

Survive Math Five

Fractions and Decimals

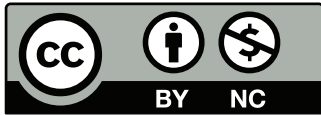


Survive Math 5

Fractions and Decimals



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Fractions and Decimals

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Survive Math Five

The intent of this program is to assist you, the parent, in working with your child to develop a strong mathematical base of knowledge and to develop mathematic literacy.

Many children arrive in Grade Five lacking, or are weak in basic mathematic concepts and operations. Children need the freedom to explore and to develop reasoning and mathematic skills, and to be able to show and explain these skills to others. Also, children should understand that mathematics is not just simple rules; it should make sense, be logical, and enjoyable.

To be successful in mathematics children must understand the “how” and “why” of each operation. A child’s ability to reason is as valuable as her or his ability to find the correct answers.

It is important for children to use “manipulatives” (concrete objects) to explore, develop, and apply mathematical concepts. Before children are allowed to use a calculator as a tool they should learn and understand the basic facts.

The activities in this program are designed to engage your child’s interest, develop a number sense, and learn the basic operations and concepts for:

- addition and subtraction
- multiplication and division
- fractions and decimals
- problem solving

At the completion of this program your child should be able to use the number operations appropriately and effectively.

In each package you will find:

- Twenty-minute lessons and ideas for review
- Pre-Tests
- Mastery Test
- Practice Sheets
- Games
- Answer Key
- Glossary

In each package there is also a selection of **Teaching Aids** that are to be used with selected lessons.

Practice Sheets

Each practice sheet contains the following sections:

- Warm-Up
- It's Your Turn
- Challenge Yourself

All of the activities in each section are short and, we hope, enjoyable.

Before your child begins this package, you will administer a Pre-Test that will determine the lesson where you will begin working with your child. All Mathematics computation should be completed in pencil.

It is important that your child understands the concept or skill covered in each lesson before you move to the next one. If your child has difficulty with any concept or skill, you will need to give her or him additional concrete “hands-on” experiences and practice. Use the information in the package as a guide if you need to develop further practice materials.

When your child has a good understanding of the concept or skill taught in any given lesson, proceed to the next lesson. There is little value in asking your child to do additional work on something she or he already knows.

Additional materials needed for many lessons:

- Ruler to use as a number line
- Blank paper or chalkboard
- Playing cards
- Calculator
- Access to a computer

Mathematics concepts are easier to understand if your child progresses from the **concrete**, to the **pictorial**, to **numerals**.

It is important to provide your child with a selection of concrete materials, for example, you could use buttons, straws, pasta pieces, pennies, etc.

There is an old Chinese proverb that says: *I hear and I forget*

I see and I remember
I do and I understand

Math Web Sites

Teaching Aids

<http://www.mathsisfun.com/worksheets/decimal-fractions.php>

<http://www.happychild.org.uk/wks/math/key2/fractions/index.htm>

Fractions

<http://www.learningplanet.com/sam/ff/index.asp>

<http://www.funbrain.com/cgi-bin/fob.cgi?A1=s&A2=0>

<http://www.explorelearning.com/index.cfm?method=cResource.dspView&ResourceID=252>

http://www.hbschool.com/activity/mmath/mmath_frac.html

<http://www.quia.com/mc/351.html>

<http://www.gamequarium.com/fractions.html>

<http://www.dositey.com/math/mistery2.html>

<http://www.coolmath4kids.com/fractions/>

<http://www.aaamath.com/fra.html>

<http://www.k111.k12.il.us/king/math.htm#Fractions>

<http://www.picadome.fcps.net/lab/currl/math/fractions.htm>

<http://www.shodor.org/interactivate/activities/fgame/index.html>

Decimals

<http://www.explorelearning.com/index.cfm?method=cResource.dspView&ResourceID=208>

<http://www.gamequarium.com/decimals.html>

<http://www.decimalsquares.com/dsGames/>

<http://www.321know.com/dec.htm>

<http://www.mcwn.org/Decimals/DecimalsMain.html>

Common and decimal fraction games

http://www.homeschoolmath.net/math_resources_3.php

Decimal/fraction match game

http://www.alfy.com/Scripts/go.asp?url=http://www.harcourtschool.com/activity/con_math/g03c23.html&purl=/Teachers/Teach/Thematic_Units/Fractions/Fraction_1.asp

Fraction to Decimal conversion

<http://www.math2.org/math/general/arithmetic/fradec.htm>

Board and Tile Games

<http://yahooligans.yahoo.com/content/games/>

General Math Games

<http://www.funbrain.com/brain/MathBrain/MathBrain.html>

Welcome to Fractions and Decimals



Pre-Test

Before your child begins the package you will administer the following Pre-Test.

Place the Pre-Test in front of your child. Explain that she or he is to complete as many questions as possible and to stop working when she or he answer any more questions. Do not help your child to complete any question. Give your child as much time as she or he needs to complete the test. Make sure your child has a sharp pencil and an eraser.

Pre-Test

Give your child the Pre-Test from the Common Fractions and Decimals Practice sheet section. Help your child to complete the examples to make sure she or he understands how the test is to be completed. Ask your child to complete the Pre-Test independently.

You may wish to do this in more than one sitting as there are a number of parts to the test.

When the test is completed, mark your child's work. The Answer Key is at this book. When you see the test results you should have a good indication of the skills your child needs to concentrate on. The test is divided into sections with the corresponding lesson numbers beside the part where these skills will be taught. The results of this Pre-Test will indicate where your child needs to start in this section section.

Pre-Test—Fractions and Decimals

Part A

Answer the following questions.

1. What is a fraction? _____

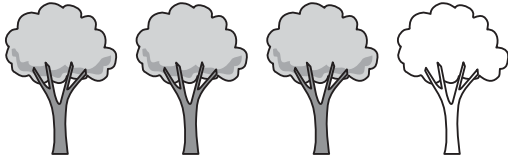
2. In a fraction what does the numerator tell? _____

3. In a fraction what does the denominator tell? _____

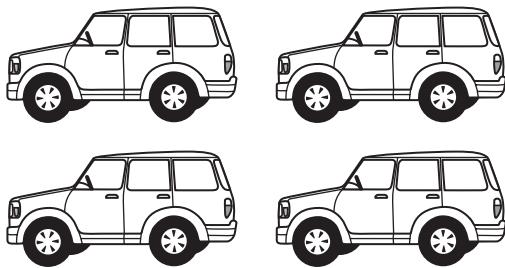
Part B

A. Shade each diagram so that each one shows the fraction below.

Example:



1.



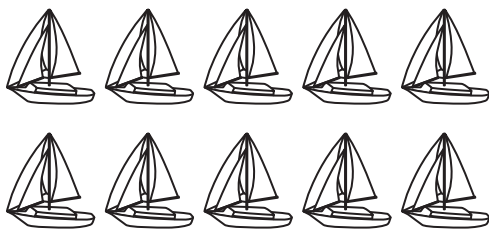
$\frac{1}{4}$ of the cars

2.



$\frac{4}{8}$ of the shoes

3.



three tenths of the boats

4.



two fifths of the balls

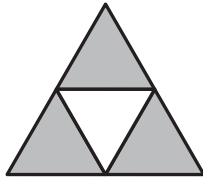
B. Write a fraction for each of the shaded parts in each shape.

Example:

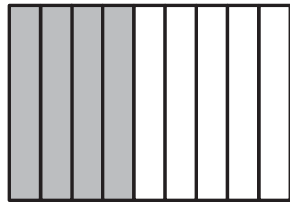


$$\frac{4}{6}$$

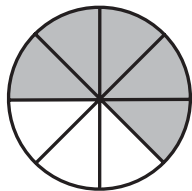
1.



2.

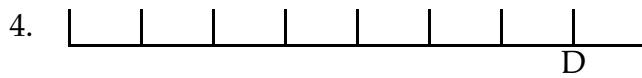
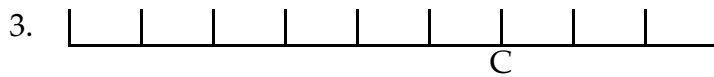
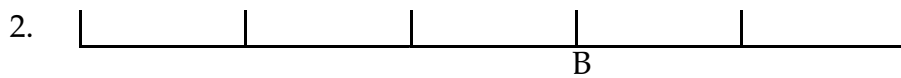
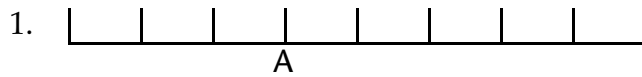


3.



C. Write the fraction that represents each of the lettered points on each number line.

Example:



Part C

A. Write the fractions for the following.

Example: If the numerator is 3 and the denominator is 8: $\frac{3}{8}$

1. If the numerator is 2 and the denominator is 4. _____
2. If the numerator is 1 and the denominator is 6. _____
3. If the denominator is 9 and the numerator is 7. _____
4. If the denominator is 7 and the numerator is 6. _____

B. Order the fraction in each line from the least to the greatest.

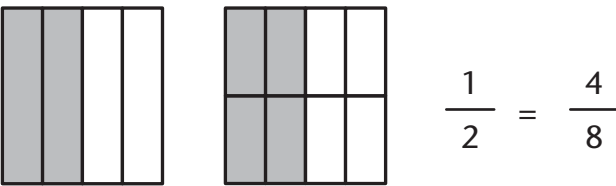
Example: $\frac{11}{12}, \frac{8}{12}, \frac{9}{12}, \frac{10}{12}, \frac{3}{12}$
 $\frac{3}{12}, \frac{8}{12}, \frac{9}{12}, \frac{10}{12}, \frac{11}{12}$

1. $\frac{7}{8}, \frac{2}{8}, \frac{4}{8}, \frac{8}{8}, \frac{6}{8}$ _____
2. $\frac{6}{10}, \frac{10}{10}, \frac{4}{10}, \frac{8}{10}$ _____
3. $\frac{5}{7}, \frac{2}{7}, \frac{6}{7}, \frac{1}{7}, \frac{7}{7}, \frac{4}{7}$ _____

Part D

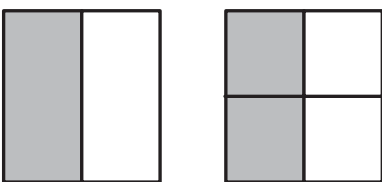
A. Complete the equivalent fractions by writing each fraction below the diagram.

Example:



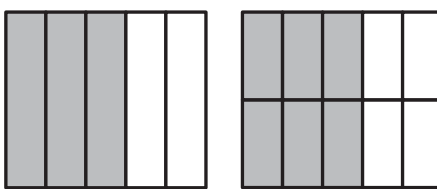
$$\frac{1}{2} = \frac{4}{8}$$

1.



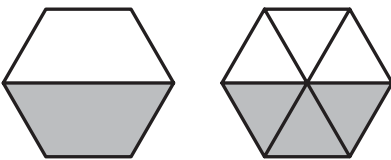
— = —

2.



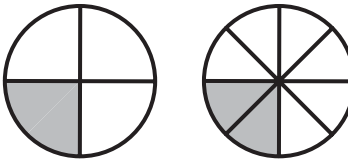
— = —

3.



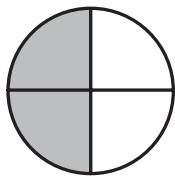
— = —

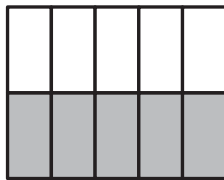
4.




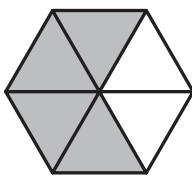
— = —

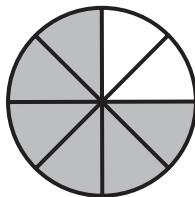
B. Write 2 equivalent fractions for the shaded parts of each diagram.

Example:  $\frac{2}{4} = \frac{1}{2}$

1. 

