Chapter 14 Resource Masters

Includes:

Chapter Resources
- Graphic Organizer
- Student-Built Glossary
- Family Letter
- Anticipation Guide
- Game

Leveled Lesson Resources
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- Skills Practice
- Homework Practice
- Problem-Solving Practice
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All Answers Included
# Grade 4 Chapter 14
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Teacher’s Guide to Using the Chapter 14 Resource Masters

The Chapter 14 Resource Masters includes the core materials needed for Chapter 14. These materials include worksheets, extensions, and assessment options. The answers for these pages appear at the back of this booklet.

All of the materials found in this booklet are included for viewing and printing on the TeacherWorks Plus™ CD-ROM.

Chapter Resources

Graphic Organizer (page 1) This master is a tool designed to assist students with comprehension of grade-level concepts. You can use this graphic organizer in coordination with the appropriate lesson. While the content and layout of these tools vary, their goal is to assist students by providing a visual representation from which they can learn new concepts.

Student Glossary (page 2) This master is a study tool that presents the key vocabulary terms from the chapter. You may suggest that students highlight or star the terms they do not understand. Give this list to students before beginning Lesson 14-1. Remind them to add these pages to their mathematics study notebooks.

Anticipation Guide (page 6) This master is a survey designed for use before beginning the chapter. You can use this survey to highlight what students may or may not know about the concepts in the chapter. If feasible, interview students in small groups, asking them the interview questions in the guide. There is space for recording how well students answer the questions before they complete the chapter. You may find it helpful to interview students a second time, after completing the chapter, to determine their progress.

Game (page 7) A game is provided to reinforce chapter concepts and may be used at appropriate times throughout the chapter.

Resources for Lessons

Reteach Each lesson has an associated Reteach worksheet. In general, the Reteach worksheet focuses on the same lesson content but uses a different approach, learning style, or modality than that used in the Student Edition. The Reteach worksheet closes with computational practice of the concept.

Skills Practice The Skills Practice worksheet for each lesson focuses on the computational aspect of the lesson. The Skills Practice worksheet may be helpful in providing additional practice of the skill taught in the lesson. It also contains word problems that cover the skill. Spaces for students’ answers are provided on the worksheet.

Homework Practice The Homework Practice worksheet provides an opportunity for additional computational practice. The Homework Practice worksheet includes word problems that address the skill taught in the lesson. Spaces for students’ answers are provided on the worksheet.

Problem-Solving Practice The Problem-Solving Practice worksheet presents additional reinforcement in solving word problems that apply both the concepts of the lesson and some review concepts.

Enrich The Enrich worksheet presents activities that extend the concepts of the lesson or offer a historical or multicultural look at the lesson’s concepts. Some Enrich materials are designed to widen students’ perspectives on the mathematics they are learning.

Resources for Problem-Solving Lessons In recognition of the importance of problem-solving strategies, worksheets for problem-solving lessons follow a slightly different format. For problem-solving lessons, a two-page Reteach worksheet offers a complete model for choosing a problem-solving strategy. For each Problem-Solving
Strategy lesson, Reteach and Homework Practice worksheets offer reinforcement of the strategy taught in the Student Edition lesson. In contrast, the Problem-Solving Investigation worksheets include a model strategy on the Reteach worksheets and provide problems requiring several alternate strategies on practice worksheets.

Assessment Options
The assessment masters in the Chapter 14 Resource Masters offer a wide variety of assessment tools for monitoring progress as well as final assessment.

**Individual Progress Checklist** This checklist explains the chapter’s goals or objectives. Teachers can record whether a student’s mastery of each objective is beginning (B), developing (D), or mastered (M). The checklist includes space to record notes to parents as well as other pertinent observations.

**Chapter Diagnostic Assessment** This one-page test assesses students’ grasp of skills that are needed for success in the chapter.

**Chapter Pretest** This one-page quick check of the chapter’s concepts is useful for determining pacing. Performance on the pretest can help you determine which concepts can be covered quickly and which specific concepts may need additional time.

**Quizzes** Three free-response quizzes offer quick assessment opportunities at appropriate intervals in the chapter.

**Mid-Chapter Review** This one-page chapter test provides an option to assess the first half of the chapter. It includes both multiple-choice and free-response questions.

**Vocabulary Test** This one-page test focuses on chapter vocabulary. It is suitable for all students. It includes a list of vocabulary words and questions to assess students’ knowledge of the words.

**Oral Assessment** This two-page test consists of one page for teacher directions and questions and a second page for recording responses. Although this assessment is designed to be used with all students, the interview format focuses on assessing chapter content assimilated by ELL students. The variety of approaches includes solving problems using manipulatives as well as pencil and paper.

**Chapter Project Rubric** This one-page rubric is designed for use in assessing the chapter project. You may want to distribute copies of the rubric when you assign the project and use the rubric to record each student’s chapter project score.

**Foldables Rubric** This one-page rubric is designed to assess the Foldables graphic organizer. The rubric is written to the students, telling them what you will be looking for as you evaluate their completed Foldables graphic organizer.

**Leveled Chapter Tests**
- **Form 1** assesses basic chapter concepts through multiple-choice questions and is designed for use with on-level students.
- **Form 2A** is designed for on-level students and is primarily for those who may have missed the Form 1 test. It may be used as a retest for students who received additional instruction following the Form 1 test.
- **Form 2B** is designed for students with a below-level command of the English language.
- **Form 2C** is a free-response test designed for on-level students.
- **Form 2D** is written for students with a below-level command of the English language.
- **Form 3** is a free-response test written for above-level students.
- **Extended-Response Test** is an extended response test for on-level students.

**Student Recording Sheet** This one-page recording sheet is for the standardized test in the Student Edition.

**Cumulative Standardized Test Practice** This three-page test, aimed at on-level students, offers multiple-choice questions and free-response questions.

**Answers**
The answers for the Anticipation Guide and Lesson Resources are provided as reduced pages with answers appearing in black. Full size line-up answer keys are provided for the Assessment Masters.
Use this graphic organizer to take notes on Chapter 14: **Decimals**. Fill in the missing information.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>decimal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decimal point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tenth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hundredth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decimal equivalent</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Student-Built Glossary

This is an alphabetical list of new vocabulary terms you will learn in Chapter 14: Decimals. As you study the chapter, complete each term’s definition or description. Remember to add the page number where you found the term. Add this page to your math study notebook to review vocabulary at the end of the chapter.

<table>
<thead>
<tr>
<th>Vocabulary Term</th>
<th>Found on Page</th>
<th>Definition/Description/Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>decimal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decimal equivalent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decimal point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hundredth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mixed number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tenth</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Dear Family,

Today my class started Chapter 14: Decimals. I will be learning to identify, read, write, and model decimals for tenths and hundredths. I will also be learning to compare and order decimals. Here are my vocabulary words and an activity that we can do together.

Love, ________________

Key Vocabulary

**decimal** A number with one or more digits to the right of the decimal point, such as $2.05

**decimal point** A period separating the ones and the tenths in a number. Example: $2.95

**tenth** One of ten equal parts or $\frac{1}{10}$

**hundredth** A place value position. One of one hundred equal parts

**mixed number** A number named by a whole number and a fraction. Example: $2\frac{1}{2}$

**decimal equivalent** A fraction that has a denominator that is a factor of 10 or 100 that can be stated as a decimal

**Activity**

Collect 10 coins. Count the number of each coin. Write each amount in decimal form. Example: If you have 3 dimes out of 10 total coins, what would the decimal form of that statement be?

Books to Read

*Piece = Part = Portion* by Scott Gifford

*100th Day Worries* by Margery Cuyler

*Odds and Evens* by Heidi Goennel
Estimada familia:

Hoy mi clase comenzó el Capítulo 14: Los decimales. Aprenderé a identificar, a leer, a escribir y a modelar decimales para las décimas y las centésimas y también a comparar y a ordenar decimales. A continuación, están mis palabras de vocabulario y una actividad que podemos hacer juntos.

Cariños, ________________

Vocabulario clave

**decimal**  Número con uno o más dígitos a la derecha del punto decimal, como $2.05

**punto decimal**  Punto que se usa en un número. Ejemplo: $2.95

**décima**  Una de diez partes iguales ó $\frac{1}{10}$

**centésima**  Un valor de posición. Una parte de cien partes iguales

**número mixto**  Número compuesto por una parte entera y una parte fraccionaria. Ejemplo: $2\frac{1}{2}$

**fracción equivalente**  Fracción cuyo denominador es un factor de 10 ó 100 que se puede escribir como decima

Actividad

Reúnan 10 monedas. Cuenten el número de cada moneda que tienen. Escriban cada cantidad en forma decimal. Ejemplo: Si tienen 3 monedas de 10¢ de un total de 10 monedas, ¿cuál sería la forma decimal de ese enunciado?

Libros recomendados:

*Piece=Part=Portion* de Scott Gifford

*100th Day Worries* de Margery Cuyler

*Odds and Evens* de Heidi Goennel
**Anticipation Guide**

*Number, Operations, and Algebraic Thinking*

**Before you begin Chapter 14**

- Read each statement.
- Decide whether you agree (A) or disagree (D) with the statement.
- Write A or D in the first column OR if you are not sure whether you agree or disagree, write NS (not sure).

<table>
<thead>
<tr>
<th>STEP 1 A, D, or NS</th>
<th>Statement</th>
<th>STEP 2 A or D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A number with one or more digits to the right of the decimal point is a decimal.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>A decimal point is a point used in a number.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>One-tenth $= \frac{1}{10}$</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>$\frac{1}{10} = 0.10$</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>A hundredth is one of one hundred equal parts.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>A mixed number is a number named by a whole number and a fraction.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>24 is a mixed number.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>$3\frac{4}{5}$ is a mixed number.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>A fraction that has a denominator that is a factor of 10 or 100 can be stated as a decimal.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>$\frac{2}{10} = 0.2$</td>
<td></td>
</tr>
</tbody>
</table>

**After you complete Chapter 14**

- Reread each statement and complete the last column by entering an A (agree) or a D (disagree).
- Did any of your opinions about the statements change from the first column?
- For those statements that you mark with a D, use a separate sheet of paper to explain why you disagree. Use examples, if possible.
Chapter 14 Game

Make It Low!

**Ready**

You will need:
- 2 number cubes
- paper and pencils

**Set**

Give each player a sheet of paper and a pencil. Each player starts with 100 points.

**GO!**

1. Have the first player toss the number cubes and form a decimal number from the digits tossed (the cubes are used as ones and tenths).
2. Subtract the decimal from your total points.
3. Take turns tossing the cubes, creating the decimals, and subtracting. The player with the lowest number of points at the end of 15 rounds is the winner.
Reteach

Tenths and Hundredths

You can use a model and a place-value chart to read and write decimals. A model and a place-value chart can also help you write a fraction for a decimal.

Using Models

Think: \( \frac{5}{10} = \frac{1}{2} \)

Using a Place-Value Chart

<table>
<thead>
<tr>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Think: \( 0.5 = \frac{5}{10} = \frac{1}{2} \)

<table>
<thead>
<tr>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Think: \( \frac{60}{100} = \frac{6}{10} = \frac{3}{5} \)

Write a fraction and a decimal for each shaded part. Then write the fraction in simplest form.

1. [Diagram of shaded part]
2. [Diagram of shaded part]
3. [Diagram of shaded part]
4. [Diagram of shaded part]
5. [Diagram of shaded part]
6. [Diagram of shaded part]
Skills Practice

Tenths and Hundredths

Write a fraction and a decimal for each shaded part.

1. [Shaded grid]
   \[
   \frac{3}{10} \quad \text{and} \quad 0.3
   \]

2. [Shaded grid]
   \[
   \frac{4}{10} \quad \text{and} \quad 0.4
   \]

3. [Shaded grid]
   \[
   \frac{1}{10} \quad \text{and} \quad 0.1
   \]

4. [Shaded grid]
   \[
   \frac{2}{10} \quad \text{and} \quad 0.2
   \]

Write each fraction as a decimal.

5. \[
\frac{2}{10} \quad \text{and} \quad 0.2
\]

6. \[
\frac{7}{10} \quad \text{and} \quad 0.7
\]

7. \[
\frac{3}{10} \quad \text{and} \quad 0.3
\]

8. \[
\frac{7}{100} \quad \text{and} \quad 0.07
\]

9. \[
\frac{1}{100} \quad \text{and} \quad 0.01
\]

10. \[
\frac{1}{10} \quad \text{and} \quad 0.1
\]

11. \[
\frac{2}{100} \quad \text{and} \quad 0.02
\]

12. \[
\frac{96}{100} \quad \text{and} \quad 0.96
\]

Write as a fraction and as a decimal.

13. two tenths \[
\frac{2}{10} \quad \text{and} \quad 0.2
\]

14. fifteen hundredths \[
\frac{15}{100} \quad \text{and} \quad 0.15
\]

15. six hundredths \[
\frac{6}{100} \quad \text{and} \quad 0.06
\]

16. three tenths \[
\frac{3}{10} \quad \text{and} \quad 0.3
\]

17. twenty-one hundredths \[
\frac{21}{100} \quad \text{and} \quad 0.21
\]

18. fifty-six hundredths \[
\frac{56}{100} \quad \text{and} \quad 0.56
\]

19. five tenths \[
\frac{5}{10} \quad \text{and} \quad 0.5
\]

20. seventeen hundredths \[
\frac{17}{100} \quad \text{and} \quad 0.17
\]

21. ninety-nine hundredths \[
\frac{99}{100} \quad \text{and} \quad 0.99
\]

22. two tenths \[
\frac{2}{10} \quad \text{and} \quad 0.2
\]

23. eight tenths \[
\frac{8}{10} \quad \text{and} \quad 0.8
\]

24. three hundredths \[
\frac{3}{100} \quad \text{and} \quad 0.03
\]

Solve.

25. Peter’s house is 0.78 mile from school. Write the number in words.
   \[
   \text{seven hundred eighty thousandths}
   \]

26. Lora walks for five tenths of an hour. Write the number as a decimal. \[
0.5
\]
Write a fraction and a decimal for each shaded part.

1. 

2. 

3. 

4. 

5. 

Write the fraction as a decimal.

6. \( \frac{3}{10} \) 

7. \( \frac{45}{100} \) 

8. \( \frac{68}{100} \) 

9. \( \frac{5}{100} \) 

10. \( \frac{1}{10} \) 

Write as a decimal.

11. Marty caught \( \frac{4}{10} \) of an inch of rain in his rain gauge. _____

12. \( \frac{48}{100} \) of the students were girls. _____

13. thirty-seven hundredths _____

14. twenty-five hundredths _____

15. seven-tenths _____

Spiral Review

Write each as an improper fraction or mixed number. (Lesson 13-9)

16. \( 4 \frac{8}{9} \) 

17. \( 4 \frac{5}{6} \) 

18. \( 3 \frac{7}{5} \)
Problem-Solving Practice

Tenths and Hundredths

Solve.

1. Three-tenths of the students who use the recreation center play in the softball league. What is this fraction as a decimal?

2. About half of the students who play soccer also play basketball. What is this number as a fraction? As a decimal?

3. It has been a dry summer in Texas. Last Thursday, nine-hundredths of an inch of rain finally fell in the town of Conway. What is this as a decimal?

4. Tony spent \(\frac{7}{10}\) as much time practicing on his piano as he spent practicing soccer. How much time is that in decimal form?

5. Last winter, it snowed two and a half inches in the town of Pratt. When the snow melted, the weather station recorded the total precipitation as twenty-three hundredths of an inch. How could they have expressed this as a decimal?

6. Liam called 10 parks one Sunday. He discovered that 3 of them were being used for soccer matches. What would that be as a fraction?

   As a decimal?

   Suppose Liam had called 100 parks. If he discovered \(\frac{3}{10}\) of them were being used for soccer matches, how many parks would that be?

   ___________ parks
Enrich

Decimal Color

Look at these base ten models. There are 4 large whole squares. Each square is made up of 100 small squares. There are 10 rows of 10 small squares. Color the models to represent these three numbers.

