$100.00	\$10.00	\$1.00	\$0.10	\$0.01	\$0.001
<u> </u> kilometer km	<u> </u> hectometer hm	<u> </u> dekameter dkm	<u> </u> meter m	<u> </u> decimeter dm	<u> </u> centimeter cm	<u> </u> millimeter mm

Computation

Using place value meaning supports, students examine the major aspects of adding and subtracting large numbers and decimal numbers: you must add or subtract like places, and you may need to group in addition (if you get 10 or more in a place) and ungroup in subtraction (to get enough to subtract from). Students analyze three addition methods: New Groups Below, New Groups Above, and Subtotal (see pages 204–205). They analyze two subtraction methods: Ungroup First and Alternate Steps (see pages 210–213). The MathBoard allows students to see why unlike places cannot be added.

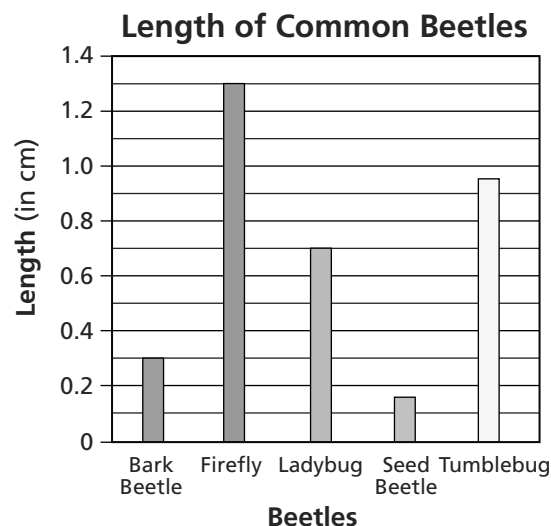
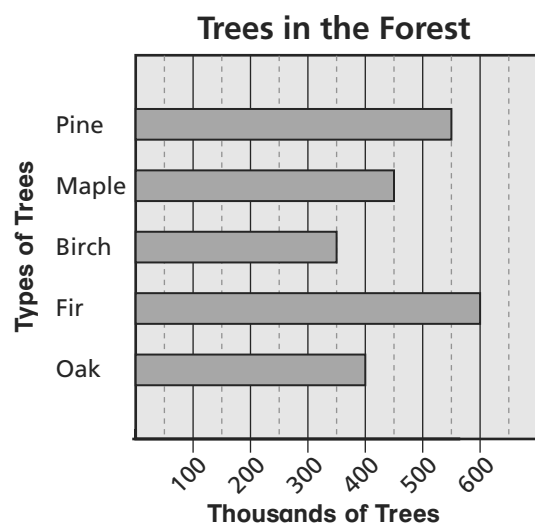


$$0.4 + 0.02 = 0.42$$

Real-World Applications

Word Problems Students pose and solve problems of all three types of addition and subtraction situations (Change, Collection, and Comparison) with large numbers and decimal numbers, and continue their use of algebraic expressions.

Graphs and Charts In the practical world, bar graphs, line graphs, and even picture graphs are often used to show very large numbers. They are sometimes used for decimal numbers as well. These visual applications give students a sense of place value intervals, midpoints, and relative size. They also provide situations for computation practice.



Teaching Unit 2 (Continued)

Fluency Days

Fluency Days provide students with in-class opportunities to assess themselves on basic multiplications and divisions. Students can monitor their own learning through the use of hands-on materials and quick activities that were first introduced in Grade 5 Unit 1. Copymasters of all necessary materials are located in the Teacher's Resource Book. If your students need more practice to build fluency, include a Fluency Day in your teaching plan for this unit or use one or more of these activities at any time for part of a lesson.

Diagnostic Quizzes (See Unit 1 Lesson 10)

These quizzes help students determine which multiplications and divisions they "automatically" know and which they still need to study. Distribute copies of the Multiplication Quiz, Division Quiz, or both to the class. Allow only 3 minutes for students to complete each quiz. Encourage students to work out any unfinished or missed problems in class and to take home their quizzes for further practice.

Division Cards (See Unit 1 Lesson 10 and Copymasters M5 through M14)

Students may practice with these cards individually or with a partner. Students first stack their cards so that the slanted corners line up on the right. Then, one student reads the problem, solves the problem mentally, and turns the card over to check his or her answer. Students then sort their Division Cards into *Fast*, *Slow*, and *Don't Know* piles. They practice the *Slow* and *Don't Know* piles. Students can practice multiplication by using the answer side and covering the product with their finger.

Games

The Factor Field (Unit 1 Lesson 10 and Copymaster M4) – Students practice their divisions by reading each division problem on their Division Cards and then placing the card on the *Factor Field* game board section that corresponds to the answer.

Factor the Footprints (Unit 1 Lesson 14 and Copymasters M15 and M16) – Students practice finding factors with a partner by naming all the possible factor pairs they can find for each number as they follow along the *Factor the Footprints* game board path.

Target Practice (See Unit 1 Lesson 3 and Copymaster M3)

The Target is used with students' multiplication tables. It may be used either independently or with an in-class practice partner. The shaded overlay with the transparent L-shape and Target circle can be moved to any product. The ends of the L show the factors, and the Target shows the product. Covering the product provides multiplication practice while covering one end of the L provides division practice. Students can use the multiplication tables on the back of the Student Activity or Homework and Remembering books.

Scrambled Multiplication Tables (See Unit 1 Lesson 11)

These scrambled tables are multiplication tables with the rows and columns moved around. Students complete the missing factors or products in each table.

Factor Puzzles (See Unit 1 Lesson 14)

Students use their knowledge of factors and products to fill in the rows and columns of the multiplication table from which the Factor Puzzle numbers come and multiply to solve the puzzle.

	5	3	
2	10	6	2
7		21	7
	5	3	