2. 

3. 

4. 

C. Using $<$, $>$, or $=$ compare each set of fractions.

Example: $\frac{3}{6} < \frac{5}{6}$ $\frac{9}{10} > \frac{4}{10}$ $\frac{3}{3} = \frac{3}{3}$

1. $\frac{7}{10}$ _____ $\frac{5}{10}$

2. $\frac{1}{5}$ _____ $\frac{1}{5}$

3. $\frac{1}{3}$ _____ $\frac{2}{3}$

4. $\frac{6}{8}$ _____ $\frac{7}{8}$

5. $\frac{3}{5}$ _____ $\frac{4}{5}$

6. $\frac{2}{2}$ _____ $\frac{1}{2}$

Part E

Solve the following problems.

1. John gave $\frac{3}{5}$ of his car collection to Jim. What fraction of the car collection did John still have?

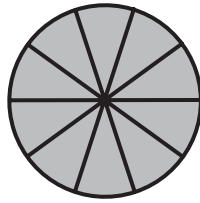
2. Jill spent $\frac{4}{10}$ of a dollar. What fraction of the dollar did she have left?

3. Three people ate $\frac{2}{3}$ of a pizza each? How many pizzas did they have altogether?

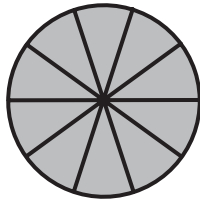
These skills are covered in Lessons 3 and 4.

Part F

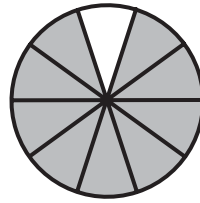
A. Write a decimal fraction and a common fraction for each of the shaded parts.



2.9



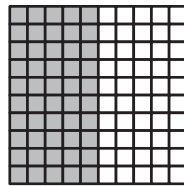
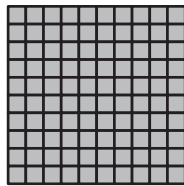
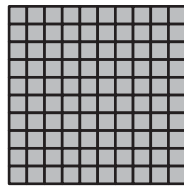
$2\frac{9}{10}$



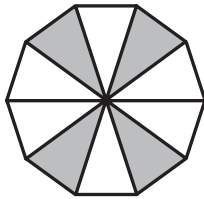
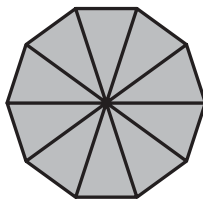
1.



2.



3.



B. Write equivalent decimal numbers for each of the following.

1. Show as tenths. e.g. $2.70 = 2.7$

0.60 _____

4.300 _____

2. Show as hundredths.

47.6 _____

0.8 _____

3. Show as thousandths.

0.07 _____

6.40 _____

Part G

A. Count by tenths.

Example: From 1.7 to 2.5

1.7, 1.8, 1.9, 2, 2.1, 2.2, 2.3, 2.4, 2.5

1. From 0.8 to 1.4: _____

2. From 1.6 to 2.1: _____

3. From 2.7 to 3.4: _____

B. Write each number as a decimal in standard form.

five and two tenths _____

seven tenths _____

nine hundredths _____

C. Write the underlined digit as a decimal and as a fraction.

14.76 _____

5.35 _____

32.08 _____

D. Write the value of each underlined digit.

36.72 _____

15.69 _____

8.07 _____

E. Use $>$, $<$, or $=$ to compare each pair of decimals.

1. 6.8 _____ 6.08

2. 8.50 _____ 8.45

3. 0.33 _____ 0.330

4. 14.01 _____ 14.00

5. 20.015 _____ 20.106

F. Circle the number that has the greatest value.

2.904

2.9

2.899

2.90

2.09

These skills are covered in Lessons 9 and 10.

Part H

A. Round each decimal to the nearest tenth.

2.44 _____

8.65 _____

20.07 _____

11.02 _____

15.88 _____

B. Round these numbers to the nearest one.

7.9 _____

16.31 _____

17.843 _____

These skills are covered in Lesson 12.

Part J

A. Write each money amount using a dollar sign.

8¢ _____

75¢ _____

three dollars and 25 cents _____

sixty dollars and five cents _____

B. Counting decimals. Write the decimal fraction that comes **before**.

1. _____ 15.60

2. _____ 7.400

3. _____ 0.030

C. Counting decimals. Write the decimal fraction that come **after**.

1. 8.99 _____

2. 46.099 _____

3. 38.39 _____

These skills are covered in Lesson 16.

Part I

A. Round each decimal number to the nearest whole number.

5.2 _____

17.9 _____

16.1 _____

\$7.25 _____

44.06 _____

75.88 _____

26.9 _____

\$18.70 _____

B. Estimate the sums by rounding each number to the nearest whole number then adding.

$$\begin{array}{r} 1. \quad 19.5 \quad \rightarrow \\ \quad +18.6 \quad \rightarrow \quad \underline{\hspace{1cm}} \end{array}$$

$$\begin{array}{r} 2. \quad 123.8 \quad \rightarrow \\ \quad +81.5 \quad \rightarrow \quad \underline{\hspace{1cm}} \end{array}$$

C. Estimate the differences by rounding each number to the nearest whole number and then subtracting.

$$\begin{array}{r} 1. \quad 77.6 \quad \rightarrow \\ \quad -2.9 \quad \rightarrow \quad \underline{\hspace{1cm}} \end{array}$$

$$\begin{array}{r} 2. \quad 419.5 \quad \rightarrow \\ \quad -223.8 \quad \rightarrow \quad \underline{\hspace{1cm}} \end{array}$$

These skills are covered in Lesson 13.

Part K

A. Add.

1. $0.7 + 0.4 =$

2. $0.6 + 0.9 =$

3.
$$\begin{array}{r} 8.7 \\ + 9.6 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 6.3 \\ + 14.5 \\ \hline \end{array}$$

B. Line up the decimal points and then add.

1. $2.1 + 3.7 + 6.2 =$

2. $22.6 + 30.5 + 21.8 =$

3. $0.329 + 2.90 + 90.3 + 1.894 =$

4. $345 + 0.1 + 0.05 + 6.335 =$

These skills are covered in Lesson 14.

Part L

A. Subtract these questions.

$$\begin{array}{r} 1. \quad 3.5 \\ \quad -1.6 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 2.3 \\ \quad -1.9 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 7.2 \\ \quad -6.9 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 75.6 \\ \quad -66.4 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 300.5 \\ \quad -172.6 \\ \hline \end{array}$$

B. Line up the decimal points and then subtract.

$$1. \quad 224.5 - 77.2 =$$

$$2. \quad 111.1 - 44.4 =$$

$$3. \quad 83.19 - 44 =$$

$$4. \quad 6.763 - 5.29 =$$

These skills are covered in Lesson 15.

Part M

A. Estimate the sums by rounding each number to the nearest dollar and add.

$$\begin{array}{r} 1. \quad \$9.05 \rightarrow \\ \quad +89.90 \rightarrow \end{array} \rightarrow \underline{\hspace{2cm}}$$

$$\begin{array}{r} 2. \quad \$16.99 \rightarrow \\ \quad +22.95 \rightarrow \end{array} \rightarrow \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3. \quad \$87.50 \rightarrow \\ \quad 67.90 \rightarrow \\ \quad +94.20 \rightarrow \end{array} \rightarrow \underline{\hspace{2cm}}$$

B. Estimate the differences by rounding each number to the nearest dollar and subtract.

$$\begin{array}{r} 1. \quad \$65.50 \rightarrow \\ \quad -49.20 \rightarrow \end{array} \rightarrow \underline{\hspace{2cm}}$$

$$\begin{array}{r} 2. \quad \$20.10 \rightarrow \\ \quad -9.75 \rightarrow \end{array} \rightarrow \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3. \quad \$52.40 \rightarrow \\ \quad -21.80 \rightarrow \end{array} \rightarrow \underline{\hspace{2cm}}$$

C. Add the following sums of money.

$$\begin{array}{r} 1. \quad \$415.45 \\ \quad +284.55 \end{array}$$

$$\begin{array}{r} 2. \quad \$248.15 \\ \quad + 6.20 \end{array}$$

$$\begin{array}{r} 3. \quad \$470.22 \\ \quad +16.79 \end{array}$$

D. Subtract.

$$\begin{array}{r} 1. \quad \$85.50 \\ \quad \underline{-4.90} \end{array}$$

$$\begin{array}{r} 2. \quad \$107.80 \\ \quad \underline{-19.95} \end{array}$$

$$\begin{array}{r} 3. \quad \$15.50 \\ \quad \underline{-9.99} \end{array}$$

$$\begin{array}{r} 4. \quad \$20.00 \\ \quad \underline{-16.95} \end{array}$$

E. Write these decimal fractions as common fractions.

$$1. \quad 0.24 =$$

$$2. \quad 0.3 =$$

$$3. \quad 0.113 =$$

$$4. \quad 0.45 =$$

$$5. \quad 0.008 =$$

$$6. \quad 0.12 =$$

These skills are covered in Lessons 17–20.

Lesson 1

Representing Fractions—Parts of a Whole



What You Need

- Practice sheets
- Blank paper or chalkboard
- Coloured pencils



Warm-Up

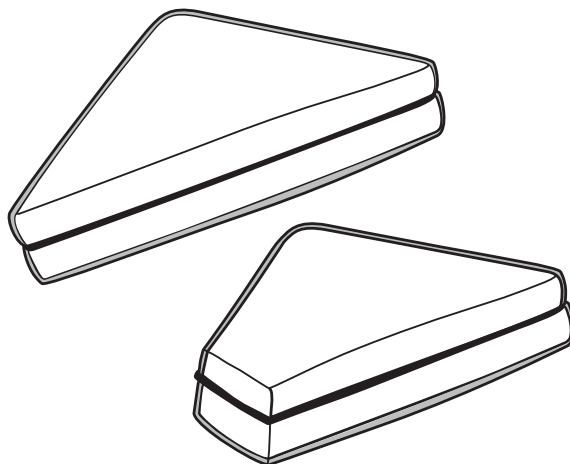
The concept of fractions can be a difficult concept for some children to grasp. If your child has difficulty with this concept, show him or her some concrete examples of fractions.

For example, cut a piece of fruit into halves or quarters, or fold up some sheets of paper into halves, quarters, thirds, fourths, and tenths.

Explain to your child that fractions are used to show an equal part or parts of a whole object.

Parent Script:

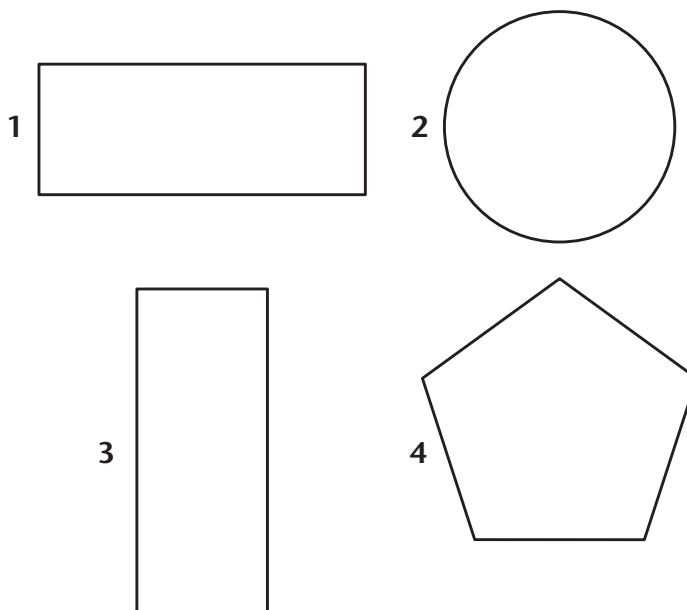
Look at these illustrations.



Which illustration represents exactly $\frac{1}{2}$ of a sandwich?