0.25 0.76 1.58
red yellow blue
Decimals Greater Than 1

A mixed number is made up of a whole and a part of a whole. You can use models to help you write mixed numbers as decimals.

Mixed number: \(1 \frac{7}{10}\)
Decimal: 1.7
Read: one and seven tenths

Mixed number: \(2 \frac{36}{100}\)
Decimal: 2.36
Read: two and thirty-six hundredths

Write a mixed number and decimal for each shaded part.

1. \(\frac{3}{10}\)
2. \(\frac{6}{10}\)
3. \(\frac{4}{10}\)
4. \(\frac{5}{10}\)

Write each as a decimal.

5. \(1 \frac{9}{10}\)
6. \(3 \frac{5}{100}\)
Skills Practice
Relate Mixed Numbers and Decimals

Write each as a mixed number and decimal.

1. 

2. 

3. 

Write each as decimal.

4. \(7 \frac{3}{10}\)

5. \(1 \frac{25}{100}\)

6. \(9 \frac{5}{100}\)

7. \(8 \frac{12}{100}\)

8. \(6 \frac{2}{100}\)

9. \(17 \frac{7}{10}\)

10. \(8 \frac{5}{100}\)

11. \(3 \frac{3}{100}\)

12. \(9 \frac{1}{10}\)

13. \(2 \frac{9}{10}\)

14. \(8 \frac{13}{100}\)

15. \(25 \frac{1}{100}\)

16. \(18 \frac{98}{100}\)

17. \(1 \frac{5}{100}\)

18. \(10 \frac{1}{100}\)

19. \(11 \frac{3}{100}\)

20. \(6 \frac{6}{100}\)

21. \(19 \frac{37}{100}\)

22. \(23 \frac{8}{10}\)

23. \(7 \frac{6}{100}\)

24. eight and three tenths

25. seven and seventy hundredths

Solve.

26. Out of 100 pairs of shoes in a sporting goods store, 53 pairs are running shoes. What decimal shows the number of pairs of running shoes?

27. Out of 100 backpacks, 2 are red and the rest are green. What decimal shows the number of red backpacks?
Write each as a mixed number and decimal.

1. [Diagram] 2. [Diagram]

\[ \frac{\text{_______}}{\text{_______}} \quad \frac{\text{_______}}{\text{_______}} \]

3. two and thirty-one hundredths

4. seventy-eight hundredths

Write each as a decimal.

5. \(4\frac{8}{10}\)

6. \(11\frac{1}{100}\)

7. \(8\frac{90}{100}\)

8. \(9\frac{19}{100}\)

Write a fraction and a decimal for each shaded part.

9. [Diagram]

10. [Diagram]

Spiral Review

Write as a fraction and as a decimal.

11. twenty-two hundredths

12. sixty-four hundredths
1. The school bell rings for 7 and \(\frac{21}{100}\) of a second. What is the decimal form for how long the bell rings?

2. In a speed-skating race, the winning skater’s time was \(\frac{435}{100}\) seconds faster than the second-place skater. What is the decimal for this fraction?

3. Alan used graph paper to show the length of the ring on his cell phone. If each grid is equal to one second, what is the length of the ring? Write the answer as a mixed number in simplest form and as a decimal.

4. Jana used graph paper to show how many miles it is from her house to school. If each grid is equal to one mile, how far is Jana’s house from school?

5. Judy and Trish read that the total rainfall in their town was, “two and thirty-four hundredths of an inch.” Judy wrote that fraction as \(2\frac{34}{100}\) inches. Trish wrote it as \(2\frac{17}{50}\) inches. Who was right? Explain.

Using decimal form, how much rainfall did their town receive?
We use tenths and hundredths to talk about money and distance, and more. Translate the underlined part of each expression into a decimal.

**Expression** | **Decimal**
--- | ---
1. The rope is three-and-a-half meters long. | 
2. Sophia spent five dollars and thirty-seven cents. | 
3. Jerry ran the mile in four minutes flat. | 
4. The patient’s temperature is ninety-eight point six. | 
5. We used two-and-a-quarter pounds of ground beef. | 
6. The punch recipe calls for one-and-a-fourth liters of club soda. | 
7. Harvey lives ten-and-a-half blocks away. | 
8. Kelly cycled three-quarters of the way across the state. | 
9. The plane flew at a speed of five hundred point six miles per hour. | 
10. The birthday present costs a hundred dollars and fifty cents. |
Reteach

**Problem-Solving Strategy: Make a Model**

Alicia baked 24 muffins for her class bake sale. They sell for $0.50 for 4. How much money will she make for her class?

<table>
<thead>
<tr>
<th>Step 1 Understand</th>
<th>Be sure you understand the problem.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What do you know?</td>
</tr>
<tr>
<td></td>
<td>• Alicia baked _____ muffins.</td>
</tr>
<tr>
<td></td>
<td>• Muffins sell for _______ for _____.</td>
</tr>
<tr>
<td></td>
<td>• You need to find how much her</td>
</tr>
<tr>
<td></td>
<td>___________________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 Plan</th>
<th>Make a plan.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Make a model by drawing the muffins in groups of 4 with a $0.50 tag on each group.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 3 Solve</th>
<th>Carry out your plan.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Add up the $0.50 tags for all 6 groups.</td>
</tr>
<tr>
<td></td>
<td>So, 24 muffins will make $3.00 for the class.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 4 Check</th>
<th>Is the solution reasonable?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reread the problem.</td>
</tr>
<tr>
<td></td>
<td>How can you check your answer?</td>
</tr>
</tbody>
</table>

**Solve using the make a model strategy.**

1. Isabel makes and sells pairs of earrings. She uses 5 beads for each earring and charges $0.25 per bead. How much will 10 pairs of earrings sell for? _________________

2. There are 2 elephants in a circus act. In their routines, each act uses 2 other animals. How many animals perform altogether? _________________

3. Mrs. Lee decides to make apple pies. If there are 5 apples in each pie and she makes 4 pies, how many apples will she use altogether? _________________
4. Elizabeth has 12 flowerpots. One half of the flowerpots have roses in them. One third of the flowerpots have sunflowers in them. The rest of the flowerpots have daisies in them. How many flowerpots have sunflowers in them? How many flowerpots have daisies in them?

5. Rachel opened 6 packages of paper for her scrapbook. Each package of paper had 20 sheets of blue paper and half as many sheets of green paper. How many total sheets of paper were there?

6. Brianna rollerbladed 2 miles. Then she returned home to get her friend. They rollerbladed together for 3 miles. How far did Brianna go altogether?

7. In the school play, there are 12 props in the first act. There are 33 different props in the second act and 23 different props in the third act. How many different props are there in all?
Solve. Use the make a model strategy

1. There are 4 jars of fingerpaint in a box. Each child will get 2 jars to use to paint. If there is a class of 16 children, how many boxes of paint will they need?

2. Ron walked to the store which was 8 blocks away. Then he walked 6 blocks to the park. He had to stop back at the store because he forgot to get something, and then he went home. How many blocks did he walk?

3. There were 3 cats at the pet shop. The first cat had 6 kittens. The other two cats each had 8 kittens. What was the total number of cats in the pet shop after the kittens were born?

4. If you have a box of 96 crayons that you want to share with 11 classmates, how many crayons will each classmate receive? Hint: Don’t forget to keep crayons for yourself.

5. Write a problem that can be solved by making a model. Then, ask a classmate to solve the problem.
Solve. Use the **make a model** strategy.

1. Manuel makes and sells birdhouses. He uses 7 pieces of wood for each birdhouse and he pays $1.59 for each piece of wood. If he makes a $4.87 profit per birdhouse, how much is he charging for each birdhouse? How much would a larger birdhouse using 12 pieces of wood with the same profit cost?

2. Marsha collects dolls. She has 18 dolls with brown hair, 14 dolls with black hair, and 4 dolls with blonde hair. What fraction of the dolls have black hair?

3. You are having a family reunion and 5 dozen people will be attending. If you figure two ears of corn per person, how many ears of corn will you need?

4. Mark’s older brother does lawn care. He charges $22 to mow a lawn up to 500 square feet. For lawns more than 500 square feet, he charges an additional $5 for each 100 additional square feet. How much will it cost to have Mark’s brother mow a lawn that is 20 feet long and 25 feet wide? What is the cost for a lawn that is 30 feet long and 30 feet wide?

---

**Spiral Review**

Write each as a mixed number and decimal. (Lesson 14–2)

5. five and nineteen hundredths

6. two and forty-five hundredths

7. eighty hundredths
Use the numbers in the box to complete the magic square below. A square is “magic” if the numbers in every row, every column, and both diagonals add up to the same number. In this case the sum is 7.2.

```
2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8
```

```
  2.4

```
You can use models to compare and order decimals. Order the numbers from least to greatest.

### Compare the decimals.
Since $2 < 3$, $2.75 < 3.63$ and $3.68$
Since $\frac{63}{100} < \frac{68}{100}$, $3.63 < 3.68$.

### Order the decimals.
Think: $2.75 < 3.63 < 3.68$.
The order from least to greatest is $2.75, 3.63, 3.68$.

### Compare. Write $>$, $<$, or $=$.
1. $0.75 \bigcirc 0.7$
2. $0.66 \bigcirc 0.77$
3. $0.06 \bigcirc 0.60$
4. $0.29 \bigcirc 0.25$
5. $0.24 \bigcirc 0.33$
6. $0.03 \bigcirc 0.30$

### Order from least to greatest.
7. $0.75, 0.66, 0.7$
8. $0.06, 0.77, 0.60$
9. $0.29, 0.25, 0.24$
10. $0.33, 0.03, 0.30$
Skills Practice

Compare and Order Decimals

Compare. Write $>$, $<$, or $=$.

1. $0.2 \bigcirc 0.02$
2. $0.7 \bigcirc 0.70$
3. $1.78 \bigcirc 1.87$
4. $12.16 \bigcirc 12.16$
5. $0.10 \bigcirc 0.16$
6. $5.11 \bigcirc 5.10$
7. $11.99 \bigcirc 12.1$
8. $11.1 \bigcirc 10.1$
9. $9.06 \bigcirc 9.16$
10. $6.5 \bigcirc 5.9$
11. $2.1 \bigcirc 0.2$
12. $10.3 \bigcirc 10.30$
13. $16.75 \bigcirc 16.57$
14. $14.44 \bigcirc 14.54$
15. $18.01 \bigcirc 18.11$
16. $9.1 \bigcirc 9.09$
17. $21.12 \bigcirc 22.13$
18. $16.06 \bigcirc 16.6$

Order from greatest to least.

19. $1.78, 1.08, 1.87$
20. $0.88, 0.08, 0.98$
21. $1.11, 1.21, 0.22$
22. $10.02, 9.9, 10.12$

Order from least to greatest.

23. $0.01, 0.1, 1.00$
24. $2.22, 2.02, 2.12$
25. $6.07, 5.99, 6.17$
26. $1.06, 1.16, 0.99$

Solve.

27. On Monday Ken ran 100 meters in 11.2 seconds. On Tuesday he ran 100 meters in 10.9 seconds. On which day did Ken run faster?

28. Jadwin Bridge is 1.6 kilometers long. Seely Bridge is 1.06 kilometers long. Which bridge is longer?
Compare. Write >, <, or =.

1. 0.85 8.50 3. 1.35 3.15 5. 2.65 2.65
2. 5.72 57.2 4. 0.17 0.87 6. 8.41 8.4

Order from greatest to least.
7. 0.3, 0.38, 0.31, 0.40 9. 1.9, 0.09, 0.19, 1.19
   _____, _____, _____, _____  _____, _____, _____, _____
8. 8.2, 0.82, 8.02 10. 3.1, 0.13, 0.03, 3.03
   _____, _____, _____  _____, _____, _____, _____

Order from least to greatest.
11. 24.06, 2.41, 24.1, 24.16 13. 6.10, 6.01, 6.11, 6.14
   _____, _____, _____, _____  _____, _____, _____, _____
12. 4.98, 49.8, 4.08 14. 5.05, 5.5, 0.55, 5.15
   _____, _____, _____  _____, _____, _____, _____

Solve. Use the make a model strategy. (Lesson 14–3)
15. Amir’s high school track is 400 meters. He runs 8,000 meters at the track, four times a week. How many laps around the track does Amir run in one week?
   ____________________________________________

16. Jake is painting his kitchen. The kitchen has 2 walls that are 14 feet long and 10 feet high. If one gallon covers 100 square feet, how many gallons will Jake need to paint his kitchen?
   ____________________________________________
1. Enrique averages 6.8 assists per game. Lorena averages 7.2 assists per game. Gilberto averages 5.9 assists per game. Who averages the most assists?

2. Many kids grow an average of 1.4 inches a year. If you grew 2.8 inches and your friend grew 1.2 inches, who grew more? Who was closer to the average amount? How much more did you grow than the average amount?

3. If California received 2.1 inches of rain in January, 2.4 inches of rain in February, and 1.8 inches of rain in March, how much total rain did they receive? List the months in order of the most to least rain.

4. Martina plays tennis for 3.5 hours a day. Jenna plays tennis for 3.75 hours a day, and Marcus plays for 2.8 hours a day. List the number of hours played from greatest to least.

5. Olivia scored an average of 15.8 points a game, James scored an average of 17.1 points, and Joaquin scored an average of 18.4 points per game. Who had the best average? _____________

6. Sean played a game of cards in 14.3 minutes. He played a second game in 13.8 minutes. Which game did he play faster?

7. Lauren, Kim, and Jackie each had different heights in centimeters. Compare their heights and list them from the shortest to tallest.

<table>
<thead>
<tr>
<th>Name</th>
<th>Height (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lauren</td>
<td>167.64</td>
</tr>
<tr>
<td>Kim</td>
<td>152.4</td>
</tr>
<tr>
<td>Jackie</td>
<td>161.54</td>
</tr>
</tbody>
</table>
From Acadia National Park (in Maine) to Zion National Park (in Utah) the National Park Service manages 84.6 million acres of national park land.

Circle the letter of the lesser number in each pair. Then use the circled letters to spell the name of a well-known national park.

1. C S
   4.52 4.25

2. E A
   0.1 0.18

3. G L
   0.75 0.68

4. M N
   3.45 2.34

5. O H
   1.02 2.01

6. R T
   0.44 0.40

7. V W
   0.10 0.02

8. Y Z
   0.28 0.3

9. A L
   0.86 0.68

10. O R
    3.96 6.93

11. E I
    0.23 2.23
Kyle bought birthday balloons for his brother, Jin. Their friends, Steve, Ryan, and Dan, each held one balloon, and Kyle’s mom and dad both held 3 balloons. Kyle and Jin had twice as many balloons as their mom and dad. How many balloons did they have altogether?

**Step 1 Understand**

**Be sure you understand the problem.**

What do you know?

- Kyle bought balloons for his brother.
- Their 3 friends each held ____ balloon.
- Mom and Dad each held ____ balloons.
- Kyle and Jin each held ________ balloons.

**Step 2 Plan**

- Use logical reasoning
- Solve a simpler problem
- Make a model
- Draw a picture
- Look for a pattern

**Make a plan.**

Choose a strategy.

You may draw a picture. Draw each person with the number of balloons they were holding.

You can also use a four-step plan.

**Step 3 Solve**

**Carry out your plan.**

Plan 1 Draw a picture.

Draw the 7 people at the party with their balloons. Add them up.

$$1 + 1 + 1 + 3 + 3 + 6 + 6 = 21$$
Reteach (continued)

Problem-Solving Investigation: Choose a Strategy

Plan 2 Use the four step plan.
Decide what facts you know. Plan what you will do and in what order. Use your plan to solve the problem. Then check your solution to make sure it makes sense.

Step 4 Check
Is the solution reasonable?
Reread the problem.
How can you check your answer?
______, ______

Use any strategy shown below to solve.

- Use logical reasoning
- Draw a picture
- Solve a simpler problem
- Look for a pattern
- Make a model

1. Jamie had an aquarium with 8 fish. He had half as many plants, twice as many small rocks, and a quarter the amount of filters. How many plants, rocks, and filters did he have?

2. Each morning, Joanna jogs with her dog. They jog for 2 miles and walk for 1 mile. How many miles do they walk in 1 week? How many miles do they jog in 10 days?

3. Julio has 4 cats and 2 dogs. How many total legs do his animals have? How many ears altogether?

4. Martina ran the 100 meter dash in 14.8 seconds and her friend Sandra ran it in 14.2 seconds. Who won? How much time did she win by?
Skills Practice

Problem-Solving Investigation: Choose a Strategy

Use any strategy shown below to solve.

• Use logical reasoning
• Solve a simpler problem
• Make a model
• Draw a picture
• Look for a pattern

1. Carlos had a 55 gallon aquarium with 18 fish. He had half as many plants, twice as many small rocks, and one-sixth the amount of filters. How many plants, rocks, and filters did he have?

2. Each morning, Mario walks his pet dog. They walk for 3 miles. How many miles do they walk in 1 week? How many miles do they walk in 10 days?

3. Joanna has 10 kinds of nail polish. If she uses 2 kinds in a week, how many weeks will it take to use all of them?

4. A building is 45 stories high. Every fifth story is residential and the rest of the building is offices. Laura lives on the third story that is residential. What number will she press on the elevator to go to her home if the ground level is floor 1?

5. You saved your money from gifts and allowance and you were able to buy a scooter for $99.39 and pair of shoes for $24.25. If you still have $16.98 left, how much money did you start out with?

6. Ron’s mother bought a dozen flowers for $19.99. Alfred’s mother bought 2 dozen of the same flowers for $38.98. Whose mother got the better deal?

7. What numbers come next in this pattern? What is the rule? 4, 2, 8, 6, 12, 10, ____, ____, ____.
Homework Practice

Problem-Solving Investigation: Choose a Strategy

Solve using any strategy shown below.

- Use logical reasoning
- Solve a simpler problem
- Make a model
- Draw a picture
- Look for a pattern

1. Video Rentals

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Videos</td>
<td>150</td>
<td>200</td>
<td>250</td>
</tr>
</tbody>
</table>

What are the total video sales for August, September, and October?

2. Each morning, Mario walks with his dog. They walk for 1.5 miles. How many miles do they walk in 1 week? How many miles do they walk in 2 weeks?

3. What number comes next in this pattern?
   What is the rule? 0, 2, 6, 3, 5, 9, 6, 8, ____, ____.

Spiral Review

Compare. Write >, <, or =. (Lesson 14-4)

4. 0.5  [ ]  0.50
5. 2.98  [ ]  2.89
6. 0.04  [ ]  0.4

Order from least to greatest.

7. 10.06, 10.16, 10.56, 11.06

8. 5.45, 5.25, 5.05
There are 3 quarters, 4 dimes, 5 nickels and 6 pennies in the pile of coins. There’s an old saying that two heads are better than one for solving problems. Work on this with a partner.

1. You and your partner each choose 1 coin. Add their value. Use a decimal to write the sum as a dollar value.

2. You and your partner each choose 2 coins. Add their value. Use a decimal to write the sum as a dollar value.

3. You and your partner each choose 3 coins. Add their value. Use a decimal to write the sum as a dollar value.

4. You and your partner each choose 4 coins. Add their value. Use a decimal to write the sum as a dollar value.

5. How much money is in the pile of coins?
Marsha runs in track and her workout includes a 3.5 mile run and a 0.5 mile warm down. What is the fraction equivalent for Marsha’s workout?

**Step 1 Understand**

Be sure you understand the problem.

What do you know?
- Marsha runs ____ miles for her workout.
- Her warm down is ____ miles.
- You need to find her workout in a

**Step 2 Plan**

Make a plan

To find the fraction equivalent to a decimal you can use a number line or model to show the equivalents.

Write the fraction with a 10 or 100 denominator.

**Step 3 Solve**

Carry out your plan.

Change the decimals 3.5 and 0.5 to fractions.

\[3 \frac{50}{100} \text{ or } 3 \frac{5}{10} \quad \text{and} \quad \frac{50}{100} \text{ or } \frac{5}{10} \quad \text{or} \quad \frac{1}{2}\]

\[3 \frac{1}{2} + \frac{1}{2} = 4\]

**Step 4 Check**

Is the solution reasonable?

Reread the problem and check your answer.

Write a fraction and decimal to describe the shaded part of each model.

1.  
2.  

---
Write a fraction and decimal to describe the shaded part of each model.

1. 

2. 

3. 

4. 

5. 

Write each fraction as a decimal.

6. \( \frac{36}{100} \) 

7. \( \frac{3}{4} \)

8. \( \frac{96}{100} \) 

9. \( \frac{18}{20} \)

10. \( \frac{1}{10} \)

11. Lauren collects frog figures. She has 4 orange frogs and 21 green ones. Write the proportion of the orange frogs out of the total frogs and the green frogs out of the total frogs as a fraction and a decimal.
Write a fraction and decimal to describe the shaded part of each model.

1. \[\frac{1}{3}\] 
   \[\frac{1}{3}\]

2. \[\frac{4}{7}\] 
   \[\frac{4}{7}\]

3. \[\frac{2}{5}\] 
   \[\frac{2}{5}\]

4. \[\frac{3}{4}\] 
   \[\frac{3}{4}\]

Write each fraction as a decimal.

5. \(\frac{77}{100}\) 
6. \(\frac{4}{5}\) 
7. \(\frac{12}{100}\) 
8. \(\frac{5}{25}\) 
9. \(\frac{1}{4}\)

Spiral Review

Use any strategy shown below to solve. (Lesson 14-5)

- Look for a pattern
- Solve a simpler problem
- Use logical reasoning
- Draw a picture
- Make a model

10. Nadia’s mom gave her $5 for lunch. Her two younger sisters each received $4 for lunch. Nadia’s mom had $19 left over. How much money did she start with? ________

11. What is the rule for the pattern shown? What number comes next?
   12, 16, 15, 19, _________________
1. Katarina made biscuits. She needed to use $2\frac{1}{4}$ cups of flour for 12 biscuits. If she made 24 biscuits, how much flour did she use written as a decimal?

2. Louis made a snack with bananas and crackers for his 2 friends and himself. He used 2 bananas and 9 crackers. How much banana did each person get if it was divided evenly? Write your answer as a fraction.

3. If California received an average of 14.1 inches of rain in 2006, Arizona received an average of 10.8 inches of rain, and Nevada received an average of 9.9 inches of rain, which was the state that received the most rain? Write the amount as a mixed number.

4. Thomas collects trains. He has 7 blue trains and $\frac{23}{30}$ are other colors. How many trains does Thomas have altogether?

5. Miriam has 100 buttons in her sewing basket. 28 of them are red, 52 of them are white, 10 are blue, and 10 are black. Write a fraction and a decimal to show how many red and white buttons she has.

6. There are 52 cards in a deck. $\frac{1}{4}$ of them are hearts, $\frac{1}{4}$ are spades, $\frac{1}{4}$ are diamonds, and $\frac{1}{4}$ are clubs. Write a fraction and decimal to show all the cards that are hearts and diamonds.
The base of this triangle is a number line. Fill up the triangle by writing a decimal (D), fraction (F), or a mixed number (M) to identify each location on the number line.

1. (D)  2. (F)  3. (M)  4. (M)  5. (D)  6. (D)  7. (M)
Reteach

Decimals, Fractions, and Mixed Numbers

To compare fractions and decimals, you can write the fractions as decimals and then compare.

You can use a number line to compare fractions and decimals.

Place a point on the line where each decimal or fraction belongs. Now you can see whether a decimal or fraction is equal to, greater than, or less than another number.

You can also use a place-value chart to compare numbers: \( \frac{4}{5}, 4.6, 4.5 \).

First, convert fractions to decimals, Example: \( \frac{4}{4} = 4.25 \)
Line up the decimals points.
Compare the tenths and hundredths place of each number.

<table>
<thead>
<tr>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

From least to greatest: \( \frac{4}{4}, 4.5, 4.6, \frac{4}{5} \).

Compare. Write >, <, or =.

1. \( 2.5 \) \( \bigcirc \) \( 2\frac{2}{3} \)
2. \( 7\frac{7}{8} \) \( \bigcirc \) \( 7.7 \)
3. \( 9.03 \) \( \bigcirc \) \( 9.3 \)
4. \( 6\frac{1}{10} \) \( \bigcirc \) \( 6.1 \)
5. \( \frac{5}{4} \) \( \bigcirc \) \( 1\frac{1}{4} \)
6. \( 13.2 \) \( \bigcirc \) \( 13\frac{2}{5} \)

Order from greatest to least.

7. \( \frac{3}{4}, 0.5, \frac{1}{4}, 0.3 \)
8. \( 5\frac{2}{5}, 5.3, 6.0, 5\frac{2}{4} \)
9. \( 10\frac{10}{100}, 10.15, 10\frac{5}{100}, 10.0 \)
Skills Practice

Decimals, Fractions, and Mixed Numbers

Compare. Write >, <, =.

1. \( \frac{4}{100} \)  \( \bigcirc \) \( \frac{40}{100} \)
2. \( 3.25 \)  \( \bigcirc \) \( 3\frac{1}{4} \)
3. \( \frac{4}{5} \)  \( \bigcirc \) \( 0.8 \)
4. \( 5.35 \)  \( \bigcirc \) \( 5\frac{3}{5} \)
5. \( 6.48 \)  \( \bigcirc \) \( 6\frac{4}{10} \)
6. \( 0.01 \)  \( \bigcirc \) \( \frac{1}{10} \)

Order from greatest to least.

7. \( 0.4, \frac{6}{100}, \frac{1}{5}, 0.35 \) ______________________
8. \( 25\frac{1}{4}, 25.5, 25\frac{1}{10}, 25\frac{1}{5} \) ______________________
9. \( 7\frac{7}{10}, 8.0, 7.65, 7\frac{4}{5} \) ______________________

ALGEBRA  Use the number line to compare. Write >, <, or =.

10. \( 1\frac{1}{6} \)  \( \bigcirc \) \( 1\frac{1}{8} \)
11. \( 1 \)  \( \bigcirc \) \( \frac{8}{8} \)
12. \( 2 \)  \( \bigcirc \) \( \frac{17}{8} \)

Solve.

13. Ben measures \( \frac{10}{4} \) cups of water. What is this as a mixed number? ________________
14. Claudia ran 4.3 miles on Monday. On Tuesday she ran \( 4\frac{1}{2} \) miles. On which day did Claudia run a longer distance? Explain.

15. Jared drank \( \frac{7}{4} \) cups of juice. Aida drank \( \frac{9}{6} \) cups. Who drank more juice? Explain. ________________
16. Mary worked \( 8\frac{1}{2} \) hours on Monday and \( 8\frac{3}{5} \) hours on Tuesday. On which day did she work longer? Explain.

____________________
Compare. Write >, <, or =.

1. \(3.05\) ___ \(\frac{3}{10} + \frac{11}{100}\)
2. \(\frac{5}{10}\) ___ \(0.49\)
3. \(0.04\) ___ \(\frac{4}{10}\)
4. \(1.35\) ___ \(1\frac{3}{10}\)
5. \(\frac{60}{100}\) ___ \(0.60\)
6. \(9.1\) ___ \(9\)

Order from greatest to least.

7. \(8.45, 8\frac{8}{10}, 8.81, 8\frac{38}{100}\)
8. \(0.27, \frac{4}{5}, 0.52, \frac{3}{4}\)
9. \(3.2, 2\frac{1}{4}, 3.19, 2\frac{24}{50}\)

Write a fraction or mixed number and decimal to describe the shaded part of each model. (Lesson 14-6)

10.

11.

12.

13.
Problem-Solving Practice
Decimals, Fractions, and Mixed Numbers

Solve.

1. Ana has a crayon that is 2.8 inches long. Monica has a crayon that is \(2\frac{3}{4}\) inches long. Who has the longer crayon?

2. Tori needs \(1\frac{1}{2}\) cups of flour to bake bread. Lance needs 1.45 cups of flour. Who needs more flour?

3. Ramon surveyed 100 students and found \(\frac{49}{100}\) of those surveyed like soccer best. \(\frac{3}{20}\) of those surveyed like volleyball best, and 0.36 like basketball best. Order the sports from least liked to most liked.

4. The hardware company has 100 tools. Of the tools \(\frac{3}{10}\) are hammers, 0.4 are saws, \(\frac{1}{5}\) are screwdrivers, and the rest are wrenches. Order the numbers from greatest to least.

5. Sandy uses \(2\frac{1}{4}\) blocks of wax to make candles. Martha uses 2.3 blocks of wax to make candles. Who uses more wax?
Many consider Muhammad Ali the greatest heavyweight boxer of all time. He first came to prominence at the 1960 Summer Olympics when he won a gold medal in boxing.

Muhammad Ali often talked about his boxing style. Discover one of his most famous quotes by renaming the decimals as fractions in simplest form. Then use the code key to find the letter that matches each fraction. Write the letter on the line above the decimal.

```
0.125 0.55 0.75 0.08 0.5 0.55 0.38 0.15 0.625 0.08
0.875 0.16 0.5 0.5 0.625 0.58 0.125 0.55 0.3
0.25 0.5 0.38 0.4 0.35 0.55 0.38 0.15 0.625
0.08 0.875 0.625 0.625.
```

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/25</td>
<td>7/8</td>
<td>9/40</td>
<td>1/5</td>
<td>5/8</td>
<td>1/8</td>
</tr>
<tr>
<td>G</td>
<td>H</td>
<td>I</td>
<td>J</td>
<td>K</td>
<td>L</td>
</tr>
<tr>
<td>7/20</td>
<td>17/20</td>
<td>19/50</td>
<td>1/10</td>
<td>3/20</td>
<td>11/20</td>
</tr>
<tr>
<td>M</td>
<td>N</td>
<td>O</td>
<td>P</td>
<td>Q</td>
<td>R</td>
</tr>
<tr>
<td>1/25</td>
<td>2/5</td>
<td>3/4</td>
<td>9/10</td>
<td>13/25</td>
<td>29/50</td>
</tr>
<tr>
<td>S</td>
<td>T</td>
<td>U</td>
<td>V</td>
<td>W</td>
<td>X</td>
</tr>
<tr>
<td>1/4</td>
<td>1/2</td>
<td>4/25</td>
<td>4/5</td>
<td>49/50</td>
<td>5/8</td>
</tr>
<tr>
<td>Y</td>
<td>Z</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/10</td>
<td>3/50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Individual Progress Checklist

<table>
<thead>
<tr>
<th>B</th>
<th>D</th>
<th>M</th>
<th>Goal</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Identify, read, write, and model decimals.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Relate decimals, fractions, and mixed numbers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Compare and order decimals.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Solve problems by making a model.</td>
<td></td>
</tr>
</tbody>
</table>

### Notes

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________
Chapter Diagnostic Assessment

Write a fraction, in simplest form, to describe the part that is shaded.

1. 
2. 
3. 

Write each as a fraction.

4. three-fifths
5. two-sevenths
6. one-third
7. fifty-hundredths

Write each amount using a decimal point and a dollar sign.

8. 45 cents
9. 12 cents
10. 87 cents
11. 70 cents

Fill in the missing number.

12. \( \frac{1}{4} = \boxed{\phantom{0}} \)
13. \( \frac{1}{3} = \boxed{\phantom{0}} \)
14. \( \frac{1}{2} = \boxed{\phantom{0}} \)
15. \( \frac{4}{5} = \boxed{\phantom{0}} \)
16. \( \frac{3}{5} = \boxed{\phantom{0}} \)
17. \( \frac{7}{8} = \boxed{\phantom{0}} \)
18. \( \frac{3}{4} = \boxed{\phantom{0}} \)
19. \( \frac{6}{7} = \boxed{\phantom{0}} \)
Chapter Pretest

Write the fraction or mixed number as a decimal.

1. \( \frac{73}{100} \)
2. \( \frac{3}{10} \)
3. \( 4 \frac{15}{100} \)
4. \( \frac{6}{10} \)
5. \( 25 \frac{7}{10} \)
6. \( 36 \frac{36}{100} \)
7. \( 9 \frac{2}{100} \)
8. \( 11 \frac{9}{10} \)

Compare. Write >, <, or =.