Why isn't the other one $\frac{1}{2}$ of a sandwich?

Point to the following illustrations.



Give your child a sheet of paper and ask him or her to divide:

- Number 1 into 4 equal parts
- Number 2 into 6 equal parts
- Number 3 into 3 equal parts
- Number 4 into 5 equal parts

Correct your child's work.

Give your child a sheet of paper and a pencil. Ask him or her to take a quick trip around the house and write down the names of any objects that can be divided into equal parts.

When your child returns from his or her search, check over the list to make sure all of the objects he or she found could be divided into equal parts.

There is no formal assigned **Warm-Up** activity in this lesson.



Exploring the Topic

The activities in this lesson will give your child opportunities to work with fractions using concrete or pictorial examples.

Parent Script:

When you look at your list, it is obvious that fractions are everywhere.

Let's look at these illustrations to see what else can be divided into equal parts, or fractions, of the whole object.

$\frac{1}{4}$ of a dollar.



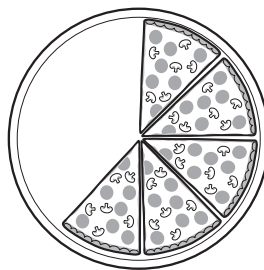
The glass is $\frac{1}{2}$ full.



$\frac{1}{3}$ of the earth is land.



$\frac{5}{8}$ of the pizza is left.



Discuss each of the illustrations with your child.

Ask your child questions about each of the illustrations.

For example, can you tell me how many quarters there are in a dollar? (*four*)

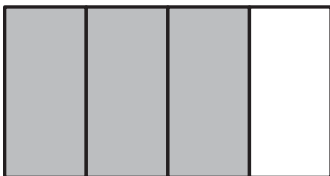
How many pennies are there in a quarter?

How many pennies are there in a dollar?

25 pennies is one fourth or one quarter of 100.

Therefore one quarter is one fourth $\left(\frac{1}{4}\right)$ of a dollar.

Look at this illustration.



How many equal parts are there? (4)

How many parts are shaded? (3)

You would say that 3 parts of 4 equal parts are shaded.

You would write the fraction as $\frac{3}{4}$, because 3 of the 4 parts are shaded. We call this fraction three - fourths or three quarters.

There are two important terms you need to know when you work with fractions.

- **Numerator**—the number above the fraction bar. It indicates the number of parts of the whole

Example: $\frac{1}{2}$

- **Denominator**—the number below the fraction bar. It indicates how many parts the whole is divided into

Example: $\frac{1}{2}$

Fractions come in many forms. You can have fractions of very small numbers or of very large numbers. Let's look at some of them.

Halves	One Half	$\frac{1}{2}$
Thirds	Two Thirds	$\frac{2}{3}$
Fourths	One Fourth	$\frac{1}{4}$
Fifths	Three Fifths	$\frac{3}{5}$
Sixths	Five Sixths	$\frac{5}{6}$
Eighths	One Eighth	$\frac{1}{8}$
Tenths	Four Tenths	$\frac{4}{10}$
Hundredths	Seventy Hundredths	$\frac{70}{100}$

Go through the list of fractions with your child. As you do, ask questions such as:

- What is the numerator in this fraction?
- What is the denominator?
- How many parts are there in the whole object?
- What does the number 2 in two - thirds $\left(\frac{2}{3}\right)$ tell you?



If your child needs extra practice recognizing and naming fractions, go to this Web site: <http://www.tlsbooks.com/fra1.htm>

If this Web site does not open, you can find a similar site by typing in Naming Fractions into your Search Engine, for example, *Google*.

Your child can write the answers on a sheet of paper, or you can print the page for him or her to complete.



It's Your Turn

Have your child look at the Lesson 1 Practice Sheet. To make sure your child understands the activity directions, help him or her to complete the first question. Now ask your child to complete the rest of the section independently.

When your child has completed this section, correct his or her work. The Answer Key is at the back of this book. Help your child to complete any needed corrections.



Challenge Yourself

Have your child complete this section on the Lesson 1 Practice Sheet. When your child has completed this section, correct his or her work. Help your child complete any corrections.

Lesson 2

Fractions of a Set



What You Need

- Practice sheets
- Teaching Aids
pennies, buttons, macaroni pieces (optional)
- Blank paper or chalkboard
- Coloured pencils



Warm-Up

Take out the Lesson 2 Practice Sheet and ask your child to complete the Warm-Up activity. When he or she is finished, correct the work with your child.



Exploring the Topic

Parent Script:

In the last lesson, and in the **Warm-Up** activity, the fractions you wrote or drew were all fractions that represented parts of a whole object. Today you will learn to write fractions of a set of objects.

For example, 5 players on a basketball team could be called a set. If 3 players were girls, we would think that $\frac{3}{5}$ (three fifths) of the team were women, so $\frac{2}{5}$ of the players would be men.

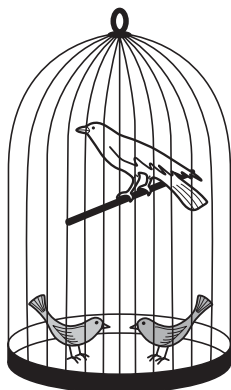
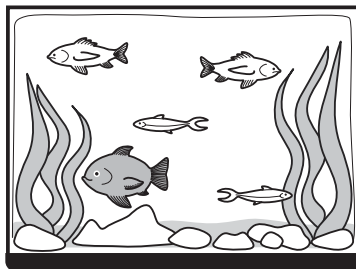
Think about our family.

How many people are in our family?

How many are males?

How many are females?

Direct your child's attention to the following illustrations.

**Parent Script:**

How many pets does Jack have? (8)

How many are fish? (5)

How many are birds? (3)

If 5 of the 8 pets are fish, what fraction would you write? $\left(\frac{5}{8}\right)$

What fraction of the pets are birds? $\left(\frac{3}{8}\right)$

So you would write:

$$\frac{5}{8} \text{ are fish} \quad \frac{5 - \text{number of fish}}{8 - \text{number in the group}}$$

$$\frac{3}{8} \text{ are birds} \quad \frac{3 - \text{number of birds}}{8 - \text{number in the group}}$$

Write these children's names on the chalkboard or on a sheet of paper.

MARY KEN LISA JEFF LARRY

Ask your child the following questions:

How many names are in the group?

How many are girls' names?

How many are boys' names?

What fraction of the group are girls' names? $\left(\frac{2}{5}\right)$

What fraction of the group are boys' names? $\left(\frac{3}{5}\right)$

What fraction of the group has four letters in their names? $\left(\frac{3}{5}\right)$

What fraction of the group is Larry's name? $\left(\frac{1}{5}\right)$

If your child has difficulty visualizing these fractions, you should use concrete objects to represent each of the letters in the children's names, for example, pennies, buttons or macaroni pieces.

Give your child as many concrete examples of fractions of a set as he or she needs.

Parent Script:

Look at the number line. It has been divided into 10 equal parts. Can you see the points labeled A, B, and C?



What number is Point A at? (3)

What fraction of the line is Point A? ($\frac{3}{10}$ of the length of the line.)

What number is Point B at? (6)

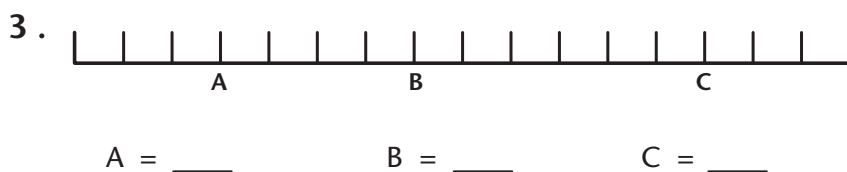
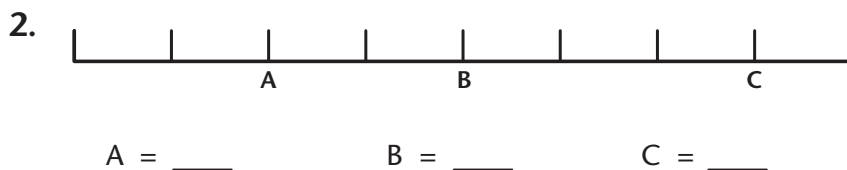
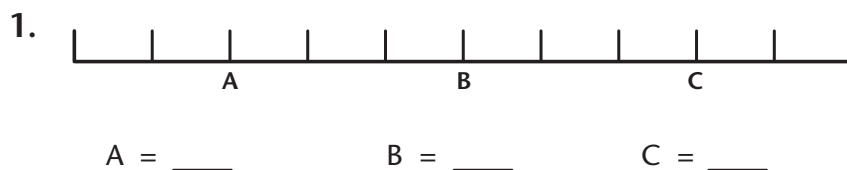
What fraction of the line is Point B? ($\frac{6}{10}$ of the length of the line.)

What number is Point C at? (9)

What fraction of the line is Point A? ($\frac{9}{10}$ of the length of the line.)

Lines can be divided into any number of parts. In the example the denominator of each fraction is 10. The 10 represents the total number of parts in the line.

Point to the examples below. Ask your child to tell you the fraction for each designated letter along the number line. Have your child write this fraction beside the appropriate letter under the number line. Help your child to complete any corrections.



These are the answers your child should give you.

$$1. \quad A = \frac{2}{10} \quad B = \frac{5}{10} \quad C = \frac{8}{10}$$

$$2. \quad A = \frac{2}{8} \quad B = \frac{4}{8} \quad C = \frac{7}{8}$$

$$3. \quad A = \frac{3}{16} \quad B = \frac{7}{16} \quad C = \frac{13}{16}$$

Give your child as much practice as he or she needs to find the fractions of different points on a number line.



It's Your Turn

Have your child look at the Lesson 2 Practice Sheet. To make sure your child understands the activity directions help him or her to complete the first question. Now ask your child to complete the rest of the section independently.

When your child has completed this section, correct his or her work. Help your child to complete any needed corrections.



Challenge Yourself

Have your child complete this section on the Lesson 2 Practice Sheet. When your child has completed this section, correct his or her work. Help your child to complete any corrections.

Before you begin a new lesson, make sure you review the concepts and skills taught in previous lessons.

Lesson 3

Equivalent Fractions



What You Need

- Practice sheets
- Teaching Aids
 - A selection of coins to \$1.00
- Blank paper or chalkboard
- Coloured pencils



Warm-Up

Take out the Lesson 3 Practice Sheet and ask your child to complete the Warm-Up activity. When he or she is finished, correct the work with your child. The Answer Key is at the back of this book.



Exploring the Topic

Parent Script:

In this lesson you will learn about **Equivalent Fractions**. Although it is a fairly big term, equivalent means that 2 or more fractions can represent the same amount.

If you think about money, there are many ways to show 50 cents using various coins.

Can you tell me some of these ways?

If your child needs help answering these questions, give him or her the appropriate number of coins to find the answers.

Parent Script:

How many quarters are there in 50 cents? (2)

How many dimes are there in 50 cents? (5)

How many pennies are there in 50 cents? (50)

How many nickels are there in 50 cents? (10)

Write the following sentences on the chalkboard or on a sheet of paper. As your child gives you the answers fill in the missing information.

1. There are _____ quarters in a dollar. (4)
 2. There are _____ dimes in a dollar. (10)
 3. There are _____ nickels in a dollar. (20)
 4. There are _____ pennies in a dollar. (100)
- If I had 50 cents, what fraction of a dollar would it be? $\left(\frac{1}{2}\right)$

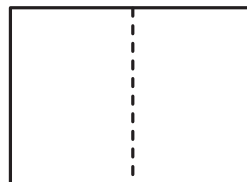
Using the information you have gathered, ask your child the following questions. If necessary, give your child the appropriate coins for him or her to find the answers. Write the answers on the chalkboard or on a sheet of paper.

For example: Quarters: 1 quarter is ? of a dollar.