9. 5.7 \( \bigcirc \) 5.2
10. 10.08 \( \bigcirc \) 10 \( - \frac{8}{100} \)
11. 0.03 \( \bigcirc \) 0.3
12. \( \frac{1}{2} \) \( \bigcirc \) 0.2

Write the fraction and decimal to describe the shaded area.

13.

15.

14.

16.
Write a fraction and a decimal for each shaded part.

1. 
2. 
3. $\frac{6}{10}$
4. $\frac{18}{100}$

Write as a fraction and as a decimal.

5. forty-one hundredths

Write each as a mixed number and decimal.

6. 
7. 
8. 
9. three and fifty-six hundredths

10. two and ninety-eight hundredths

Write each as a decimal.

11. $6\frac{10}{100}$
12. $4\frac{75}{100}$
Compare. Write $>$, $<$ or $=$.

1. $0.25 \, \bigcirc \, 2.50$
2. $0.01 \, \bigcirc \, 0.11$
3. $0.47 \, \bigcirc \, 4.72$
4. $2.45 \, \bigcirc \, 0.24$

Order from greatest to least.

5. $0.45, 4.5, 4.8, 0.48$
6. $9.1, 0.91, 9.91, 9.01$

7. Warren went hiking with a friend for three weekends. The first weekend he hiked 12.25 miles, the second weekend he hiked 12.5 miles, and the third weekend he hiked 14.8 miles. Which weekend did he hike the least? Which weekend did he hike the most?

8. Solve using the make a model strategy.

8. Patrick is building a tower using 8 different sized boxes. He is building it from the bottom with the largest box up to the smallest box. The box thicknesses are $6.5\,\text{"}, 7.4\,\text{"}, 2.8\,\text{"}, 4.5\,\text{"}, 7.1\,\text{"}, 8.5\,\text{"}, 1.5\,\text{"},$ and $6.9\,\text{"}$. How tall is the tower? In what order are the boxes placed?

9. Augusto picked peaches for 3 days. The first day he picked 22 peaches. The second day he picked half as many. The third day he picked 6 more than the first day. How many peaches did he pick the second day? How many did he pick on the third day? How many total peaches did he pick?
Quiz 3  (Lesson 14–5 through 14–7)

Write a fraction and decimal to describe the shaded part of each model.

1.  

   

2.  

3.  

4.  

5.  

6.  

Compare. Write >, <, or =.

7.  

8.  

9.  

Solve.

10. Jacob practiced his piano lessons every day for 1.25 hours. How much did he practice in 1 week? In 10 days?

11. Kaleb made banana bread and cut it into 8 slices. He had 2 slices, his sister had 3 slices, and his mom had a slice. How much is left written as a fraction?
Mid-Chapter Review (Lessons 14–1 through 14–4)

Write a fraction or mixed number and a decimal for each shaded part.

1.  

2.  

3.  

4.  

Write as a fraction or mixed number and as a decimal.

5. forty-one hundredths

6. four and nineteen hundredths

Write each as a decimal.

7. $4\frac{9}{10}$

8. $3\frac{72}{100}$

Solve. Use the make a model strategy.

9. There are 24 crayons in a box. Each student will choose 5 crayons for an art project. If there is a class of 32 students, how many boxes of crayons will they need? What about a class of 24 students?
Vocabulary Test

Match each word to its definition. Write your answers on the line provided.

1. decimal _____  
   A. A place value position. One of one hundred equal parts.

2. decimal point _____  
   B. A number named by a whole number and a fraction.

3. tenth _____  
   C. A fraction that has a denominator that is a factor of 10 or 100 that can be stated as a decimal.

4. hundredth _____  
   D. A number with one or more digits to the right of the decimal point, such as $2.05.$

5. mixed number _____  
   E. A point used in a number.

6. decimal equivalent _____  
   F. One of ten equal parts or $\frac{1}{10}.$
Oral Assessment

Place 4 nickels, 3 dimes, 1 quarter, and 2 pennies on the table.

**Read each question aloud to the student. Then write the student’s answers on the lines below the question.**

1. What is the total number of coins on the table?

2. What is the decimal equivalent for the amount of nickels on the table?

3. What is the fraction equivalent for the amount of nickels on the table?

4. Tell how you got your answer.

5. What is the decimal equivalent for the amount of dimes on the table?

6. What is the fraction equivalent for the amount of dimes on the table?

7. What is the fraction equivalent for the amount of quarters on the table?
8. Who lives the farthest from the state park?

9. Who lives the closest to the state park?

10. Prove your answer.

11. What is the order of distance from least to greatest?

<table>
<thead>
<tr>
<th>Name</th>
<th>Distance of State Park (Mi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jamie</td>
<td>$5\frac{1}{2}$</td>
</tr>
<tr>
<td>Scott</td>
<td>3.2</td>
</tr>
<tr>
<td>Mario</td>
<td>$3\frac{1}{10}$</td>
</tr>
<tr>
<td>Deja</td>
<td>2.5</td>
</tr>
<tr>
<td>Michelle</td>
<td>$\frac{7}{4}$</td>
</tr>
</tbody>
</table>
## Chapter Project Rubric

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Student successfully completed the chapter project. Student demonstrated appropriate use of chapter information in completing the chapter project.</td>
</tr>
<tr>
<td>2</td>
<td>Student completed the chapter project with partial success. Student partially demonstrated appropriate use of chapter information in completing the chapter project.</td>
</tr>
<tr>
<td>1</td>
<td>Student did not complete the chapter project or completed it with little success. Student demonstrated very little appropriate use of chapter information in completing the chapter project.</td>
</tr>
<tr>
<td>0</td>
<td>Student did not complete the chapter project. Student demonstrated inappropriate use of chapter information in completing the chapter project.</td>
</tr>
</tbody>
</table>
Decimals
Four-Door Foldables

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Student properly assembled Foldables graphic organizer according to instructions. Student recorded information related to the chapter in the manner directed by the Foldables graphic organizer. Student used the Foldables graphic organizer as a study guide and organizational tool.</td>
</tr>
<tr>
<td>2</td>
<td>Student exhibited partial understanding of proper Foldables graphic organizer assembly. Student recorded most but not all information related to the chapter in the manner directed by the Foldables graphic organizer. Student demonstrated partial use of the Foldables graphic organizer as a study guide and organizational tool.</td>
</tr>
<tr>
<td>1</td>
<td>Student showed little understanding of proper Foldables graphic organizer assembly. Student recorded only some information related to the chapter in the manner directed by the Foldables graphic organizer. Student demonstrated little use of the Foldables graphic organizer as a study guide and organizational tool.</td>
</tr>
<tr>
<td>0</td>
<td>Student did not assemble Foldables graphic organizer according to instructions. Student recorded little or no information related to the chapter in the manner directed by the Foldables graphic organizer. Student did not use the Foldables graphic organizer as a study guide and organizational tool.</td>
</tr>
</tbody>
</table>
Chapter Test, Form 1

Read each question carefully. Write your answer on the line provided. Use the model for problems 1 and 2.

1. Which decimal matches the model?
   A. 0.025  
   B. 0.25  
   C. 2.5000  
   D. 25.00  
   1. ____

2. Which fraction matches the model?
   F. \(\frac{1}{4}\)  
   G. \(\frac{1}{2}\)  
   H. \(\frac{3}{4}\)  
   J. \(\frac{4}{5}\)  
   2. ____

Write the fraction or mixed number as a decimal.

3. sixteen and three fifths
   A. 16.2  
   B. 16.35  
   C. 16.4  
   D. 16.6  
   3. ____

4. \(\frac{37}{100}\)
   F. 370  
   G. 3.7  
   H. 0.37  
   J. 0.037  
   4. ____

5. \(22\frac{34}{100}\)
   A. 22.34  
   B. 22.034  
   C. 22.304  
   D. 22.0034  
   5. ____

6. \(\frac{4}{10}\)
   F. 4.0  
   G. 0.4  
   H. 0.04  
   J. 0.004  
   6. ____

7. Write 0.09 as a fraction in simplest form.
   A. \(\frac{9}{1}\)  
   B. \(\frac{9}{10}\)  
   C. \(\frac{9}{100}\)  
   D. \(\frac{9}{1,000}\)  
   7. ____

Compare. Write >, <, or =.

8. 4.3  
   F. >  
   G. <  
   H. =  
   J. not enough information is given  
   8. ____

9. \(4\frac{4}{100}\)  
   A. >  
   B. <  
   C. =  
   D. not enough information is given  
   9. ____
10. 1.11  □  1.18
   F. >                                  G. <
   H. =                                  J. not enough information is given
10. ____

11. 61\frac{3}{10}  □  61.25
   A. >                                  B. <
   C. =                                  D. not enough information is given
11. ____

Order from greatest to least.

12. 0.83, 0.8, 0.08
   F. 0.83, 0.8, 0.08                       H. 0.08, 0.83
   G. 0.8, 0.83, 0.08                       J. 0.08, 0.83, 0.8
12. ____

13. 2\frac{7}{100}, 2\frac{4}{10}, 2.3
   A. 2\frac{7}{100}, 2\frac{4}{10}, 2.3       C. 2\frac{7}{100}, 2.3, 2\frac{4}{10}
   B. 2\frac{4}{10}, 2.3, 2\frac{7}{100}      D. 2\frac{4}{10}, 2\frac{7}{100}, 2.3
13. ____

Write the letter that represents each mixed number or decimal.

14. 8\frac{3}{100}
   F. W                   G. X                   H. Y                   J. Z
   14. ____

15. 7.85
   A. W                   B. X                   C. Y                   D. Z
   15. ____

Solve.

16. The distance from Anthony’s house to school is 4.2 km. The
distance from his house to the movies is 4.7 km. The distance
from his house to the gym is also 4.7 km. The distance from
his house to the library is 4.4 km. Which building is closest to
Anthony’s house?
   F. school              G. movies              H. gym                  J. library
   16. ____
Chapter Test, Form 2A

Read each question carefully. Write your answer on the line provided. Use the model for problems 1 and 2.

1. Which decimal matches the model?
   A. 1.13  
   B. 1.013  
   C. 1.0013  
   D. 13.1

2. Which fraction or mixed number matches the model?
   F. $1 \frac{3}{10}$  
   G. $\frac{13}{100}$  
   H. $1 \frac{13}{100}$  
   J. $1 \frac{13}{1,000}$

Write the fraction or mixed number as a decimal.

3. fourteen and one fourth
   A. 14.1  
   B. 14.25  
   C. 14.35  
   D. 14.4

4. $9 \frac{12}{100}$
   F. 91.2  
   G. 9.12  
   H. 9.012  
   J. 9.0012

5. $\frac{27}{100}$
   A. 27.00  
   B. 0.027  
   C. 0.27  
   D. 2.7

6. $\frac{8}{10}$
   F. 8.0  
   G. 0.8  
   H. 0.08  
   J. 0.008

7. Write 0.03 as a fraction in simplest form.
   A. $\frac{3}{1}$  
   B. $\frac{3}{10}$  
   C. $\frac{3}{100}$  
   D. $\frac{3}{1,000}$

Compare. Write $>$, $<$, or $=$.

8. 2.33  
   F. $>$
   G. $<$
   H. $=$
   J. not enough information is given

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Chapter 14
Chapter Test, Form 2A  (continued)

9. $22\frac{8}{10}$  ○  22.85
   A. >  
   B. <  
   C. =  
   D. not enough information is given  9. ___

10. 7.8  ○  7.80
    F. >  
    G. <  
    H. =  
    J. not enough information is given  10. ___

11. $6\frac{7}{100}$  ○  6.7
    A. >  
    B. <  
    C. =  
    D. not enough information is given  11. ___

Order from greatest to least.

12. 0.05, 0.5, 0.53
    F. 0.5, 0.53, 0.05  
    G. 0.53, 0.05, 0.5  
    H. 0.53, 0.5, 0.05  
    J. 0.05, 0.53, 0.5  12. ___

13. $4\frac{9}{100}$, $4\frac{4}{10}$, 4.3
    A. $4\frac{9}{100}$, $4\frac{4}{10}$, 4.3  
    B. $4\frac{4}{10}$, $4\frac{9}{100}$, 4.3  
    C. $4\frac{9}{100}$, 4.3, $4\frac{4}{10}$  
    D. $4\frac{4}{10}$, 4.3, $4\frac{9}{100}$  13. ___

Write the letter that represents each mixed number or decimal.

Write the letter that represents each mixed number or decimal.

14. $4\frac{3}{10}$
   F. M  
   G. N  
   H. P  
   J. Q  14. ___

15. 3.67
   A. M  
   B. N  
   C. P  
   D. Q  15. ___

Solve.

16. In the 100-meter race, Ellie had a time of 11.8 seconds. Bobby’s time was 12.2 seconds, Ramon’s was 11.4 seconds, and Leah’s time was 14.3 seconds. Who won the race?
   F. Ellie  
   G. Bobby  
   H. Ramon  
   J. Leah  16. ___
Read each question carefully. Write your answer on the line provided. Use the model for problems 1 and 2.

1. Which fraction or mixed number matches the model?
   A. \( \frac{13}{100} \)  
   B. \( 1\frac{13}{100} \)  
   C. \( 1\frac{13}{1,000} \)  
   1. _____

2. Which decimal matches the model?
   F. 1.13  
   G. 1.013  
   H. 1.0013  
   2. _____

Write as a decimal.

3. \( \frac{27}{100} \)
   A. 27.00  
   B. 0.027  
   C. 0.27  
   3. _____

4. \( \frac{8}{10} \)
   F. 8.0  
   G. 0.8  
   H. 0.08  
   4. _____

5. fourteen and one fourth
   A. 14.1  
   B. 14.25  
   C. 14.4  
   5. _____

6. \( 9\frac{12}{100} \)
   F. 9.0012  
   G. 9.012  
   H. 9.12  
   6. _____

7. Write 0.03 as a fraction.
   A. \( \frac{3}{1,000} \)  
   B. \( \frac{3}{100} \)  
   C. \( \frac{3}{10} \)  
   7. _____

Compare. Write >, <, or =.

8. 7.8 \( \bigcirc \) 7.80
   F. >  
   G. <  
   H. =  
   8. _____
Chapter Test, Form 2B  (continued)

9. \[22\frac{8}{10}\]  22.85
   A. >   C. =
   B. <   D. not enough information is given

10. \[6\frac{7}{100}\]  6.7
   F. >   G. <   H. =

11. 2.33  2.24
   A. >   B. <   C. =

Order from greatest to least.

12. \[4\frac{9}{100}, 4\frac{4}{10} \], 4.3
   F. \[4\frac{9}{100}, 4\frac{4}{10} \], 4.3  G. \[4\frac{4}{10}, 4.3, 4\frac{9}{100}\]  H. \[4\frac{9}{100}, 4.3, 4\frac{4}{10}\]

13. 0.05, 0.5, 0.53
   A. 0.5, 0.53, 0.05
   B. 0.53, 0.05, 0.5
   C. 0.53, 0.5, 0.05

Match each number to the correct letter on the number line.

14. 3.67
   F. \(M\)  G. \(N\)  H. \(P\)

15. \[4\frac{3}{10}\]
   A. \(N\)  B. \(P\)  C. \(Q\)

Solve.

16. Look at the table. Who was the fastest runner?

<table>
<thead>
<tr>
<th>Runner</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ellie</td>
<td>11.8 seconds</td>
</tr>
<tr>
<td>Bobby</td>
<td>12.2 seconds</td>
</tr>
<tr>
<td>Ramon</td>
<td>11.4 seconds</td>
</tr>
</tbody>
</table>

F. Ellie
G. Bobby
H. Ramon

16. ____
Chapter Test, Form 2C

Read each question carefully. Write your answer on the line provided. Use the model for problems 1 and 2.

1. Write a decimal to tell how much is shaded.

2. Write a fraction or mixed number to tell how much is shaded.

3. Write 0.03 as a fraction in simplest form.

Write each fraction or mixed number as a decimal.