- If there are 4 quarters in a dollar, what fraction of a dollar is the quarter? $\left(\frac{1}{4}\right)$
- If there are 10 dimes = in a dollar, what fraction of a dollar is the dime? $\left(\frac{1}{10}\right)$
- If there are 20 quarters in a dollar, what fraction of a dollar is the dime? $\left(\frac{1}{20}\right)$
- If there are 100 pennies in a dollar, what fraction of a dollar is the penny? $\left(\frac{1}{100}\right)$

Give your child a sheet of paper. Ask your child to follow these directions.

1. Fold your paper into 2 equal parts.



2. Colour in one part of the paper.

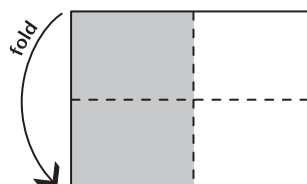


$$\frac{1}{2}$$

3. How much of the paper is coloured? (*1 part*)

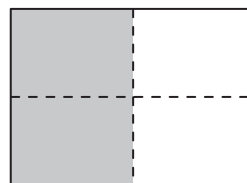
4. What fraction would you write? $\left(\frac{1}{2}\right)$

5. Fold your paper across the middle and then unfold it.



6. How many parts of the paper are coloured now? (*2*)

7. What fraction would you write to represent the coloured parts? $\left(\frac{2}{4}\right)$



$$\frac{2}{4}$$

Parent Script:

When you folded the sheet of paper into two equal parts, you coloured one half of it. Did you colour in any more of the paper when you folded it into four parts and 2 of the 4 parts were coloured?

Look at the diagrams on page 34. The shaded part of the second diagram is $\frac{1}{2}$ and the shaded part of the fourth

diagram is $\frac{2}{4}$.

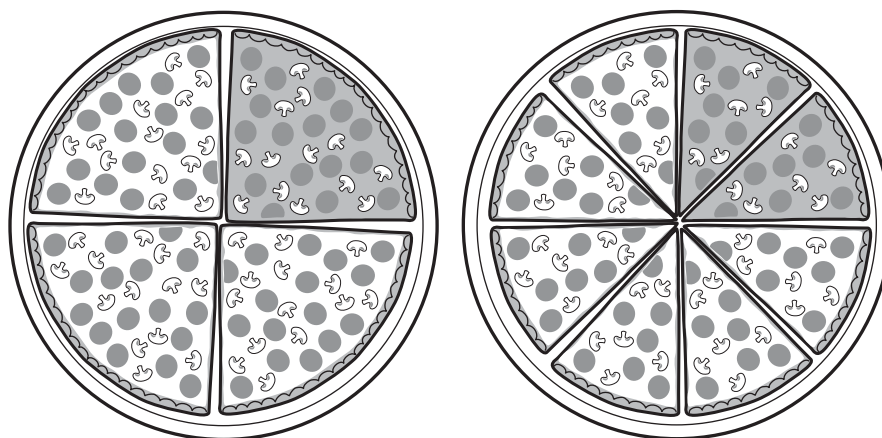
Therefore, $\frac{1}{2}$ is the same as $\frac{2}{4}$.

We say these are **equivalent** fractions.

You would write the fractions this way.

$$\frac{1}{2} = \frac{2}{4}$$

Direct your child's attention to the illustrations below.



Ask your child the following questions.

- How many equal parts is the first pizza divided into? (4)
- How many parts are coloured? (1)
- What fraction would you write? $\left(\frac{1}{4}\right)$
- How many equal parts is the second pizza divided into? (8)
- How many parts are coloured? (2)
- What fraction would you write? $\left(\frac{2}{8}\right)$
- Is $\frac{1}{4}$ the same as $\frac{2}{8}$?
- What are the equivalent fractions? $\left(\frac{1}{4} \text{ and } \frac{2}{8}\right)$
- How would you write them?
- $\frac{1}{4} = \frac{2}{8}$ The same amount of both pizzas is coloured.

Give your child as much practice finding equivalent fractions as he or she needs.



It's Your Turn

Have your child look at Lesson 3 Practice Sheet. Before your child completes this activity, make sure he or she has a complete understanding of equivalent fractions. Ask your child to complete this section independently.

When your child has completed this section, correct his or her work. Help your child to complete any needed corrections.



Challenge Yourself

Have your child complete this section on the Lesson 3 Practice Sheet. When your child has completed this section, correct his or her work. Help your child to complete any corrections.

Note: Your child may need more than one session to complete all of the activities in each lesson.

Lesson 4 Comparing Fractions



What You Need

- Practice sheets
- Blank paper or chalkboard



Warm-Up

Take out the Lesson 4 Practice Sheet and ask your child to complete the Warm-Up activity. When he or she is finished, correct the work with your child.



Exploring the Topic

Parent Script:

If someone asked you whether you would like $\frac{3}{10}$ of a dollar or $\frac{5}{10}$ of a dollar, what would you say?

Why would you want $\frac{5}{10}$ of a dollar?

What is $\frac{5}{10}$ of a dollar? (*5 dimes or 50 cents*)

How much would $\frac{3}{10}$ be? (*3 dimes or 30 cents*)

Which is the greater? (*50 cents or $\frac{5}{10}$*)

In this lesson you will learn to compare fractions that have a common (the same) denominator.

Do you remember what is the denominator of a fraction?

Good! The denominator is the bottom number in a fraction that represents the total number of equal parts.

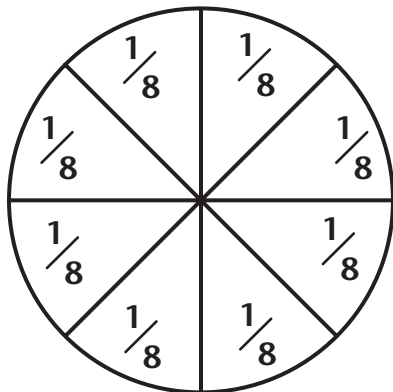
Do you remember what is the numerator?

Good for you! It is the top number of the fraction that represents the part or parts of the whole set or group.

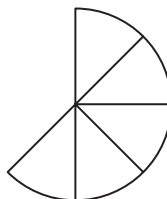
3 = Numerator (*part of the whole*)

8 = Denominator (*total number in the group or set*)

Look at the diagram of this pie.



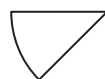
John ate $\frac{5}{8}$ of the pie.



Mike ate $\frac{2}{8}$ of the pie.



Alan ate $\frac{1}{8}$ of the pie.



Who ate the largest amount of the pie?

John ate 5 of the 8 equal pieces.

Mike ate 2 of the 8 equal pieces.

Alan ate 1 of the 8 equal pieces.

So John ate more than Mike or Alan.

Which is greater $\frac{5}{8}$ or $\frac{2}{8}$? ($\frac{5}{8}$ is greater than $\frac{2}{8}$)

Do you remember the mathematics sign for greater than?

(>)

How do you think you would write that sum? $(\frac{5}{8} > \frac{2}{8})$

How would you write the sum to show that Mike ate more than Alan? $(\frac{2}{8} > \frac{1}{8})$

Who ate the least amount of pie? (Alan)

Which is less $\frac{5}{8}$ or $\frac{1}{8}$?

What is the mathematics sign for less than? (<)

Write the sum that shows that Alan ate less than Mike.

$$(\frac{1}{8} < \frac{2}{8})$$

John's share was greater than both Mike's and Alan's share.

Can you write that sum for me?

$$\frac{5}{8} > \frac{2}{8} > \frac{1}{8}$$

On a sheet of paper or on the chalkboard draw a large rectangle to represent a chocolate bar.

Divide the rectangle into 5 equal parts. Name three of the parts, *Susan* and the other two parts *Jane*.

Ask your child to answer these questions and to write down the fraction that each girl ate.

How much of the bar did Susan eat? (3)

How much of the bar did Jane eat? (2)

Which is greater, two fifths or three fifths? $(\frac{3}{5})$

Write the pair of fractions and show which fraction is the greater.

$$\frac{3}{5} > \frac{2}{5}$$

Who ate the least amount of the bar? (*Jane*)

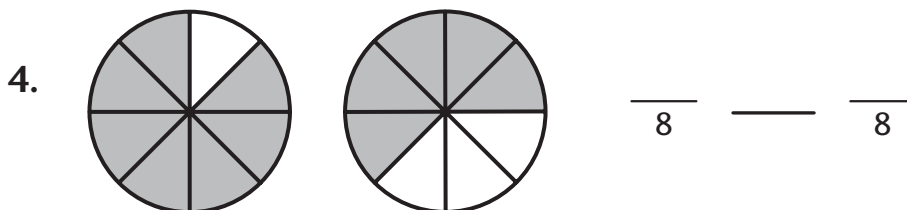
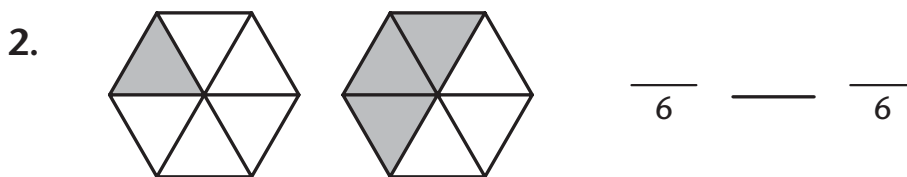
Write the pair of fractions to show which fraction is the least.

$$\frac{2}{5} < \frac{3}{5}$$

Explain to your child that whenever he or she writes a pair of fractions using the greater than sign ($>$) he or she can always write the same pair of fractions using the less than sign ($<$).

For example: $8 > 6$ and $6 < 8$

To ensure that your child understands this concept, show him or her the following diagrams. Ask your child to write a fraction for the shaded parts of each figure. Now ask him or her to use the $<$ and $>$ signs to show which of the shaded part is greater than or less than.



When your child has completed this activity, correct his or her work.

Give your child as much practice as he or she needs comparing fractions.



It's Your Turn

Have your child look at the Lesson 4 Practice Sheet. To make sure your child understands the activity directions help him or her to complete the first question. Now ask your child to complete the rest of the section independently.

When your child has completed this section, correct his or her work. Help your child to complete any needed corrections.



Challenge Yourself

Have your child complete this section on the Lesson 4 Practice Sheet. When your child has completed this section, correct his or her work. Help your child to complete any corrections.

Lesson 5 Review



What You Need

- Practice sheets

There will not be any **Warm-Up** or **Challenge Yourself** activities in this lesson.

Today your child will complete a review of the concepts and skills covered so far.



Before your child begins this lesson's review, ask him or her to go to the following Web site.

<http://www.gamequarium.com/fractions.html>

At this site your child can play the following games:

Fraction Mystery

Fraction Frenzy

Equivalent Fractions

Fraction Match-Up

If this site does not open, you can find other games your child can play from the Internet addresses in the **Web Sites** section.

Before your child attempts to complete the activities, review any concepts and/or skills he or she still has difficulty understanding. Do not give your child this review paper unless you are confident he or she can complete it successfully.



It's Your Turn

This review may take more than one lesson period.

Make sure your child has a pencil, an eraser, and a quiet place to work. Take out the Lesson 5 Practice Sheet and place it in front of your child. Explain to him or her that this review is to be completed independently. Encourage your child to take a few moments to look over the questions. Ask your child if he or she understands what is expected. Give your child as much time as he or she needs to complete the review.

If you see your child having difficulty answering a question, tell him or her to leave that question and move on to the next one. When your child has completed all of the questions, encourage him or her to look over the work to look for any errors that may have been made. Correct the review paper with your child.

As you correct your child's work, you will see which concepts or skills he or she has difficulty mastering and that need more practice. Make sure your child reviews these skills and concepts before beginning the next series of Common Fractions and Decimals lessons.

Lesson 6 Introducing Decimals



What You Need

- Practice sheets
- Blank paper or chalkboard



Warm-Up

Take out the Lesson 6 Practice Sheet and ask your child to complete the Warm-Up activity. When he or she is finished, correct the work with your child.