4. $\frac{9}{10} \frac{12}{100}$

5. $\frac{27}{100}$

6. fourteen and one fourth

7. $\frac{8}{10}$

Compare. Write $>$, $<$, or $=$.

8. $22 \frac{8}{10} \bigcirc 22.85$

9. $2.33 \bigcirc 2.24$

10. $6 \frac{7}{100} \bigcirc 6.7$

11. $7.8 \bigcirc 7.80$

Order from greatest to least.

12. 0.05, 0.5, 0.53

13. $6.71, \frac{6}{4}, 6.8, \frac{69}{100}$

14. $4\frac{9}{100}, 4\frac{4}{10}, 4.3$
Chapter Test, Form 2C (continued)

Write the letter that represents each mixed number or decimal.

\[ M \quad N \quad P \quad Q \]

\[ 3.5 \quad \quad \quad \quad \quad \quad 4.5 \]

15. \( 4 \frac{3}{10} \)
16. \( 3.67 \)

Solve.

17. Write a decimal that is greater than \( 5 \frac{1}{4} \)
18. Ellen polled 100 students about their favorite sport. Basketball was chosen by 34 of them. Express this as a decimal.
19. In the 100-meter race, Ellie had a time of 11.8 seconds. Bobby’s time was 12.2 seconds, Ramon’s was 11.4 seconds, and Leah’s time was 14.3 seconds. Who won the race?
20. Terry eats \( \frac{2}{5} \) of a pizza. Express this as a decimal.
Read each question carefully. Write your answer on the line provided. Use the model for problems 1 and 2.

1. Write a fraction or mixed number to tell how much is shaded.
2. Write a decimal to tell how much is shaded.
3. Write 0.03 as a fraction in simplest form.

Write as a decimal.

4. \( \frac{27}{100} \)
5. \( \frac{9\frac{12}{100}} { } \)
6. \( \frac{8}{10} \)
7. fourteen and one fourth

Compare. Write \( >, <, \) or \( = \).

8. \( 7.8 \) \( \bigcirc \) \( 7.80 \)
9. \( \frac{6\frac{7}{100}} { } \) \( \bigcirc \) \( 6.7 \)
10. \( 22\frac{8}{10} \) \( \bigcirc \) \( 22.85 \)
11. \( 2.33 \) \( \bigcirc \) \( 2.24 \)

Order from greatest to least.

12. \( \frac{4\frac{9}{100}} { }, \frac{4\frac{4}{10}} { }, 4.3 \)
13. \( 0.05, 0.5, 0.53 \)
14. \( 6.71, \frac{6}{4}, 6.8, \frac{69}{100} \)
Match each number to the correct letter on the number line.

15. 3.67
16. \(\frac{43}{10}\)

Solve.
17. Terry eats \(\frac{2}{5}\) of a pizza. Express this as a decimal.
18. Write a decimal that is more than \(5\frac{1}{4}\).
19. Look at the table. Who was the fastest runner?

<table>
<thead>
<tr>
<th>Runner</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ellie</td>
<td>11.8 seconds</td>
</tr>
<tr>
<td>Bobby</td>
<td>12.2 seconds</td>
</tr>
<tr>
<td>Ramon</td>
<td>11.4 seconds</td>
</tr>
</tbody>
</table>

20. Ellen asked 100 students what sport they like best. 34 said basketball. Write this as a decimal.
Read each question carefully. Write your answer on the line provided. Use the model for problems 1 and 2.

1. Write a decimal to show how much is shaded.

2. Write a fraction or mixed number to show how much is shaded.

3. Express 0.02 as a fraction in simplest form.

Express each fraction or mixed number as a decimal.

4. \( \frac{4}{5} \)

5. \( \frac{8}{25} \)

6. forty and one hundredth

7. \( 17 \frac{88}{100} \)

Compare. Use >, <, or =.

8. 25 \( \frac{60}{100} \) 25.06

9. 2.37 2.38

10. 34 \( \frac{47}{100} \) 34.07

11. 2.9 2.90

Order from greatest to least.

12. 0.06, 0.6, 0.65, 0.56
13. 4.08, $4\frac{3}{5}$, 4.85, $4\frac{75}{100}$  

14. $3\frac{96}{100}$, $3\frac{7}{10}$, 3.09, 3.77  

Write the letter that represents each mixed number or decimal.

13. ______  
14. ______  

15. $8\frac{17}{20}$  

16. 9.06  

Solve.

17. Write a fraction and a decimal that are both greater than 0.34.  

18. For a health survey, Marta polled 100 students about their favorite form of exercise. Twenty-eight students responded with basketball. Write a decimal to represent the number of students who did not say basketball.  

19. Lacy rides a bus 7.8 kilometers to school. George rides 7.83 kilometers, Kelly rides 7.03 kilometers, and Larry rides 7.08 kilometers. Who must travel the longest distance to school?  

20. Rena and Beth share a pie. Rena eats $\frac{14}{50}$ and Beth eats $\frac{35}{100}$ of the pie. Write a decimal to represent the amount of pie that was not eaten.
Chapter Extended-Response Test

Demonstrate your knowledge by giving a clear, concise solution to each problem. Be sure to include all relevant drawings and justify your answers. You may show your solution in more than one way or investigate beyond the requirements of the problem. If necessary, record your answer on another piece of paper.

1. a. What are decimals? Answer in your own words.
   b. Give an example of a fraction of 10 and write it as a decimal and in words.
   c. Give an example of a fraction of 100 and write it as a decimal and in words.
   d. Give an example of a mixed number and write it as a decimal and in words.

2. Look at the chart of the heights of seedlings planted by four students.

<table>
<thead>
<tr>
<th>Student</th>
<th>Plant Height (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy</td>
<td>1.5</td>
</tr>
<tr>
<td>Keisha</td>
<td>1 78/100</td>
</tr>
<tr>
<td>George</td>
<td>1.55</td>
</tr>
<tr>
<td>Michael</td>
<td>1 22/100</td>
</tr>
</tbody>
</table>

   a. Whose plant is taller, Amy’s or George’s? Explain your steps.
   b. Write the heights of Keisha’s and Michael’s plants as decimals. Compare them using < or >. Explain your steps.
   c. List the students and their plant heights in order from least to greatest. Explain your steps.

   a. Who scored better, Noni or Ned? Explain your steps.
   b. Another student named Nelly only got one-fourth of the answers correct on the math test. If the math test has 100 questions, write her score as a fraction in simplest form and as a decimal. Explain your steps.
Use this recording sheet with pages 588–589 of the Student Edition.
Read each question. Then fill in the correct answer.

1. A B C D

2. F G H J

3. A B C D

4. F G H J

5. A B C D

6. F G H J

7. A B C D

8. F G H J

9. A B C D

10. F G H J
Test Example

On the number line below, what number does point S represent?

\[1 \quad 2 \quad 3 \quad 4 \quad 4.5 \quad 5\]

A. 4.0  B. 4.4  C. 3.8  D. 4.3

Read the Question.

You need to find the number that point S represents.

Solve the Question.

The number line is divided into tenths.
It begins with 1 and ends at 5.
4.5 is marked.
Count to find point S.
4.1, 4.2, 4.3, 4.4
So, point S represents 4.4.
The answer is B.

Read each question carefully. Write your answer on the line provided.

1. On the number line below, what number does point W represent?

\[5.00 \quad 5.10 \quad 5.20 \quad 5.30 \quad 5.40 \quad 5.50\]

A. 4.50  B. 5.24  C. 5.25  D. 5.99  1. _____

2. Which decimal means the same as \(\frac{1}{2}\)?

F. 0.50  G. 0.75  H. 0.25  J. 0.10  2. _____

3. Which of the following has the greatest value?

A. 3.10  B. 0.45  C. 1.25  D. 3.12  3. _____
4. Which decimal does the model show?

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

F. 0.50  G. 0.80  H. 0.90  J. 0.35  4. ___

5. Which fraction is equivalent to $\frac{6}{24}$?

A. $\frac{1}{3}$  B. $\frac{1}{4}$  C. $\frac{1}{6}$  D. $\frac{4}{7}$  5. ___

6. The function in the table is $y = 2x - 6$.

<table>
<thead>
<tr>
<th>$x$</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>$y$</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

What is the missing value in the function table?

F. 8  G. 20  H. 14  J. 16  6. ___

7. What is the value of the expression below?

$(24 \div 4) + (9 \times 3)$

A. 76  B. 33  C. 54  D. 26  7. ___

8. Jeremy cuts the grass for 4 of his neighbors every 2 weeks. He charges $20 per lawn. How much does he earn in 2 weeks?

F. $100  G. $40  H. $15  J. $80  8. ___
9. The table shows the number of miles each student lives from school.

<table>
<thead>
<tr>
<th>Student</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miguel</td>
<td>1.45</td>
</tr>
<tr>
<td>Celine</td>
<td>2.3</td>
</tr>
<tr>
<td>Rafael</td>
<td>0.45</td>
</tr>
<tr>
<td>Mirna</td>
<td>1.32</td>
</tr>
</tbody>
</table>

Which list shows the decimals ordered from greatest to least?

F. 1.45, 2.3, 0.45, 1.32
G. 0.45, 1.32, 1.45, 2.3
H. 1.32, 2.3, 1.45, 0.45
J. 2.3, 1.45, 1.32, 0.45

10. Which decimal means the same as $\frac{12}{4}$?

11. Which decimal means the same as $\frac{6}{10}$?

12. Which decimal means the same as $\frac{20}{100}$?

13. Which fraction means the same as 0.78?

14. What fraction is equivalent to $\frac{2}{12}$?

15. What is the value of the expression below?

$\left(50 \div 10\right) - \left(1 + 1\right)$

16. What is the value of the expression below?

$\left(81 \div 9\right) + \left(5 + 9\right)$

17. Gabby baby-sits a neighborhood child 5 hours a week. She gets paid $6 per hour. How much does she earn each week?
## Anticipation Guide
### Number, Operations, and Algebraic Thinking

#### Before you begin Chapter 14
- Read each statement.
- Decide whether you agree (A) or disagree (D) with the statement.
- Write A or D in the first column OR if you are not sure whether you agree or disagree, write NS (not sure).

#### STEP 1

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>decimal</td>
<td>A number with one or more digits to the right of the decimal point.</td>
<td>0.25</td>
</tr>
<tr>
<td>decimal point</td>
<td>A period separating the ones and the tenths in a number.</td>
<td>0.8</td>
</tr>
<tr>
<td>tenth</td>
<td>One of ten equal parts or $\frac{1}{10}$.</td>
<td>Two-tenths is $\frac{2}{10}$.</td>
</tr>
<tr>
<td>hundredth</td>
<td>One of a hundred equal parts or $\frac{1}{100}$.</td>
<td>$0.75$ is $\frac{75}{100}$.</td>
</tr>
<tr>
<td>decimal equivalent</td>
<td>The decimal form of a fraction with a denominator that is a factor of 10 or 100.</td>
<td>Some common fractions and their decimal equivalents: $\frac{1}{2} = 0.5$. $\frac{1}{4} = 0.25$. $\frac{2}{5} = 0.4$.</td>
</tr>
</tbody>
</table>

#### STEP 2

After you complete Chapter 14
- Reread each statement and complete the last column by entering an A (agree) or a D (disagree).
- Did any of your opinions about the statements change from the first column?
- For those statements that you mark with a D, use a separate sheet of paper to explain why you disagree. Use examples, if possible.
**Reteach**

**Tenths and Hundredths**

You can use a model and a place-value chart to read and write decimals. A model and a place-value chart can also help you write a fraction for a decimal.

**Using Models**

<table>
<thead>
<tr>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Think: \( \frac{5}{10} = \frac{1}{2} \)

**Using a Place-Value Chart**

<table>
<thead>
<tr>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Think: \( 0.60 = \frac{60}{100} = \frac{6}{10} = \frac{3}{5} \)

**Skills Practice**

**Tenths and Hundredths**

Write a fraction and a decimal for each shaded part. Then write the fraction in simplest form.

1. \( \frac{3}{10}, 0.3, \frac{3}{10} \)

2. \( \frac{8}{10}, 0.8, \frac{4}{5} \)

3. \( \frac{60}{100}, 0.60, \frac{3}{5} \)

4. \( \frac{70}{10}, 0.7, \frac{7}{10} \)

5. \( \frac{30}{10}, 0.3, \frac{3}{10} \)

6. \( \frac{80}{100}, 0.80, \frac{4}{5} \)

7. \( \frac{60}{100}, 0.60, \frac{3}{5} \)

8. \( \frac{70}{100}, 0.70, \frac{7}{10} \)

9. \( \frac{20}{10}, 0.20, \frac{2}{10} \)

10. \( \frac{80}{100}, 0.80, \frac{4}{5} \)

**Write each fraction as a decimal.**

5. \( \frac{2}{10} = 0.2 \)

7. \( \frac{3}{10} = 0.3 \)

9. \( \frac{1}{100} = 0.01 \)

11. \( \frac{2}{100} = 0.02 \)

6. \( \frac{7}{10} = 0.7 \)

8. \( \frac{7}{100} = 0.07 \)

10. \( \frac{1}{10} = 0.1 \)

12. \( \frac{96}{100} = 0.96 \)

13. two tenths \( \frac{2}{10} = 0.2 \)

14. fifteen hundredths \( \frac{15}{100} = 0.15 \)

15. six hundredths \( \frac{6}{100} = 0.06 \)

16. three tenths \( \frac{3}{10} = 0.3 \)

17. twenty-one hundredths \( \frac{21}{100} = 0.21 \)

18. fifty-six hundredths \( \frac{56}{100} = 0.56 \)

19. five tenths \( \frac{5}{10} = 0.5 \)

20. seventeen hundredths \( \frac{17}{100} = 0.17 \)

21. ninety-nine hundredths \( \frac{99}{100} = 0.99 \)

22. two tenths \( \frac{2}{10} = 0.2 \)

23. eight tenths \( \frac{8}{10} = 0.8 \)

24. three hundredths \( \frac{3}{100} = 0.03 \)

**Write as a fraction and as a decimal.**

25. Peter’s house is 0.78 mile from school. Write the number in words.

**seventy-eight hundredths**

26. Lora walks for five tenths of an hour. Write the number as a decimal. \( 0.5 \)
Homework Practice
Tenths and Hundredths

Write a fraction and a decimal for each shaded part.

1. \(\frac{2}{10} = 0.2\)
2. \(\frac{4}{10} = 0.4\)
3. \(\frac{8}{10} = 0.8\)
4. \(\frac{40}{100} = 0.40\)
5. \(\frac{10}{100} = 0.10\)

Write the fraction as a decimal.

6. \(\frac{3}{10} = 0.3\)
7. \(\frac{45}{100} = 0.45\)
8. \(\frac{68}{100} = 0.68\)
9. \(\frac{3}{100} = 0.03\)
10. \(\frac{1}{10} = 0.1\)

Write as a decimal.

11. Marty caught \(\frac{4}{10}\) of an inch of rain in his rain gauge. \(0.4\)
12. \(\frac{48}{100}\) of the students were girls. \(0.48\)
13. thirty-seven hundredths \(0.37\)
14. twenty-five hundredths \(0.25\)
15. seven-tenths \(0.7\)

Problem-Solving Practice
Tenths and Hundredths

Solve.

1. Three-tenths of the students who use the recreation center play in the softball league. What is this fraction as a decimal?
   \(0.3\)

2. About half of the students who play soccer also play basketball. What is this number as a fraction? As a decimal?
   \(\frac{1}{2} = 0.5\)

3. It has been a dry summer in Texas. Last Thursday, nine-hundredths of an inch of rain finally fell in the town of Conway. What is this as a decimal?
   \(0.09\)

4. Tony spent \(\frac{7}{10}\) as much time practicing on his piano as he spent practicing soccer. How much time is that in decimal form?
   \(0.7\)

5. Last winter, it snowed two and a half inches in the town of Pratt. When the snow melted, the weather station recorded the total precipitation as twenty-three hundredths of an inch. How could they have expressed this as a decimal?
   \(0.23\)

6. Liam called 10 parks one Sunday. He discovered that \(\frac{3}{10}\) of them were being used for soccer matches. What would that be as a fraction?
   \(\frac{3}{10}\)

   As a decimal?
   \(0.3\)

   Suppose Liam had called 100 parks. If he discovered \(\frac{3}{10}\) of them were being used for soccer matches, how many parks would that be?
   \(30\) parks
### Enrich
**Decimal Color**

Look at these base ten models. There are 4 large whole squares. Each square is made up of 100 small squares. There are 10 rows of 10 small squares. Color the models to represent these three numbers.

- 0.25 red
- 0.76 yellow
- 1.58 blue

### Reteach
**Relate Mixed Numbers and Decimals**

Decimals Greater Than 1

A mixed number is made up of a whole and a part of a whole. You can use models to help you write mixed numbers as decimals.

- Mixed number: \(1 \frac{7}{10}\)
  - Decimal: 1.7
  - Read: one and seven tenths

- Mixed number: \(2 \frac{36}{100}\)
  - Decimal: 2.36
  - Read: two and thirty-six hundredths

Write a mixed number and decimal for each shaded part.

1. \(1 \frac{3}{10}\) : 1.3
2. \(2 \frac{3}{10}\) : 2.3
3. \(2 \frac{50}{100}\) : 2.50
4. \(1 \frac{75}{100}\) : 1.75

Write each as a decimal.

5. \(1 \frac{9}{10}\) : 1.9
6. \(3 \frac{5}{100}\) : 3.05

Check student's work. Sample answer given.
Skills Practice
Relate Mixed Numbers and Decimals

Write each as a mixed number and decimal.

1. \(1 \frac{3}{10} ; 1.3\)
2. \(2 \frac{35}{100} ; 2.35\)
3. \(1 \frac{74}{100} ; 1.74\)

Write each as decimal.

4. \(7 \frac{3}{10} = 7.3\)
5. \(1 \frac{25}{100} = 1.25\)
6. \(9 \frac{5}{100} = 9.05\)
7. \(8 \frac{12}{100} = 8.12\)
8. \(6 \frac{2}{100} = 6.02\)
9. \(17 \frac{7}{100} = 17.07\)
10. \(8 \frac{5}{100} = 8.05\)
11. \(3 \frac{3}{100} = 3.03\)
12. \(9 \frac{1}{10} = 9.1\)
13. \(2 \frac{9}{10} = 2.9\)
14. \(8 \frac{13}{100} = 8.13\)
15. \(25 \frac{1}{100} = 25.01\)
16. \(18 \frac{98}{100} = 18.98\)
17. \(1 \frac{3}{100} = 1.03\)
18. \(10 \frac{1}{100} = 10.01\)
19. \(11 \frac{3}{100} = 11.03\)
20. \(6 \frac{6}{100} = 6.06\)
21. \(19 \frac{37}{100} = 19.37\)
22. \(23 \frac{8}{10} = 23.8\)
23. \(7 \frac{6}{100} = 7.06\)
24. eight and three tenths \(8.3\)
25. seven and seventy hundredths \(7.70\)

Solve.

26. Out of 100 pairs of shoes in a sporting goods store, 53 pairs are running shoes. What decimal shows the number of pairs of running shoes? \(0.53\)
27. Out of 100 backpacks, 2 are red and the rest are green. What decimal shows the number of red backpacks? \(0.02\)
1. The school bell rings for 7 and \(\frac{21}{100}\) of a second. What is the decimal form for how long the bell rings?
   \[7.21\text{ seconds}\]

2. In a speed-skating race, the winning skater’s time was \(\frac{333}{100}\) seconds faster than the second-place skater. What is the decimal for this fraction?
   \[4.35\text{ seconds}\]

3. Alan used graph paper to show the length of the ring on his cell phone. If each grid is equal to one second, what is the length of the ring? Write the answer as a mixed number in simplest form and as a decimal.
   \[2\frac{3}{4}\text{ seconds}; 2.75\text{ seconds}\]

4. Jana used graph paper to show how many miles it is from her house to school. If each grid is equal to one mile, how far is Jana’s house from school?
   \[4\frac{1}{100}\text{ miles or 4.0 miles}\]

5. Judy and Trish read that the total rainfall in their town was, “two and thirty-four hundredths of an inch.” Judy wrote that fraction as \(\frac{234}{100}\) inches. Trish wrote it as \(2\frac{17}{50}\) inches. Who was right? Explain.
   **Both:** Trish’s answer is the simplest form of the mixed number.

   Using decimal form, how much rainfall did their town receive?
   \[2.34\text{ inches}\]

We use tenths and hundredths to talk about money and distance, and more. Translate the underlined part of each expression into a decimal.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The rope is three-and-a-half meters long.</td>
<td>3.5</td>
</tr>
<tr>
<td>2. Sophia spent five dollars and thirty-seven cents.</td>
<td>$5.37</td>
</tr>
<tr>
<td>3. Jerry ran the mile in four minutes flat.</td>
<td>4.0</td>
</tr>
<tr>
<td>4. The patient’s temperature is ninety-eight point six.</td>
<td>98.6</td>
</tr>
<tr>
<td>5. We used two-and-a-quarter pounds of ground beef.</td>
<td>2.25</td>
</tr>
<tr>
<td>6. The punch recipe calls for one-and-a-fourth liters of club soda.</td>
<td>1.25</td>
</tr>
<tr>
<td>7. Harvey lives ten-and-a-half blocks away.</td>
<td>10.5</td>
</tr>
<tr>
<td>8. Kelly cycled three-quarters of the way across the state.</td>
<td>0.75</td>
</tr>
<tr>
<td>9. The plane flew at a speed of five hundred point six miles per hour.</td>
<td>$500.6</td>
</tr>
<tr>
<td>10. The birthday present costs a hundred dollars and fifty cents.</td>
<td>$100.50</td>
</tr>
</tbody>
</table>
Problem-Solving Strategy: Make a model

Alicia baked 24 muffins for her class bake sale. They sell for $0.50 for 4. How much money will she make for her class?

Step 1 Understand

Be sure you understand the problem.

What do you know?
- Alicia baked 24 muffins.
- Muffins sell for $0.50 for 4.
- You need to find how much her muffins will make for the class.

Step 2 Plan

Make a model by drawing the muffins in groups of 4 with a $0.50 tag on each group.

Step 3 Solve

Carry out your plan.

Add up the $0.50 tags for all 6 groups.
So, 24 muffins will make $3.00 for the class.

Step 4 Check

Is the solution reasonable?
Reread the problem. How can you check your answer?

6 × .50 = $3.00

Solve using the make a model strategy.

1. Isabel makes and sells pairs of earrings. She uses 5 beads for each earring and charges $0.25 per bead. How much will 10 pairs of earrings sell for?

$25

2. There are 2 elephants in a circus act. In their routines, each act uses 2 other animals. How many animals perform altogether?

6 animals

3. Mrs. Lee decides to make apple pies. If there are 5 apples in each pie and she makes 4 pies, how many apples will she use altogether?

20 apples

4. Elizabeth has 12 flowerpots. One half of the flowerpots have roses in them. One third of the flowerpots have sunflowers in them. The rest of the flowerpots have daisies in them. How many flowerpots have sunflowers in them? How many flowerpots have daisies in them?

4 flowerpots with sunflowers;
2 flowerpots with daisies

5. Rachel opened 6 packages of paper for her scrapbook. Each package of paper had 20 sheets of blue paper and half as many sheets of green paper. How many total sheets of paper were there?

20 + 10 = 30 sheets per package;
30 × 6 = 180 sheets of paper

6. Brianna rollerbladed 2 miles. Then she returned home to get her friend. They rollerbladed together for 3 miles. How far did Brianna go altogether?

2 + 2 + 3 = 7 miles

7. In the school play, there are 12 props in the first act. There are 33 different props in the second act and 23 different props in the third act. How many different props are there in all?

68 props
**Skills Practice**

Problem-Solving Strategy: Make a Model

**Solve. Use the make a model strategy.**

1. There are 4 jars of fingerpaint in a box. Each child will get 2 jars to use to paint. If there is a class of 16 children, how many boxes of paint will they need?
   - **8 boxes**

2. Ron walked to the store which was 8 blocks away. Then he walked 6 blocks to the park. He had to stop back at the store because he forgot to get something, and then he went home. How many blocks did he walk?
   - **28 blocks**

3. There were 3 cats at the pet shop. The first cat had 6 kittens. The other two cats each had 8 kittens. What was the total number of cats in the pet shop after the kittens were born?
   - **25 cats**

4. If you have a box of 96 crayons that you want to share with 11 classmates, how many crayons will each classmate receive? Hint: Don’t forget to keep crayons for yourself.
   - **8 crayons**

5. Write a problem that can be solved by making a model. Then, ask a classmate to solve the problem.
   - **Check students’ answers.**

**Homework Practice**

Problem-Solving Strategy: Make a Model

**Solve. Use the make a model strategy.**

1. Manuel makes and sells birdhouses. He uses 7 pieces of wood for each birdhouse and he pays $1.59 for each piece of wood. If he makes a $4.87 profit per birdhouse, how much is he charging for each birdhouse? How much would a larger birdhouse using 12 pieces of wood with the same profit cost?
   - **$16; $23.95**

2. Marsha collects dolls. She has 18 dolls with brown hair, 14 dolls with black hair, and 4 dolls with blonde hair. What fraction of the dolls have black hair?
   - **14/36 or 7/18**

3. You are having a family reunion and 5 dozen people will be attending. If you figure two ears of corn per person, how many ears of corn will you need?
   - **120 ears of corn or 10 dozen**

4. Mark’s older brother does lawn care. He charges $22 to mow a lawn up to 500 square feet. For lawns more than 500 square feet, he charges an additional $5 for each 100 additional square feet. How much will it cost to have Mark’s brother mow a lawn that is 20 feet long and 25 feet wide? What is the cost for a lawn that is 30 feet long and 30 feet wide?
   - **$22; $42**

**Spiral Review**

Write each as a mixed number and decimal. (Lesson 14–2)

5. five and nineteen hundredths
   - **5 19/100; 5.19**

6. two and forty-five hundredths
   - **2 45/100; 2.45**

7. eighty hundredths
   - **80/100; 0.80**
**14-3 Enrich**

**Number Squares**

Use the numbers in the box to complete the magic square below. A square is “magic” if the numbers in every row, every column, and both diagonals add up to the same number. In this case the sum is 7.2.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample answer:

<table>
<thead>
<tr>
<th>2.3</th>
<th>2.8</th>
<th>2.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td>2.0</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**14-4 Reteach**

**Compare and Order Decimals**

You can use models to compare and order decimals. Order the numbers from least to greatest.

Compare the decimals.
Since $2 < 3$, $2.75 < 3.63$ and $3.68$.
Since $\frac{63}{100} < \frac{68}{100}$, $3.63 < 3.68$.
The order from least to greatest is $2.75, 3.63, 3.68$.

Order the decimals.

Think: $2.75 < 3.63 < 3.68$.
The order from least to greatest is $2.75, 3.63, 3.68$.

Compare. Write $>$, $<$, or $=$.

1. $0.75 \underline{> } 0.7$
2. $0.66 \underline{< } 0.77$
3. $0.06 \underline{< } 0.60$
4. $0.29 \underline{< } 0.25$
5. $0.24 \underline{< } 0.33$
6. $0.03 \underline{< } 0.30$

Order from least to greatest.

7. $0.66, 0.07, 0.75$
8. $0.06, 0.77, 0.60$
9. $0.29, 0.25, 0.24$
10. $0.03, 0.30, 0.33$
Name ___________________________ Date __________________

14–4 Skills Practice

Compare and Order Decimals

4NS1.2, 4NS1.9

Compare. Write >, <, or =.

1. 0.2 _____ 0.02
2. 0.7 _____ 0.70
3. 1.78 _____ 1.87
4. 12.16 _____ 12.16
5. 0.10 _____ 0.16
6. 5.11 _____ 5.10
7. 11.99 _____ 12.1
8. 11.1 _____ 10.1
9. 9.06 _____ 9.16
10. 6.5 _____ 5.9
11. 2.1 _____ 0.2
12. 10.3 _____ 10.30
13. 16.75 _____ 16.57
14. 14.44 _____ 14.54
15. 18.01 _____ 18.11
16. 9.1 _____ 9.09
17. 21.12 _____ 22.13
18. 16.06 _____ 16.6

Order from greatest to least.

19. 1.78, 1.08, 1.87
20. 0.88, 0.08, 0.98
21. 1.11, 1.21, 0.22
22. 10.02, 9.9, 10.12

Order from least to greatest.

23. 0.01, 0.1, 1.00
24. 2.22, 2.02, 2.12
25. 6.07, 5.99, 6.17
26. 1.06, 1.16, 0.99

Solve.

27. On Monday Ken ran 100 meters in 11.2 seconds. On Tuesday he ran 100 meters in 10.9 seconds. On which day did Ken run faster?
   **Tuesday**

28. Jadwin Bridge is 1.6 kilometers long. Seely Bridge is 1.06 kilometers long. Which bridge is longer?
   **Jadwin Bridge**
1. Enrique averages 6.8 assists per game. Lorena averages 7.2 assists per game. Gilberto averages 5.9 assists per game. Who averages the most assists?

Lorena

2. Many kids grow an average of 1.4 inches a year. If you grew 2.8 inches and your friend grew 1.2 inches, who grew more? Who was closer to the average amount? How much more did you grow than the average amount?

you; your friend; 1.4 inches more

3. If California received 2.1 inches of rain in January, 2.4 inches of rain in February, and 1.8 inches of rain in March, how much total rain did they receive? List the months in order of the most to least rain.

6.3 inches; Feb; Jan; Mar

4. Martina plays tennis for 3.5 hours a day. Jenna plays tennis for 3.75 hours a day, and Marcus plays for 2.8 hours a day. List the number of hours played from greatest to least.

3.75, 3.5, 2.8

5. Olivia scored an average of 15.8 points a game, James scored an average of 17.1 points, and Joaquin scored an average of 18.4 points per game. Who had the best average?

Joaquin

6. Sean played a game of cards in 14.3 minutes. He played a second game in 13.8 minutes. Which game did he play faster?

the second game

7. Lauren, Kim, and Jackie each had different heights in centimeters. Compare their heights and list them from the shortest to tallest.

<table>
<thead>
<tr>
<th>Name</th>
<th>Height (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lauren</td>
<td>167.64</td>
</tr>
<tr>
<td>Kim</td>
<td>152.4</td>
</tr>
<tr>
<td>Jackie</td>
<td>161.54</td>
</tr>
</tbody>
</table>

Kim; Jackie; Lauren

From Acadia National Park (in Maine) to Zion National Park (in Utah) the National Park Service manages 84.6 million acres of national park land.

Circle the letter of the lesser number in each pair. Then use the circled letters to spell the name of a well-known national park.

1. C 4.52 S 4.25
2. E 0.1 A 1.8
3. G 0.75 L 0.68
4. M 3.45 N 2.34
5. O 1.02 H 2.01
6. R 0.44 T 0.40
7. V 0.10 W 0.02
8. Y 0.28 Z 0.3
9. A 0.86 L 0.68
10. O 3.96 R 6.93
11. E 0.23 I 2.23

YELLOW STONE
**Answers (Lesson 14-5)**

**Problem-Solving Investigation: Choose a Strategy**

**Step 1 Understand**

<table>
<thead>
<tr>
<th>Question</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyle bought birthday balloons for his brother. He, his three friends, and his mom and dad each held balloons. How many balloons did they have altogether?</td>
<td>16 rocks, 4 plants, 2 filters</td>
</tr>
</tbody>
</table>

**Step 2 Plan**

1. Draw a picture of the balloons held by each person.
2. Use logical reasoning to add the number of balloons held by each person.

**Step 3 Solve**

1. Kyle bought 1 balloon for his brother.
2. His friends (Steve, Ryan, and Dan) each held 1 balloon.
3. Kyle's mom and dad each held 3 balloons. Kyle and Jin held 6 balloons.

**Step 4 Check**

- Is the solution reasonable?
- Reread the problem. How can you check your answer?