Exploring the Topic

In this lesson your child will learn about decimal fractions. The term **decimal fraction** means part of a whole number when that whole number is 10, 100, 1000 (multiples of 10) and so on.

Parent Script:

Do you know what a decimal fraction is?

A decimal fraction is part of a whole part of a whole number just like a fraction is. A decimal fraction is another way of writing a common fraction when the denominator (*the bottom number*) in a fraction is a multiple of 10. The multiples of ten you will be working with are **tenths** and **hundredths**. Later on you will work in thousandths.

When you use money you are working with decimals and I am sure you are familiar with a decimal point. (*Show your child this example.*)

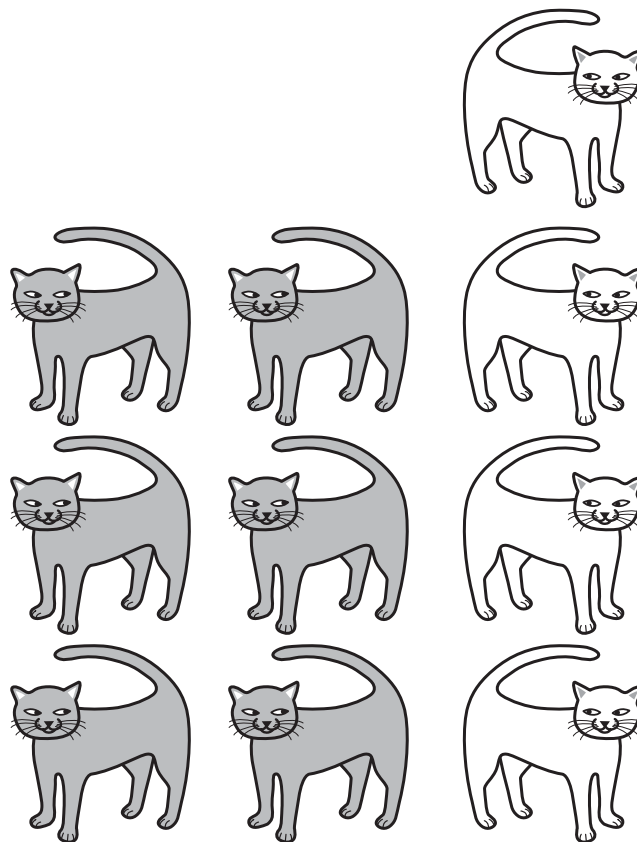
For example: \$7.63

The decimal point separates whole objects, from parts of whole objects. Whole dollars (*7 dollars*) are separated from tenths of a dollar (*6 dimes*) and hundreds of a dollar (*3 pennies*).

6 dimes are $\frac{6}{10}$ of a dollar and is written 0.6

How do you think $\frac{8}{10}$ of a dollar would be written? (0.8)
 What do you think the zero before the decimal point means?
 (The 0 means there are no whole numbers or it can be used as a place holder.)

Direct your child's attention to the following illustration.



Ask your child the following questions.

- How many cats are there in this illustration? (10)
- How many of the 10 cats are black? (6)
- What is the fraction of cats out of ten that are black? $\left(\frac{6}{10}\right)$
- If you were to write that fraction in the decimal form, how would you write it? (0.6)
- So 0.6 is the decimal form and $\frac{6}{10}$ is the fraction form.

Have your child to look at the white cats and ask the following questions.

- How many of the cats are white? (4)
- What is the fraction of cats out of ten that are white? $\left(\frac{4}{10}\right)$
- How would you write that fraction in the decimal form? (0.4)
- What does the zero (0) mean? (It means there are no whole numbers.)

It is important to remember that the decimal point follows the ones' place. If you have a number in front of the decimal, it would tell you that you how many whole objects you have, and the number after the decimal would tell you how many parts of the whole object you have.

For example, 1.4 would tell you that there was one whole object and 4 parts of the whole object.

On the chalkboard or on a sheet of paper, draw a rectangle and divide it into 10 equal parts. Colour in 4 of the parts.

Parent Script:

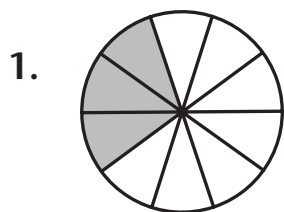
How many equal parts are there in this rectangle? (10)

How many parts have I coloured in? (4)

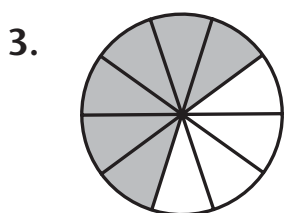
What fraction of the rectangle is coloured? $\left(\frac{4}{10}\right)$

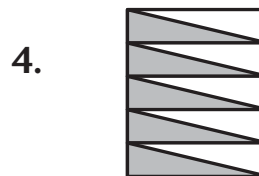
How would you write this fraction in the decimal form? (0.4)

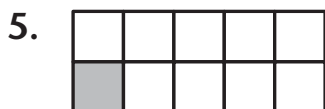
Ask your child to look at the following diagrams.

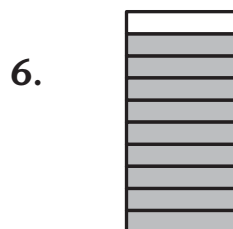












Ask him or her to write a fraction and a decimal for each of the shaded parts. When your child has completed this activity, correct his or her work.

Give your child as much practice as he or she needs recognizing and writing decimal fractions.

**It's Your Turn**

Have your child look at the Lesson 6 Practice Sheet. To make sure your child understands the activity directions help him or her to complete the first question. Now ask your child to complete the rest of the section independently.

When your child has completed this section, correct his or her work. Help your child to complete any needed corrections.

**Challenge Yourself**

Have your child complete this section on the Lesson 6 Practice Sheet. When your child has completed this section, correct his or her work. Help your child to complete any corrections.

Lesson 7

More About Decimals



What You Need

- Practice sheets
- Teaching Aids
 - Sheet of graph paper
 - Base 10 blocks (optional)



Warm-Up

Ask your child to take out the Lesson 7 Practice Sheet and complete the Warm-Up activity. Read the directions with your child to ensure he or she understands what is required to complete this work.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the back of this book.



Exploring the Topic

This lesson explores decimals in more depth, focusing on hundredths and thousandths.

Parent Script:

Remember that a decimal fraction is another way of writing a common fraction when the denominator—the bottom number in a fraction—is a multiple of 10. Today you will be working with hundredths and thousandths.

Look at these decimal fractions:

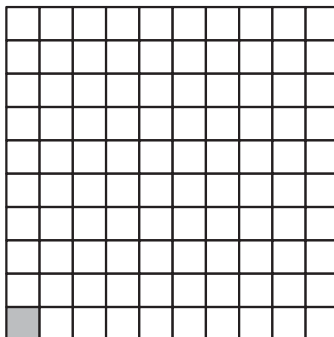
0.6 0.12 0.059

Written as common fractions they would read:

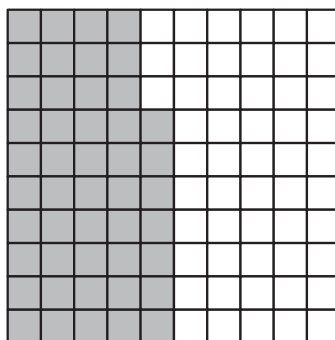
$$\frac{6}{10} \quad \frac{12}{100} \quad \frac{59}{1000}$$

The decimal point stands for **and part of 10**, or **100**, or **1000** and so on.

Ask your child to look at each diagram as you explain what decimal is shown.



In this diagram one hundredth of the whole $\frac{1}{100}$ is written as **0.01**.

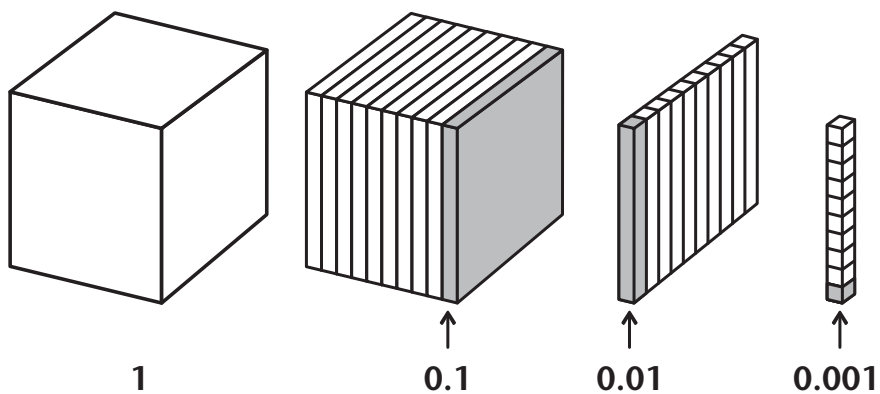


In this diagram 47 hundredths $\frac{47}{100}$ are written as **0.47**.

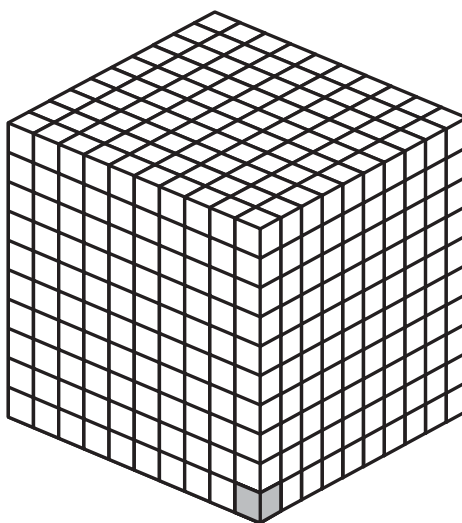
Understanding $\frac{1}{1000}$ is a more difficult concept, so have your child follow carefully as you look at the series of changes in the cube in the next diagram.

Parent Script:

To understand $\frac{1}{1000}$ let's look at this cube.



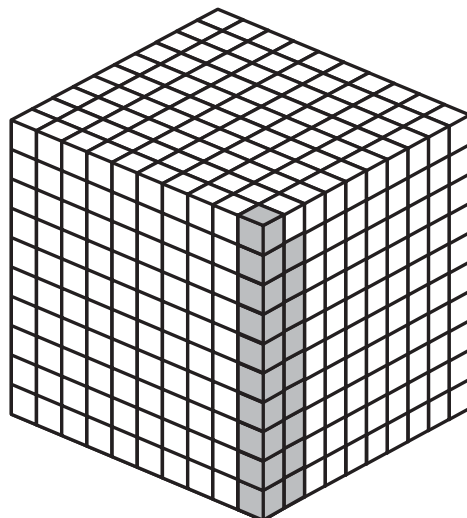
Here is what one thousandth of a whole looks like.



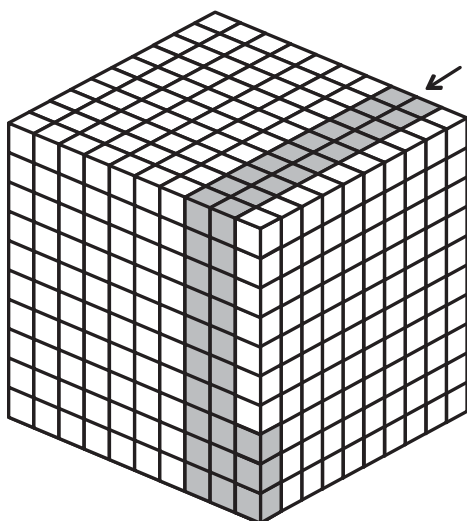
$\frac{1}{1000}$ is written as 0.001.

The next diagram shows you $\frac{19}{1000}$.

Show me how you would write it as a decimal. (*0.019*)



This last diagram shows you $\frac{23}{1000}$.