**Problem-Solving Investigation: Choose a Strategy**

1. Jamie has an aquarium with 8 fish. He has half as many plants, twice as many small rocks, and a quarter the amount of filters. How many plants, rocks, and filters does he have?

   - Plants: 4
   - Rocks: 16
   - Filters: 2

2. Each morning, Joanna jogs with her dog. They jog for 2 miles and walk for 1 mile. How many miles do they jog in 1 week? How many miles do they walk in 10 days?

   - Jogging: 7 miles
   - Walking: 24 miles

3. Julio has 4 cats and 2 dogs. How many total legs do his animals have? How many ears altogether?

   - Legs: 24
   - Ears: 12

4. Martina ran the 100 meter dash in 14.8 seconds and her friend Sandra ran it in 14.2 seconds. Who won? How much time did she win by?

   - Sandra won by 0.6 seconds
Skills Practice

Problem-Solving Investigation: Choose a Strategy

Use any strategy shown below to solve.

- Use logical reasoning
- Solve a simpler problem
- Make a model
- Draw a picture
- Look for a pattern

1. Carlos had a 55 gallon aquarium with 18 fish. He had half as many plants, twice as many small rocks, and one-sixth the amount of filters. How many plants, rocks, and filters did he have?
   - 9 plants; 36 rocks; 3 filters

2. Each morning, Mario walks with his dog. They walk for 3 miles. How many miles do they walk in 1 week? How many miles do they walk in 10 days?
   - 21 miles; 30 miles

3. Joanna has 10 kinds of nail polish. If she uses 2 kinds in a week, how many weeks will it take to use all of them?
   - 5 weeks

4. A building is 45 stories high. Every fifth story is residential and the rest of the building is offices. Laura lives on the third story that is residential. What number will she press on the elevator to go to her home if the ground level is floor 1? __________
   - 15

5. You saved your money from gifts and allowance and you were able to buy a scooter for $99.39 and pair of shoes for $24.25. If you still have $16.98 left, how much money did you start out with?
   - $140.62

6. Ron’s mother bought a dozen flowers for $19.99. Alfred’s mother bought 2 dozen of the same flowers for $38.98. Whose mother got the better deal? __________
   - Alfred’s mother

7. What numbers come next in this pattern? What is the rule? 4, 2, 8, 6, 12, 10, ___, ___, ___, 16, 14, 20; the pattern is ___, ___, +6
   - 12, 9; the pattern is +2, +4, -3

Homework Practice

Problem-Solving Investigation: Choose a Strategy

Solve using any strategy shown below.

- Use logical reasoning
- Solve a simpler problem
- Make a model
- Draw a picture
- Look for a pattern

1. Video Rentals

   - What are the total video sales for August, September, and October?
   - 500 videos

2. Each morning, Mario walks with his dog. They walk for 1.5 miles. How many miles do they walk in 1 week? How many miles do they walk in 2 weeks?
   - 10.5 miles; 21 miles

3. What number comes next in this pattern? What is the rule? 0, 2, 6, 3, 5, 9, 6, 8, ___, ___, ___, 12, 9; the pattern is ___, ___, +2, +4, -3

Spiral Review

Compare. Write >, <, or =. (Lesson 14-4)

4. 0.5 __ 0.50
5. 2.98 __ 2.89
6. 0.04 __ 0.4

Order from least to greatest.

7. 10.06, 10.16, 10.56, 11.06
   - 10.06; 10.16; 10.56; 11.06

8. 5.45, 5.25, 5.05
   - 5.05; 5.25; 5.45
Grade 4

**14–5**

**Enrich**

Two Heads

There are 3 quarters, 4 dimes, 5 nickels and 6 pennies in the pile of coins. There's an old saying that two heads are better than one for solving problems. Work on this with a partner.

1. You and your partner each choose 1 coin. Add their value. Use a decimal to write the sum as a dollar value.
   **For example, if both choose a quarter, the sum would be $0.50**

2. You and your partner each choose 2 coins. Add their value. Use a decimal to write the sum as a dollar value.
   **For example, if two dimes and two pennies are chosen, the sum would be $0.22**

3. You and your partner each choose 3 coins. Add their value. Use a decimal to write the sum as a dollar value.
   **For example, 3 dimes, two nickels and a penny would be $0.41**

4. You and your partner each choose 4 coins. Add their value. Use a decimal to write the sum as a dollar value.
   **For example 2 quarters, 2 dimes, 2 nickels and 2 pennies $0.82**

5. How much money is in the pile of coins?
   **$1.46**

---

**14–6**

**Reteach**

**Fraction and Decimal Equivalents**

Marsha runs in track and her workout includes a 3.5 mile run and a 0.5 mile warm down. What is the fraction equivalent for Marsha’s workout?

**Step 1 Understand**

Be sure you understand the problem.

What do you know?
- Marsha runs 3.5 miles for her workout.
- Her warm down is 0.5 miles.
- You need to find her workout in a fraction equivalent

**Step 2 Plan**

Make a plan

To find the fraction equivalent to a decimal you can use a number line or model to show the equivalents.

Write the fraction with a 10 or 100 denominator.

**Step 3 Solve**

Carry out your plan.

Change the decimals 3.5 and 0.5 to fractions.

\[
\frac{3.5}{1} = \frac{35}{10} \quad \text{or} \quad \frac{3.5}{1} = \frac{35}{10} \quad \text{and} \quad \frac{0.5}{1} = \frac{5}{10} \quad \text{or} \quad \frac{0.5}{1} = \frac{5}{10} \quad \text{or} \quad \frac{1}{2}
\]

\[
\frac{3}{2} + \frac{1}{2} = 4
\]

**Step 4 Check**

Is the solution reasonable?

Reread the problem and check your answer.

Write a fraction and decimal to describe the shaded part of each model.

1. **\[
\frac{5}{10}
\]**
2. **\[
\frac{3}{6}
\]**
14–6 Skills Practice
Fraction and Decimal Equivalents

Write a fraction and decimal to describe the shaded part of each model.

1. \[ \frac{1}{4} \] \hspace{1cm} 0.25

3. \[ \frac{4}{5} \] \hspace{1cm} 0.8

5. \[ \frac{2}{5} \] \hspace{1cm} 0.4

2. \[ \frac{1}{4} \] \hspace{1cm} 0.25

4. \[ \frac{1}{2} \] \hspace{1cm} 0.5

Write each fraction as a decimal.

6. \[ \frac{36}{100} \] \hspace{1cm} 0.36

7. \[ \frac{3}{4} \] \hspace{1cm} 0.75

8. \[ \frac{96}{100} \] \hspace{1cm} 0.96

9. \[ \frac{18}{20} \] \hspace{1cm} 0.90

10. \[ \frac{1}{10} \] \hspace{1cm} 0.1

11. Lauren collects frog figures. She has 4 orange frogs and 21 green ones. Write the proportion of the orange frogs out of the total frogs and the green frogs out of the total frogs as a fraction and a decimal.
   orange: \[ \frac{4}{25} \] \hspace{1cm} 0.16
   green: \[ \frac{21}{25} \] \hspace{1cm} 0.84

14–6 Homework Practice
Fraction and Decimal Equivalents

Write a fraction and decimal to describe the shaded part of each model.

1. \[ \frac{1}{5} \] \hspace{1cm} 0.2

3. \[ \frac{1}{10} \] \hspace{1cm} 0.1

2. \[ \frac{6}{10} \] \hspace{1cm} 0.6

4. \[ \frac{9}{100} \] \hspace{1cm} 0.09

Write each fraction as a decimal.

5. \[ \frac{77}{100} \] \hspace{1cm} 0.77

6. \[ \frac{5}{8} \] \hspace{1cm} 0.625

7. \[ \frac{12}{100} \] \hspace{1cm} 0.12

8. \[ \frac{5}{25} \] \hspace{1cm} 0.2

9. \[ \frac{1}{4} \] \hspace{1cm} 0.25

Spiral Review

Use any strategy shown below to solve. (Lesson 14-5)

- Look for a pattern
- Draw a picture
- Solve a simpler problem
- Make a model
- Use logical reasoning

10. Nadia’s mom gave her $5 for lunch. Her two younger sisters each received $4 for lunch. Nadia’s mom had $19 left over. How much money did she start with? $32

11. What is the rule for the pattern shown? What number comes next?
   12, 16, 15, 19, \textbf{add 4 then subtract 1}; 18
Problem-Solving Practice
Fraction and Decimal Equivalents

1. Katarina made biscuits. She needed to use \(2\frac{1}{4}\) cups of flour for 12 biscuits. If she made 24 biscuits, how much flour did she use written as a decimal?

4.5 cups

2. Louis made a snack with bananas and crackers for his 2 friends and himself. He used 2 bananas and 9 crackers. How much banana did each person get if it was divided evenly? Write your answer as a fraction.

\(\frac{2}{3}\) banana

3. If California received an average of 14.1 inches of rain in 2006, Arizona received an average of 10.8 inches of rain, and Nevada received an average of 9.9 inches of rain, which was the state that received the most rain? Write the amount as a mixed number.

California; 14 \(\frac{1}{10}\)

4. Thomas collects trains. He has 7 blue trains and \(\frac{23}{30}\) are other colors. How many trains does Thomas have altogether?

30 trains

5. Miriam has 100 buttons in her sewing basket. 28 of them are red, 52 of them are white, 10 are blue, and 10 are black. Write a fraction and a decimal to show how many red and white buttons she has.

\(\frac{80}{100}; 0.80\)

6. There are 52 cards in a deck. \(\frac{1}{4}\) of them are hearts, \(\frac{1}{4}\) are spades, \(\frac{1}{4}\) are diamonds, and \(\frac{1}{4}\) are clubs. Write a fraction and decimal to show all the cards that are hearts and diamonds.

\(\frac{2}{4}; 0.5\)

Enrich
Tricky Triangle

The base of this triangle is a number line. Fill up the triangle by writing a decimal (D), fraction (F), or a mixed number (M) to identify each location on the number line.

1. (D) 2. (F) 3. (M) 4. (M) 5. (D) 6. (D) 7. (M)

0.5  \(\frac{3}{4}\)  \(1\frac{1}{3}\)  \(1\frac{1}{2}\)  1.9  2.25  \(2\frac{4}{5}\)
Decimals, Fractions, and Mixed Numbers

To compare fractions and decimals, you can write the fractions as decimals and then compare.

You can use a number line to compare fractions and decimals.

Place a point on the line where each decimal or fraction belongs. Now you can see whether a decimal or fraction is equal to, greater than, or less than another number.

You can also use a place-value chart to compare numbers: \( \frac{4}{1} \), \( \frac{4}{2} \), \( \frac{4}{3} \), \( \frac{4}{4} \).

First, convert fractions to decimals. Example: \( \frac{4}{1} = 4.25 \)

Line up the decimals points.

Compare the tenths and hundredths place of each number.

<table>
<thead>
<tr>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

From least to greatest: \( \frac{4}{5}, \frac{4}{4}, \frac{4}{3}, \frac{4}{2} \).

Compare. Write \( > \), \( < \), \( = \).

1. \( 2.5 \quad \bigl< \quad 2.3 \)  
2. \( 7\frac{3}{8} \quad \bigl> \quad 7.7 \)  
3. \( 9.03 \quad \bigl< \quad 9.3 \)  
4. \( 6\frac{1}{10} \quad \bigl> \quad 6.1 \)  
5. \( \frac{5}{4} \quad \bigl< \quad 1\frac{1}{4} \)  
6. \( 13.2 \quad \bigl< \quad 13\frac{5}{8} \)

Order from greatest to least.

7. \( \frac{3}{4}, \frac{1}{2}, \frac{1}{4}, 0.3, 0.5 \)  
8. \( \frac{5}{3}, 5.3, 6.0, 5\frac{2}{3}, 6.0, 5\frac{2}{3}, 5\frac{2}{5}, 5.3 \)  
9. \( 10,10\frac{10}{100}, 10.15, 10\frac{4}{100}, 10.6, 10.15, 10\frac{10}{100}, 10.5, 10.15, 10\frac{5}{100}, 10.0 \)  
10. \( \frac{1}{8} \quad \bigl> \quad \frac{1}{8} \)  
11. \( 1 \quad \bigl< \quad \frac{8}{8} \)  
12. \( 2 \quad \bigl< \quad \frac{17}{8} \)

Solve.

13. Ben measures \( \frac{1}{4} \) cups of water. What is this as a mixed number? \( 2\frac{1}{2} \) cups

14. Claudia ran 4.3 miles on Monday. On Tuesday she ran \( 4\frac{1}{2} \) miles. On which day did Claudia run a longer distance? Explain.

\[ \text{Tuesday: } 4\frac{1}{2} > 4\frac{1}{3} \]

15. Jared drank \( \frac{2}{4} \) cups of juice. Aida drank \( \frac{4}{5} \) cups. Who drank more juice? Explain.

\[ \text{Jared: } \frac{3}{4} (1\frac{3}{4}) > \frac{9}{6} (1\frac{1}{6}) \]

16. Mary worked \( 8\frac{1}{2} \) hours on Monday and \( 8\frac{3}{5} \) hours on Tuesday. On which day did she work longer? Explain.

\[ \text{Tuesday: } 8\frac{3}{5} > 8\frac{1}{2} \]
**Homework Practice**

### Decimals, Fractions, and Mixed Numbers

**Compare. Write >, <, or =.**

1. \(3.05 \quad \underline{<} \quad 3\frac{11}{100}\)
2. \(\frac{5}{10} \quad \underline{>} \quad 0.49\)
3. \(0.04 \quad \underline{<} \quad \frac{3}{10}\)
4. \(1.35 \quad \underline{<} \quad 1\frac{3}{10}\)
5. \(\frac{60}{100} \quad \underline{=} \quad 0.60\)

**Order from greatest to least.**

7. \(8.45, 8\frac{6}{10}, 8.81, 8\frac{18}{100}\)
8. \(0.27, \frac{4}{5}, 0.52, \frac{3}{4}\)
9. \(3.2, 2\frac{1}{2}, 3.19, 2\frac{24}{50}\)

**Spiral Review**

Write a fraction or mixed number and decimal to describe the shaded part of each model. (Lesson 14-6)

10. \(\frac{60}{100} \quad 0.60\)
11. \(\frac{77}{100} \quad 0.77\)
12. \(\frac{275}{100} \quad 2.75\)
13. \(\frac{29}{100} \quad 0.29\)

### Problem-Solving Practice

**Decimals, Fractions, and Mixed Numbers**

**Solve.**

1. Ana has a crayon that is 2.8 inches long. Monica has a crayon that is 2\(\frac{3}{4}\) inches long. Who has the longer crayon?
   **Ana**

2. Tori needs 1\(\frac{1}{2}\) cups of flour to bake bread. Lance needs 1.45 cups of flour. Who needs more flour?
   **Tori**

3. Ramon surveyed 100 students and found \(\frac{49}{100}\) of those surveyed like soccer best, \(\frac{3}{20}\) of those surveyed like volleyball best, and 0.36 like basketball best. Order the sports from least liked to most liked.
   Volleyball \(\left(\frac{3}{20}\right)\), basketball (0.36), soccer \(\left(\frac{49}{100}\right)\)

4. The hardware company has 100 tools. Of the tools 3\(\frac{3}{10}\) are hammers, 0.4 are saws, \(\frac{3}{5}\) are screwdrivers, and the rest are wrenches. Order the numbers from greatest to least.
   \(0.4, \frac{3}{10}, \frac{1}{5}, \frac{1}{10}, 0.1\)

5. Sandy uses 2\(\frac{1}{3}\) blocks of wax to make candles. Martha uses 2.3 blocks of wax to make candles. Who uses more wax?
   **Martha**
Many consider Muhammad Ali the greatest heavyweight boxer of all time. He first came to prominence at the 1960 Summer Olympics when he won a gold medal in boxing.

Muhammad Ali often talked about his boxing style. Discover one of his most famous quotes by renaming the decimals as fractions in simplest form. Then use the code key to find the letter that matches each fraction. Write the letter on the line above the decimal.