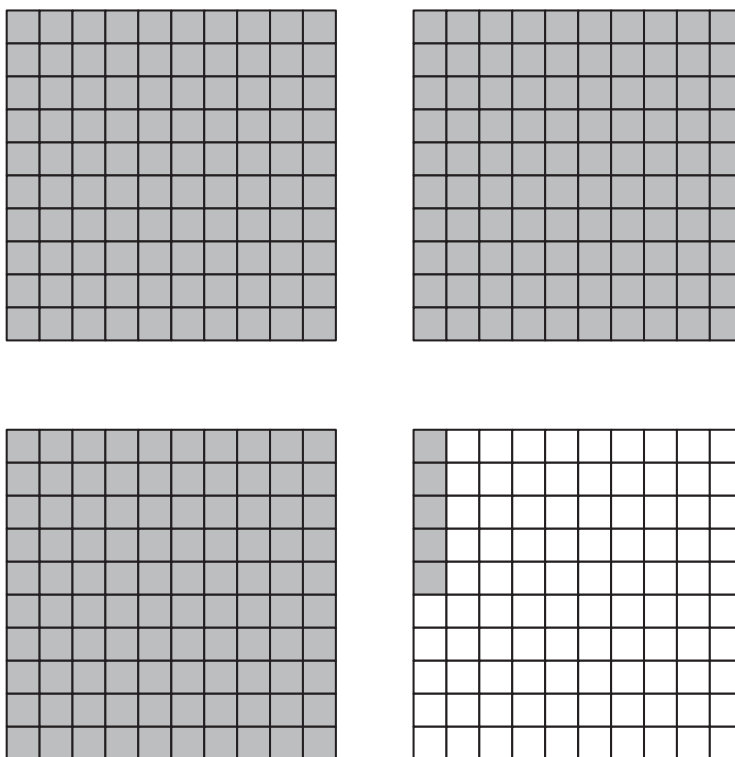


You have to use your imagination here. This shows the whole layer (with 100 little cubes in each layer) that has been darkened.

The decimal fraction is written as 0.203

You have learned:

- **tenths**—The number of parts is written on the *first* place to the right of the decimal point.
- **hundredths**—The number of parts is written on the *second* place to the right of the decimal point.
- **thousandths**—The number of parts is written on the third place to the right of the decimal point.
- **whole numbers**—Complete items that are not broken up into parts are recorded on the *left* side of the decimal point.



In the diagram above there are 3 whole **and** 5 hundredths of a whole which have been darkened.

You write it as: **3.05**

If you wrote 3.50, it would show that 3 whole and 50 hundredths had been darkened.

We'll finish this lesson by reviewing place value.

In this chart you can see whole numbers to the left of the decimal point and decimal parts to the right side.

whole numbers	•	decimal parts
hundreds tens ones	•	tenths hundredths thousandths

To check your child's understanding of decimal fractions, ask him or her to move to on the independent activities.



It's Your Turn

Have your child look at this section on the Lesson 7 Practice Sheet. Make sure he or she understands the activity directions before beginning. Ask your child to work independently on the activities in the section.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections. If your child's work shows a weak understanding of decimals to thousandths, use the base 10 blocks to review.



Challenge Yourself

There is no **Challenge Yourself** activity for this lesson. You and your child may enjoy looking at some of the decimal Web sites.

Lesson 8

Making Equivalent Decimals



What You Need

- Practice sheets



Warm-Up

Ask your child to take out the Lesson 8 Practice Sheet and complete the Warm-Up activity. Read the directions with your child to ensure he or she understands what is required to complete the activity.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the back of this book.



Exploring the Topic

Today your child will examine how different decimal fractions can represent the same amount, in other words, how decimal fractions can be equivalent.

Parent Script:

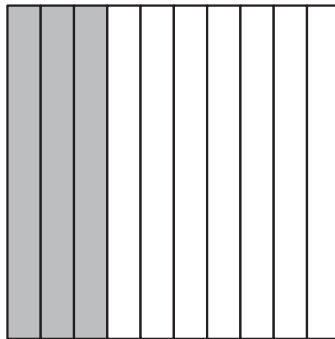
Let's quickly review.

You know a decimal fraction is a part of a whole that is broken up into groups of 10, 100, 1000, and so on.

The first place after the decimal point means tenths, the second place means hundredths, and the third place means thousandths.

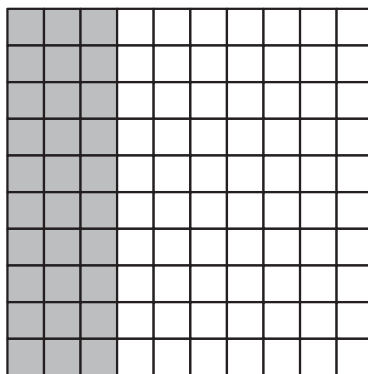
You also know that zero is used as a place holder to indicate how the number is read.

The following illustrations will help you picture equivalent decimal fractions.



In this diagram the square is divided up into **tenths**. Three of the tenths are darkened. In other words, **0.3** of the whole diagram is darkened.

In this next diagram the *same size* square is divided up into hundredths. Thirty of the hundredths or 0.30 of the whole diagram are darkened.

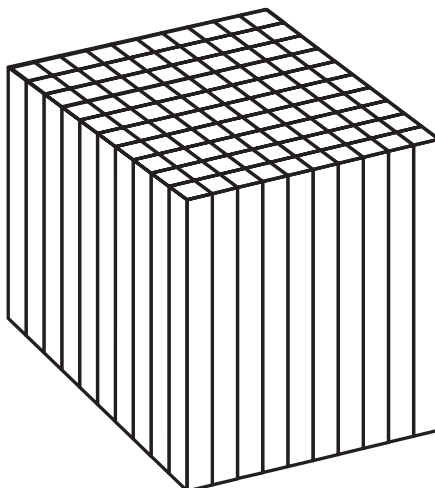


You can see from the two diagrams that the squares are *the same size*. Therefore **0.3** and **0.30** must show the same part of the whole.

This means they have *equivalent value*.

The zero at the end is written as a place holder in 0.30 to show that the whole is divided into hundredths.

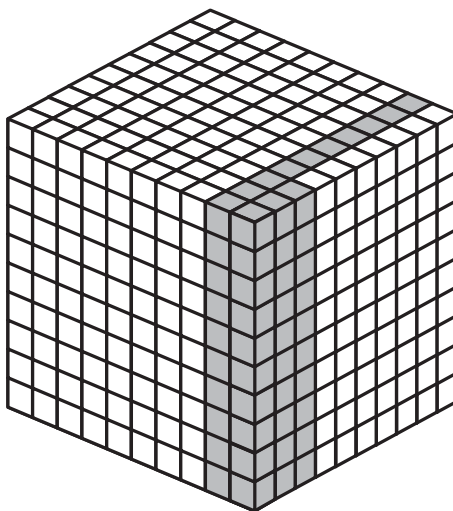
Now let's look at the following cube diagrams. The cubes are divided into hundredths and thousandths and you can see that the decimal fractions have equivalent value.



This diagram shows one whole divided into hundredths. That's 10 rods in each layer \times 10 layers = 100.

Thirteen of these hundredths or **0.13** of the diagram is darkened.

Now look at the second diagram. It shows the same cube divided into thousandths. That's 10 layers \times 10 rods in each layer \times 10 little cubes in each rod.



One hundred thirty of these thousands or 0.130 are darkened. You can see that 0.13 and 0.130 equal the same amount and are equivalent.

You can see how the final number in the decimal fractions shows how many equal pieces the whole is divided into—tenths, hundredths, or thousandths.



It's Your Turn

Have your child look at this section on the Lesson 8 Practice Sheet. To make sure your child understands the activity directions, help him or her to get started. Work with your child on one or two questions in each part. Now ask your child to complete the rest of the section independently.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections. This topic will be addressed again in Lesson 10.



Challenge Yourself

Ask your child to finish the lesson by completing this activity. You will find the answers in the Answer Key.

Lesson 9

Fractions and Decimals Greater Than 1



What You Need

- Practice sheets
- Teaching Aids
 - two bananas
- *Common Fractions and Decimals Concentration* game
- Blank paper or chalkboard



Warm-Up

Take out the Lesson 9 Practice Sheet and ask your child to complete the Warm-Up activity. When he or she is finished, correct the work with your child.



Exploring the Topic

Today's lesson is divided into two parts. Your child will complete the activities and the Practice sheet section for **Part A** before moving on to **Part B**.

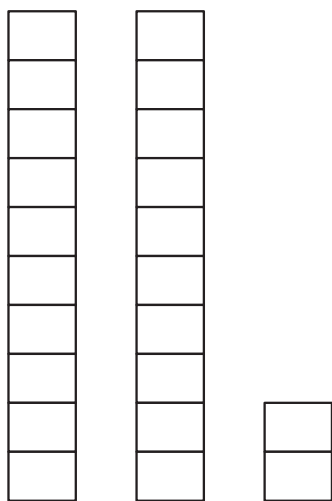
You may need to take more than one time period to complete all the activities in this lesson.

Part A

Parent Script:

I hope you are full of energy today as we have a lot of work to cover.

Look at the diagram below.



Each column of an oil-drilling platform needs 10 gigantic bricks to build each one.

How many columns are completed? (*2—All 10 bricks are stacked*)

How many parts of 10 bricks are stacked on the third column? (*2*)

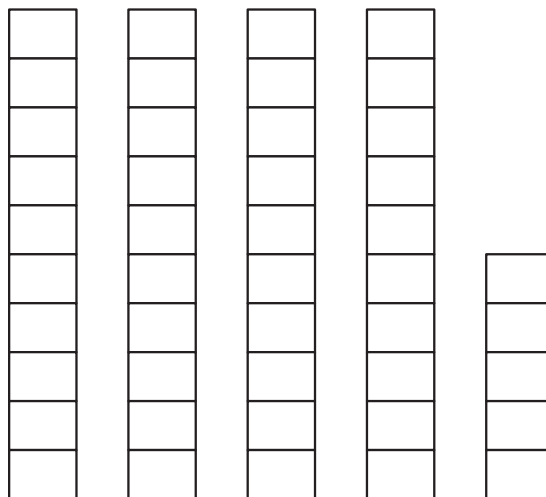
So what do we have? (*2 complete columns and two parts*)

How would I write that information as a fraction? (*2 and $\frac{2}{10}$*)

If I were to write that fraction as a decimal, what would I write instead of the word “and”? (*I would write a decimal point (.)*)

So, I would write 2.2 or $2\frac{2}{10}$.

Direct your child’s attention to the following diagram.



Ask your child the following questions. As your child answers your questions, write the answers on the chalkboard or on a sheet of paper.

How many columns are there? (5)

Are all the columns complete? (No)

How many columns are complete? (4)

How much of the fifth column is complete? (5 tenths)

So what would you say? (There are 4 whole and 5 tenths of the column completed.)

What will you write instead of the word " and " ?

Good! You will write a decimal point.

What is the common fraction you would write? ($4\frac{5}{10}$).

What decimal fraction would you write? (4.5)

Give your child as much practice as he or she needs writing common fractions and decimal fractions using whole numbers as she or he needs.

For example, draw 6 whole columns and 7 tenths.

Ask your child to complete the activities for **Part A** in the Lesson 9 Practice Sheet.

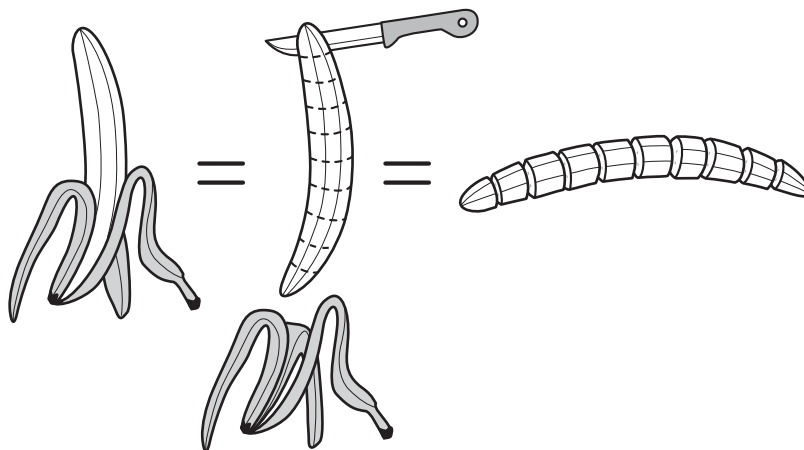
When your child has completed **Part A**, correct his or her work. Help your child to complete any needed corrections.

Then return to **Part B** of this lesson.

Part B

Counting by Tenths

If possible, take out 2 bananas for your child to use as you demonstrate counting by tenths. If this is not possible, use the illustration below to demonstrate counting by tenths.



Parent Script:

Suppose we cut a banana into 10 equal pieces.

We could count them by tenths – one tenth, two tenths, and so one until we got to ten tenths.

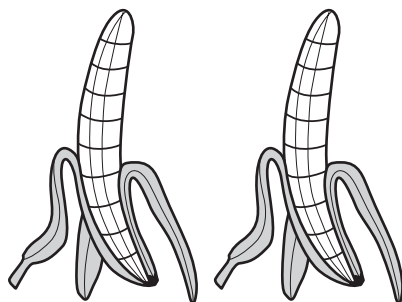
When we count by tenths, **we write:**

$$\frac{1}{10} \quad \frac{2}{10} \quad \frac{3}{10} \quad \frac{4}{10} \quad \frac{5}{10} \quad \frac{6}{10} \quad \frac{7}{10} \quad \frac{8}{10} \quad \frac{9}{10} \quad \frac{10}{10}$$

What is $10/10$ equal to? (*1 whole banana*)

Could we count these pieces by tenths? (*Yes*)

Now—what if we have 2 bananas divided into tenths?



How many tenths would we have? (*20 tenths*)

If we counted out $\frac{11}{10}$ of a banana, what would we have?

Good! We would have 1 whole banana and $\frac{1}{10}$ of another banana.

Ask your child to count out $\frac{13}{10}$ of a banana and tell you

what he or she would have. (1 whole banana and $\frac{3}{10}$ of another banana)

So $\frac{13}{10}$ is the same as saying $\frac{10}{10} + \frac{3}{10} = \frac{13}{10}$

or

$$\frac{13}{10} = 1 + \frac{3}{10}$$

How would you write that as decimal fraction? (*1.3*)

Now ask your child to try the following examples. Ask your child to write the answers as common fractions and then in decimal form.

$$\frac{16}{10} =$$

$$\frac{17}{10} =$$

$$\frac{19}{10} =$$

Give your child as much help as he or she needs. If necessary, have him or her use the banana pieces to find the answers.

Parent Script:

How do you think we would count from 0.8 to 1.3?

What fraction is 0.8? ($\frac{8}{10}$)

What comes after eight tenths? (*nine tenths*)

What comes after nine tenths? (*ten tenths*)

What is ten tenths the same as? (1 whole)

So, what would the next number be? ($\frac{11}{10}$ or 1.1)

It's just like counting by tens and ones isn't it?

Can you tell me how many ones in $\frac{23}{10}$?

Great! You have 2 ones (2 whole parts) and 3 tenths left over.

How would you write that number as a fraction? ($2\frac{3}{10}$)

How would you write it in decimal form? (2.3)

Give your child as much practice as he or she needs counting decimals.

For example, ask your child to count from 1.9 to 2.5.

When your child feels confident to count in decimals, ask him or her to complete **Part B** in the Lesson 9 Practice Sheet. When your child has completed this section, correct his or her work. Help your child to complete any needed corrections.



Challenge Yourself

There is no assigned **Challenge Yourself** activity in this lesson. You could use this time to play *Common Fractions and Decimals Concentration*. You will find the directions for this game in the **Games** section.

Lesson 10

Comparing Decimal Fractions Using Place Value



What You Need

- Practice sheets
- Teaching Aids
Place value chart



Warm-Up

Ask your child to take out the Lesson 10 Practice Sheet and complete the Warm-Up activity. Today's activity is a review of place value in whole numbers. Read the directions with your child to ensure he or she understands what is required to complete the activity.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the back of this book.



Exploring the Topic

Your child needs a good knowledge of place value concepts. In Lesson 9, your child used base 10 block pictures to compare two numbers. Today, she or he will learn to use a place value chart as another tool to compare numbers.

Parent Script:

Let's look at these two decimal fractions: 2.1 and 1.7.

Which one is the greater?

Why? (*Your child should be able to tell you that 2 is a whole number and is greater than 1.*)

Direct your child's attention to the illustration that follows.

**Parent Script:**

Bob jogged 2.9 km (kilometers) while Elsa jogged 3.3 km. Who jogged the greatest distance?

As your child looks at the number line he or she should see which is the greater distance.

Ask your child the following questions to ensure he or she knows why 3.3 km is the greater distance.

- When you are comparing fractions, what do you compare first? (the whole numbers)
- Good! You compare the digits with the greatest value?

If your child has difficulty understanding this concept, explain that in decimals the digit that comes **before** the decimal point is always a **whole number** and the digits that follow the number can either be tenths, hundredths or thousandths depending on their order after the decimal point.

Parent Script:

A place value chart is a handy tool to use when you are working with equivalent numbers. This is what it would look like if we placed 24.57 on the place chart below

Tens	Ones	Tenths	Hundredths
2	4	5	7
↓	↓	↓	↓
value	value	value	value
20	+	4	+
		0.5	+
			0.07
		OR	
20	+	4	+
		$\frac{5}{10}$	+
			$\frac{7}{100}$
24.57			

Let's see what 6.09 looks like on a place value chart.

Tens	Ones	Tenths	Hundredths
-	6	0	9
↓	↓	↓	↓
value	value	value	value
0	6	+	0.0
			+
			0.09
		OR	
	6	+	$\frac{0}{10}$
			+
			$\frac{9}{100}$
6.09			

Now we are going to find which is greater—1.6 or 1.60. To do this we will place each number on the place value chart.

Place 1.6 on this chart

Tens	Ones	Tenths	Hundredths
	1	.	6
	↓		↓
	value		value
	1	+	.6
			1.6

Place 1.60 on this chart.

Tens	Ones	Tenths	Hundredths	
	1	.	6	0
	↓		↓	↓
	value		value	value
	1	+	.6	+ 0
				1.60

(Your child should be able to see that on the place value chart both numbers look exactly the same.)

Well done. Remember, zero or zeros on the end of the decimal do not increase value. They just rename a decimal. Look at these examples:

$$\begin{array}{ccc}
 0.4 & \rightarrow & 0.40 \\
 4 \text{ tenths} & & 40 \text{ hundredths} \\
 0.4 = 0.40
 \end{array}$$

7.8 is seven and eight tenths.

7.80 is seven and eighty hundredths.

$$7.8 = 7.80$$

Now your child has been introduced to tools he or she can use to compare numbers, teach him or her the rules that follow. Allow your child to use the tools until such time as he or she can remember and follow the rules.

The Rule for Comparing Numbers by Place Value

By using this rule you can compare numbers up to the thousandths' place or even higher. The following question will help you to review the steps.

Compare these two numbers.

61.090 61.009

Look at the number on the left first (the greatest place value) and then compare the remaining numbers. This is just the same as comparing whole numbers.

The numbers on the left are the same.

61.090 61.009

Look at the next place to the right of the first number and compare.

Again the numbers are the same.

61.090 61.009

Look to the next place to the right and compare.

Once more the numbers are the same.

61.090 61.009

Look to the next place to the right and compare.

The numbers are different. 9 hundredths are more than 0 hundredths. Therefore:

$$61.090 > 61.009$$

To sum up: **The first digits compared from the left to the right that are found to be different tell which number, as a whole, has the greater or lesser value.**

Help your child follow the rules to compare each pair of these decimals. Ask him or her to use $>$ and $<$ or $=$. If your child has difficulty following the rule, allow him or her to use the *place value chart* Teaching Aid to find the answers.

- | | | | | | |
|----|------|------|----|------|-------|
| a. | 1.70 | 1.71 | b. | 9.8 | 9.08 |
| c. | 6.6 | 6.60 | d. | 0.8 | 0.80 |
| e. | 6.50 | 6.45 | f. | 0.22 | 0.220 |

(Answers: a. $<$, b. $>$, c. $=$, d. $=$, e. $>$, f. $=$)

Make sure your child understands how to compare decimals before he or she begins the independent activities. If necessary, provide more guided practice using questions such as those above.



It's Your Turn

Have your child look at this section on the Lesson 10 Practice Sheet. Read each set of directions with your child to make sure he or she understands what to do in each activity. Ask your child to complete the section independently.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections.



Challenge Yourself

Ask your child to finish the lesson by completing this activity. Your child may wish to use the *place value chart* from the Teaching Aids section.

Lesson 11

Ordering Decimals



What You Need

- Practice sheets
- Blank paper or chalkboard



Warm-Up

Take out the Lesson 11 Practice Sheet and ask your child to complete the Warm-Up activity. When he or she is finished, correct the work with your child.

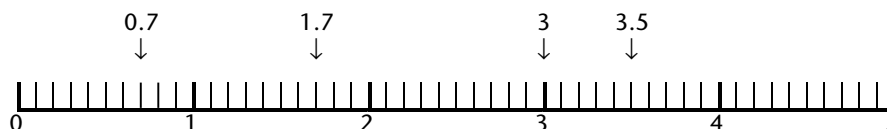


Exploring the Topic

Parent Script:

In the last lesson we compared decimals. In this lesson you will put the decimals in order. You will order them from the greatest to the least, and from the least to the greatest.

Look at this number line.



The numbers at the bottom of the line are whole numbers.

The numbers at the top are parts of the whole or tenths.

What is the first number that you see? (*0.7*)

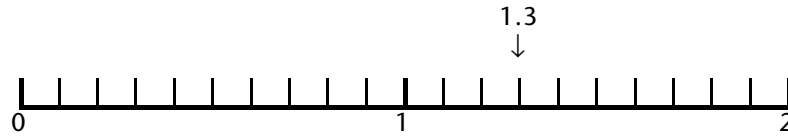
What is the last number you see along the number line?
(*3.5*)

Is there any number that is greater than 3.5? (*No*)

If you were to order the numbers from the greatest to the least what number would you write first? (*3.5*)

Now tell me the rest of the numbers from greatest to least.
(*3.5, 3, 1.7, 0.7*)

Direct your child's attention to this number line.



Discuss the placement of the decimal 1.3.

Ask your child to place each of the following decimals on the number line.

0.5, 1.9, 0.4, 1.6

Ask your child to order the decimals from the least to the greatest.

Now direct your child's attention to this number line. Ask him or her to place the following decimals on the number line.



4.1, 0.8, 2.7, 4.6, 1.5, 3.8, and 3.0

When your child has completed the activity, ask him or her to order each decimal from the greatest to the least. Correct your child's work.

Give your child as much practice placing and ordering decimals on a number line as she or her needs.



It's Your Turn

Have your child look at the Lesson 11 Practice Sheet to make sure your child has a complete understanding of ordering decimals before you ask him or her to complete this section independently.

When your child has completed the exercises, correct his or her work. Help your child to complete any needed corrections.



Challenge Yourself

Have your child complete this section on the Lesson 11 Practice Sheet. When your child has completed this section, correct his or her work. Help your child to complete any corrections.

Lesson 12

Rounding Decimals to the Nearest Tenth and Nearest One



What You Need

- Practice sheets
 - Teaching Aids
- Page of blank number lines



Warm-Up

Ask your child to take out the Lesson 12 Practice Sheet and complete the Warm-Up activity. Read the directions with your child to ensure he or she understands what is required to complete the activity.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the back of this book.