"FlOAt LiKE A"

<table>
<thead>
<tr>
<th>0.125</th>
<th>0.55</th>
<th>0.75</th>
<th>0.08</th>
<th>0.55</th>
<th>0.38</th>
<th>0.15</th>
<th>0.625</th>
<th>0.08</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.875</td>
<td>0.16</td>
<td>0.5</td>
<td>0.625</td>
<td>0.58</td>
<td>0.125</td>
<td>0.55</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>0.25</td>
<td>0.38</td>
<td>0.4</td>
<td>0.35</td>
<td>0.55</td>
<td>0.38</td>
<td>0.15</td>
<td>0.625</td>
<td></td>
</tr>
</tbody>
</table>

1. decimal __D__
   A. A place value position. One of one hundred equal parts.
2. decimal point __E__
   B. A number named by a whole number and a fraction.
3. tenth __F__
   C. A fraction that has a denominator that is a factor of 10 or 100 that can be stated as a decimal.
4. hundredth __A__
   D. A number with one or more digits to the right of the decimal point, such as $2.05.
5. mixed number __B__
   E. A point used in a number.
6. decimal equivalent __C__
   F. One of ten equal parts or $\frac{1}{10}$. 

Match each word to its definition. Write your answers on the line provided.

1. decimal
2. decimal point
3. tenth
4. hundredth
5. mixed number
6. decimal equivalent
Place 4 nickels, 3 dimes, 1 quarter, and 2 pennies on the table.

Read each question aloud to the student. Then write the student’s answers on the lines below the question.

1. What is the total number of coins on the table? 10
2. What is the decimal equivalent for the amount of nickels on the table? 0.40
3. What is the fraction equivalent for the amount of nickels on the table? \(\frac{4}{10}\)
4. Tell how you got your answer. 
   There are 4 nickels. There are a total of 10 coins.
5. What is the decimal equivalent for the amount of dimes on the table? 0.30
6. What is the fraction equivalent for the amount of dimes on the table? \(\frac{3}{10}\)
7. What is the fraction equivalent for the amount of quarters on the table? \(\frac{1}{10}\)
8. Who lives the farthest from the state park? Jamie
9. Who lives the closest to the state park? Deja
10. Prove your answer. 
    \(\frac{5\frac{1}{2}}{2} > 2.5\) since \(2.5 = 2\frac{1}{2}\)
11. What is the order of distance from least to greatest? 
    \(\frac{7}{4}, 2.5, \frac{3}{10}, 3.2, 5\frac{1}{2}\)
### Chapter 14 Assessment Answer Key

#### Chapter Diagnostic Assessment Page 44

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>( \frac{3}{8} )</td>
</tr>
<tr>
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<td>( \frac{1}{4} )</td>
</tr>
<tr>
<td>3.</td>
<td>( \frac{1}{2} )</td>
</tr>
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<td>( \frac{3}{5} )</td>
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<td>( \frac{1}{3} )</td>
</tr>
<tr>
<td>7.</td>
<td>( \frac{50}{100} )</td>
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<tr>
<td>8.</td>
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<td>10.</td>
<td>$0.87$</td>
</tr>
<tr>
<td>11.</td>
<td>$0.70$</td>
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<td>4</td>
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<td>15</td>
</tr>
<tr>
<td>16.</td>
<td>18</td>
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<tr>
<td>17.</td>
<td>24</td>
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<td>18.</td>
<td>12</td>
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<td>19.</td>
<td>12</td>
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#### Chapter pretest Page 45

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1.</td>
<td>0.73</td>
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<tr>
<td>2.</td>
<td>0.3</td>
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<tr>
<td>3.</td>
<td>4.15</td>
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<tr>
<td>4.</td>
<td>0.6</td>
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<tr>
<td>5.</td>
<td>25.7</td>
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<td>6.</td>
<td>36.36</td>
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<tr>
<td>7.</td>
<td>9.02</td>
</tr>
<tr>
<td>8.</td>
<td>11.9</td>
</tr>
<tr>
<td>9.</td>
<td>$&gt;$</td>
</tr>
<tr>
<td>10.</td>
<td>$=$</td>
</tr>
<tr>
<td>11.</td>
<td>$&lt;$</td>
</tr>
<tr>
<td>12.</td>
<td>$&gt;$</td>
</tr>
<tr>
<td>13.</td>
<td>( \frac{5}{100} ), 0.05</td>
</tr>
<tr>
<td>14.</td>
<td>( \frac{36}{100} ), 0.36</td>
</tr>
<tr>
<td>15.</td>
<td>( \frac{90}{100} ), 0.9</td>
</tr>
<tr>
<td>16.</td>
<td>( \frac{5}{10} ), 0.5</td>
</tr>
</tbody>
</table>

#### Quiz 1 Page 46

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>( \frac{90}{100} ), 0.90</td>
</tr>
<tr>
<td>2.</td>
<td>( \frac{5}{100} ), 0.05</td>
</tr>
<tr>
<td>3.</td>
<td>0.6</td>
</tr>
<tr>
<td>4.</td>
<td>0.18</td>
</tr>
<tr>
<td>5.</td>
<td>( \frac{41}{100} ), 0.41</td>
</tr>
<tr>
<td>6.</td>
<td>( \frac{236}{100} ), 2.36</td>
</tr>
<tr>
<td>7.</td>
<td>( \frac{30}{100} ), 1.30</td>
</tr>
<tr>
<td>8.</td>
<td>( \frac{75}{100} ), 1.75</td>
</tr>
<tr>
<td>9.</td>
<td>( \frac{56}{100} ), 3.56</td>
</tr>
<tr>
<td>10.</td>
<td>( \frac{298}{100} ), 2.98</td>
</tr>
<tr>
<td>11.</td>
<td>6.10</td>
</tr>
<tr>
<td>12.</td>
<td>4.75</td>
</tr>
</tbody>
</table>

(continued on the next page)
### Quiz 2
**Page 47**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>$&lt; $</td>
</tr>
<tr>
<td>2.</td>
<td>$&lt; $</td>
</tr>
<tr>
<td>3.</td>
<td>$&lt; $</td>
</tr>
<tr>
<td>4.</td>
<td>$&gt; $</td>
</tr>
</tbody>
</table>
| 5. | 4.8
    | 4.5
    | 0.48
    | 0.45 |
| 6. | 9.91
    | 9.1
    | 9.01
    | 0.91 |
| 7. | first weekend; last weekend |
| 8. | 45.2” 8.5”
    | 7.4” 7.1”
    | 6.9” 6.5”
    | 4.5” 2.8”
    | 1.5” |
| 9. | 11 peaches; 28 peaches; 61 total peaches |

### Quiz 3
**Page 48**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>$\frac{1}{4}$ 0.25</td>
</tr>
<tr>
<td>2.</td>
<td>$\frac{3}{5}$ 0.6</td>
</tr>
<tr>
<td>3.</td>
<td>$\frac{1}{5}$ 0.2</td>
</tr>
<tr>
<td>4.</td>
<td>$\frac{1}{2}$ 0.5</td>
</tr>
<tr>
<td>5.</td>
<td>$\frac{5}{10}$ 0.5</td>
</tr>
<tr>
<td>6.</td>
<td>$\frac{8}{10}$ 0.8</td>
</tr>
<tr>
<td>7.</td>
<td>$&lt; $</td>
</tr>
<tr>
<td>8.</td>
<td>$&gt; $</td>
</tr>
<tr>
<td>9.</td>
<td>$= $</td>
</tr>
</tbody>
</table>
| 10. | 8.75 hours
    | 12.5 hours |
| 11. | $\frac{2}{8}$ slice
    | banana bread |

### Mid-Chapter Review
**Page 49**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>$\frac{4}{16}$ 0.25</td>
</tr>
<tr>
<td>2.</td>
<td>$\frac{50}{100}$ 0.50</td>
</tr>
<tr>
<td>3.</td>
<td>$\frac{90}{100}$ 0.90</td>
</tr>
<tr>
<td>4.</td>
<td>$\frac{2}{30}$ 0.23</td>
</tr>
<tr>
<td>5.</td>
<td>$\frac{41}{100}$ 0.41</td>
</tr>
<tr>
<td>6.</td>
<td>$\frac{4.19}{100}$ 0.419</td>
</tr>
<tr>
<td>7.</td>
<td>4.9</td>
</tr>
<tr>
<td>8.</td>
<td>3.72</td>
</tr>
<tr>
<td>9.</td>
<td>7 boxes; 5 boxes</td>
</tr>
</tbody>
</table>
Chapter 14 Assessment Answer Key

Form 1
Page 55

1. B
2. F
3. D
4. H
5. A
6. G
7. C
8. H
9. B

Page 56

10. G
11. A
12. F
13. B
14. H
15. B
16. F

(continued on the next page)

Form 2A
Page 57

1. A
2. H
3. B
4. G
5. C
6. G
7. C
8. F
<table>
<thead>
<tr>
<th>From 2A (continued)</th>
<th>From 2B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page 58</td>
<td>Page 59</td>
</tr>
<tr>
<td>10. H</td>
<td>2. F</td>
</tr>
<tr>
<td>11. B</td>
<td>3. C</td>
</tr>
<tr>
<td>12. H</td>
<td>4. G</td>
</tr>
<tr>
<td>13. D</td>
<td>5. B</td>
</tr>
<tr>
<td>15. A</td>
<td>7. B</td>
</tr>
<tr>
<td></td>
<td>9. B</td>
</tr>
<tr>
<td></td>
<td>10. G</td>
</tr>
<tr>
<td></td>
<td>11. A</td>
</tr>
<tr>
<td></td>
<td>12. G</td>
</tr>
<tr>
<td></td>
<td>13. C</td>
</tr>
<tr>
<td></td>
<td>14. F</td>
</tr>
<tr>
<td></td>
<td>15. C</td>
</tr>
<tr>
<td></td>
<td>16. H</td>
</tr>
</tbody>
</table>
Chapter 14 Assessment Answer Key

Form 2C
Page 61

1. \( 1.13 \)
2. \( \frac{13}{100} \)
3. \( \frac{3}{100} \)
4. \( 9.12 \)
5. \( 0.27 \)
6. \( 14.25 \)
7. \( 0.8 \)
8. \(<\)
9. \(>\)
10. \(<\)
11. \(=\)
12. \(0.53,\)
   \(0.5,\)
   \(0.05\)
13. \(6.8, \frac{3}{4},\)
   \(6.71, \frac{69}{100}\)
14. \(\frac{4}{10}, 4.3,\)
   \(\frac{4}{10}, \frac{9}{100}\)

Page 62

15. \( Q \)
16. \( M \)
17. example:
   \(\frac{5.5}{100}\)
18. \(0.34\)
19. Ramon
20. \(0.4\)

Form 2D
Page 62

1. \( \frac{1.13}{100} \)
2. \( \frac{13}{3} \)
3. \( 100 \)
4. \( 0.27 \)
5. \( 9.12 \)
6. \( 0.8 \)
7. \( 14.25 \)
8. \(=\)
9. \(<\)
10. \(<\)
11. \(>\)
12. \(\frac{4}{10}, 4.3,\)
   \(\frac{4}{10}, \frac{9}{100}\)
13. \(0.53,\)
   \(0.5,\)
   \(0.05\)
14. \(6.8, \frac{3}{4},\)
   \(6.71, \frac{69}{100}\)

(continued on the next page)
Chapter 14 Assessment Answer Key

Form 2D (continued)
Page 64

15. \( \text{M} \)
16. \( \text{Q} \)
17. \( 0.4 \)
18. example: \( 5.5 \)

19. Ramon
20. \( 0.34 \)

Form 3
Page 65

1. \( 1.61 \)
2. \( \frac{161}{100} \)
3. \( \frac{1}{50} \)
4. \( 0.8 \)
5. \( 0.32 \)
6. \( 40.01 \)
7. \( 17.88 \)
8. \( > \)
9. \( < \)
10. \( > \)
11. \( = \)
12. \( 0.65, 0.6, 0.6, 0.56, 0.06 \)

Page 66

13. \( \frac{4.85}{4.75} \)
14. \( \frac{3.96}{100} \)
15. \( \text{Q} \)
16. \( \text{S} \)
17. Sample answer: \( 0.4 \)
18. \( 0.72 \)
19. George
20. \( 0.37 \)
# Chapter 14 Assessment Answer Key

**Page 67, Extended-Response Test**

**Scoring Rubric**

<table>
<thead>
<tr>
<th>Level</th>
<th>Specific Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The student demonstrates a <strong>thorough understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student has responded correctly to the task, used mathematically sound procedures, and provided clear and complete explanations and interpretations. The response may contain minor flaws that do not detract from the demonstration of a thorough understanding.</td>
</tr>
<tr>
<td>3</td>
<td>The student demonstrates an <strong>understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student’s response to the task is essentially correct with the mathematical procedures used and the explanations and interpretations provided demonstrating an essential but less than thorough understanding. The response may contain minor errors that reflect inattentive execution of the mathematical procedures or indications of some misunderstanding of the underlying mathematics concepts and/or procedures.</td>
</tr>
<tr>
<td>2</td>
<td>The student has demonstrated only a <strong>partial understanding</strong> of the mathematics concepts and/or procedures embodied in the task. Although the student may have used the correct approach to obtaining a solution or may have provided a correct solution, the student’s work lacks an essential understanding of the underlying mathematical concepts. The response contains errors related to misunderstanding important aspects of the task, misuse of mathematical procedures, or faulty interpretations of results.</td>
</tr>
<tr>
<td>1</td>
<td>The student has demonstrated a <strong>very limited understanding</strong> of the mathematics concepts and/or procedures embodied in the task. The student’s response to the task is incomplete and exhibits many flaws. Although the student has addressed some of the conditions of the task, the student reached an inadequate conclusion and/or provided reasoning that was faulty or incomplete. The response exhibits many errors or may be incomplete.</td>
</tr>
<tr>
<td>0</td>
<td>The student has provided a <strong>completely incorrect solution</strong> or uninterpretable response, or no response at all.</td>
</tr>
</tbody>
</table>
Chapter 14 Assessment Answer Key

Page 67, Extended-Response Test

Sample Answers

In addition to the scoring rubric found on page A27, the following sample answers may be used as guidance in evaluating open-ended assessment items.

1. **a.** Decimals represent parts of wholes, similar to the way fractions do.
   - b. \( \frac{7}{10} \), 0.7, seven tenths
   - c. \( \frac{23}{100} \), 0.23, twenty-three hundredths
   - d. \( 4\frac{1}{10} \), 4.1, four and one-tenth

2. **a.** The heights of both Amy’s and George’s seedlings are written as decimals. To compare them, first plot each decimal on a number line. The height of Amy’s plant comes (1.5) before the height of George’s plant (1.55) on the number line, so 1.5 < 1.55. George’s plant is taller.
   - b. The height of Keisha’s plant, \( 1\frac{78}{100} \), written as a decimal is 1.78. The height of Michael’s plant, \( 1\frac{22}{100} \), written as a decimal is 1.22. To compare them, first plot each decimal on a number line. 1.22 comes before 1.78, so 1.22 < 1.78.
   - c. Write the plant heights as decimals and plot them on a number line. Then, list them from left to right. Michael (1.22), Amy (1.5), George (1.55), Keisha (1.78)

3. **a.** To find out who scored better, convert the test scores into decimals and plot them on a number line. Noni’s score, \( \frac{85}{100} \), is 0.85. Ned got three-fourths of the answers correct, and \( \frac{3}{4} \) written as a decimal is 0.75. On a number line, Noni’s score is farther to the right than Ned’s score. Noni scored better because 0.85 is more than 0.75.
   - b. \( \frac{25}{100} \) written in simplest form is \( \frac{1}{4} \). Written as a decimal, Nelly’s score is 0.25.
Chapter 14 Assessment Answer Key

STP Page 69

1. B
2. F
3. D

Page 70

4. H
5. B

Page 71

9. J
10. 0.25
11. 0.6
12. \( \frac{0.20}{78} \)
13. \( \frac{1}{100} \)
14. \( \frac{1}{6} \)
15. 3
16. 23
17. $30