Exploring the Topic

Your child knows how to round off whole numbers. Today you will show him or her how to use the same techniques to practise rounding off decimal fractions.

Parent Script:

You have done lots of rounding with whole numbers, and rounding for decimals is the same.

Let's review the rules for rounding.

Rules for Rounding

Numbers from 0 to 4 round down to 0.

Numbers from 5 to 9 round up to 10.

Numbers from 0 to 49 round down to 0.

Numbers from 50 to 99 round up to 100.

We'll begin by solving this problem using rounding. Read the problem to me.

The Jackson's car could go from 0 to 90 km/h in 7.37 seconds. How long is 7.37 seconds rounded to the nearest tenth of a second?

7.37 → ___ ?

Think: Is $7\frac{37}{100}$ closer to $7\frac{40}{100}$ or $7\frac{4}{100}$?
OR
 $7\frac{30}{100}$ or $7\frac{3}{100}$?

It's closer to $7\frac{40}{100}$, so 37 rounds up to 40. Your answer becomes 7.40 or 7.4.

Read this problem to me.

Bernie's car could go from 0 to 90 km/h in 6.93 seconds. How long is 6.93 seconds rounded to the nearest tenth?

6.93 → ___ ?

Think: Is **6.93** closer to $6\frac{100}{100}$ (7) or $6\frac{10}{10}$?
OR
 $6\frac{90}{100}$ or $6\frac{9}{10}$?

Remember 3 rounds down to zero

Round 6.93 down to 6.90 seconds.

In rounding from hundredths to tenths use the first set of rounding rules. Even though you might try to round the 93 seconds **up** to 100, it is only the 3 that is being rounded **down** to 0.

You can use a number line to help you picture rounding decimal fractions. Here's another problem to solve.

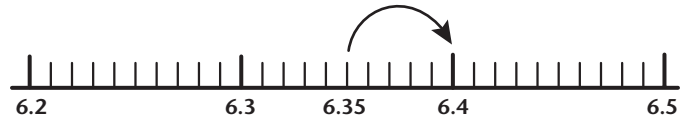
Casey Ann jumped 6.35 m in the long jump competition at a track meet. What was her jump rounded to the nearest tenth?

Think: the tenths' place is 3. 6.35
↑

You look to the **right** and **think:** 6.35
5 is always rounded up. ↻

You **round** the tenths' place up to 4. 6.4
↑

This number line can help you see the problem.



You can see that 6.35 is exactly halfway between 6.3 and 6.4. You must remember the rounding rule that says that 5 is always rounded up.

Often you are asked to round off decimal number to the nearest one (a whole number).

If a building is 646.6 m in height what would it be if you rounded it to the nearest one?

Think: the ones' place is 6. 646.6
↑

You look to the **right** and **think:** 6 is greater than 5. 646.6
↻

You **round** the ones' place up to 7. 647
↑

Look at this number line to help you picture rounding decimal numbers to the nearest one.



You can see that 646.6 is closer to 647 than to 646.

In the problem about Bernie's car, if you had been asked to round 6.93 to the nearest whole second then you need to look at the 93.

6.93 rounded to the nearest second (one) = 7 seconds

Knowing where decimal numbers fit in with whole numbers is important.

6.93 is between 6 and 7.

Now it's your turn.

Encourage your child to work independently. If he or she has any difficulty, allow him or her to use the number lines. You will find a sheet of number lines in the Teaching Aids. Write in the appropriate numbers for your child.



It's Your Turn

Have your child look at this section on the Lesson 12 Practice Sheet. Make sure your child understands the activity directions by reading each set with him or her. Now ask your child to complete the rest of the section independently.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections.



Challenge Yourself

There is no **Challenge Yourself** activity in this lesson.

Lesson 13

Rounding to the Nearest Whole Number and Estimating Sums and Differences With Decimals



What You Need

- Practice sheets



Warm-Up

Ask your child to take out the Lesson 13 Practice Sheet and complete the Warm-Up activity. Read the directions with your child to ensure he or she understands what is required to complete the activity.

When your child has completed the activity, correct it with him or her.



Exploring the Topic

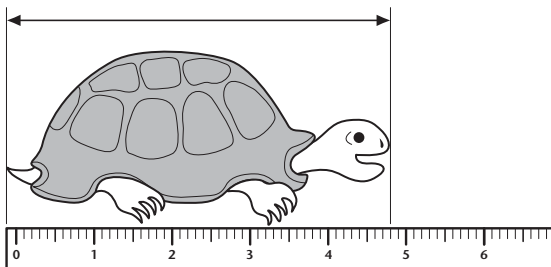
This lesson will be in two parts. Your child will learn to round to the nearest whole number, and then use that knowledge to estimate sums and differences. You may wish to cover this lesson over two days if your child has any difficulty with the rounding skills.

Part A

Parent Script:

We are going to work on rounding decimal numbers to the nearest whole numbers. This important skill is needed when you estimate decimal sums or differences, and when you need to estimate measurement and money.

How long is the turtle?



We write: 4.8 cm

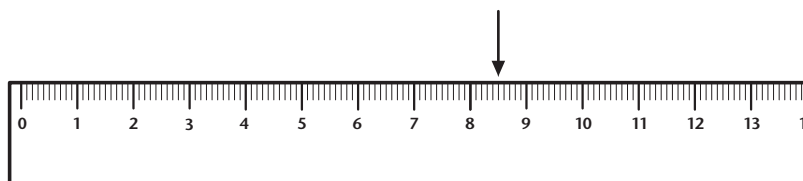
About how long is 4.8 cm if we round it to the nearest centimeter?

8 is rounded up to 10 so .8 is rounded up to 1.0

Think: So, it is closer to 5 cm. ($4 \text{ cm} + 1 \text{ cm} = 5 \text{ cm}$)

Write: 5 cm

Look at the ruler below.



centimetres

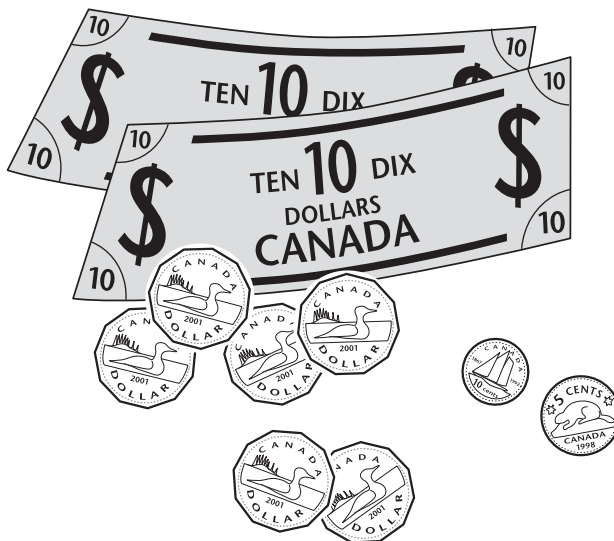
Notice the arrow on the top of the ruler.

What is the actual distance from the beginning of the ruler to the arrow? (*Answer: 8.5 cm*)

Round off the distance to the nearest centimeter. What will it be? (*Answer: 9 cm – 5 rounds up*)

Well done! Now let's look at an example of rounding dollars and cents.

Jack has saved \$26.15.



Round \$26.15 to the nearest dollar.

Think: Round .15 down to .00.

Write: \$26.00

Your turn. Round off \$2.35 to the nearest dollar.

Do you round .35 up or down? (*Answer: down*)

What do you write as an answer? (*Answer: \$2.00*)

Good work. Now try some examples on your own.

Have your child turn to the Lesson 13 Practice Sheet, **It's Your Turn**, to round measurements and money. Read the directions in **Parts A and B** with your child before he or she begins the work.

Mark your child's work. If he or she has completed the work correctly move on to Part B of this lesson. If your child needs more guided practice, work through a few more examples with him or her to make sure the concept of rounding to wholes is understood before you move on.

Part B

Estimation is a skill that is used in everyday life.

Parent Script:

In life you will have to solve many problems involving numbers. Some problems require exact answers, but many will require estimates. This part of the lesson will help you estimate when adding.

Read the following problem to me.

Mr. Anderson has one board that is 6.7 m (metres) in length and another board that is 9.2 in length.

About how many metres of wood does Mr. Anderson have?

Think: Round each measurement to the nearest metre.

Then add the two measurements.

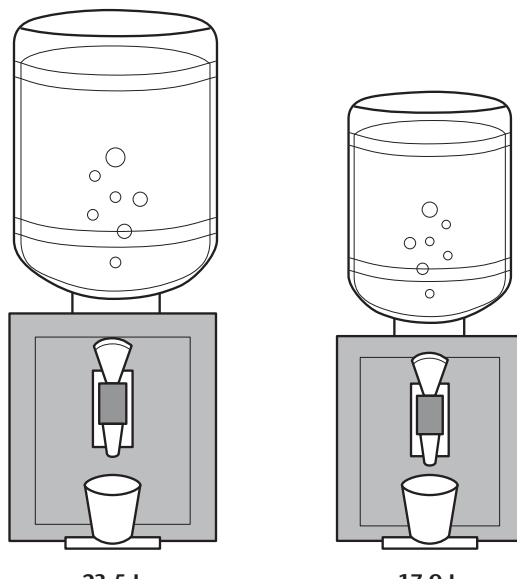
$$\begin{array}{r} 6.7\text{m} \\ +9.2\text{m} \\ \hline \end{array} \quad \rightarrow \quad \begin{array}{r} 7\text{m} \\ +9\text{m} \\ \hline 16\text{m} \end{array}$$

Write: Mr. Anderson has about 16 m of wood.

Why wouldn't Mr. Anderson estimate if he wanted to cut the wood to build a cabinet? [*Answer: He needs exact measurements if pieces are to fit together.*]

Here's a second addition problem.

About how many litres of water are in the 2 water coolers?



Think: Round each amount of water to the nearest litre.

Then add the 2 measurements.

$$\begin{array}{r} 23.5\text{L} \\ +17.9\text{L} \\ \hline \end{array} \quad \rightarrow \quad \begin{array}{r} 24\text{L} \\ +18\text{L} \\ \hline 42\text{L} \end{array}$$

Write: There is about 42 L of water in the 2 containers.

Estimating sums was quite easy. Now let's have a look at estimating differences.

Read the problem to me.

Jim picked 27.8 kg (kilograms) of apples while his younger brother picked 16.6 kg of apples. About how many more kg of apples were picked by Jim?

Think: Round each amount to the nearest kilogram. Then subtract the two amounts.

$$\begin{array}{r} 28.7\text{kg} \quad \rightarrow \quad 28\text{kg} \\ -16.6\text{kg} \quad \rightarrow \quad -17\text{kg} \\ \hline 11\text{kg} \end{array}$$

Why were both numbers rounded up? (*Answer: They were both between 5 and 9.*)

Write: Jim picked about 11 kg more apples than his brother. Now it's your turn to work on sums and differences.



It's Your Turn

Have your child turn to the Lesson 13 Practice Sheet to estimate sums and differences that have decimals. Read the directions in **Parts C and D** with your child before he or she begins the work.

Mark your child's work. If he or she has completed the work correctly move on to the **Challenge Yourself** section. If your child needs more guided practice, work through a few more examples with him or her to make sure he or she masters the skill of rounding and then adding or subtracting.



Challenge Yourself

Ask your child to finish the lesson by completing this activity. You will find the answers in the Answer Key.

Lesson 14

Adding Decimal Fractions



What You Need

- Practice sheets
 - Teaching Aids
- Calculator



Warm-Up

Ask your child to take out the Lesson 14 Practice Sheet and complete the Warm-Up activity. Read the directions and work through the first question of Part A with your child to ensure he or she understands what is required to complete the activity.

Quick recall of basic addition facts will help as your child works through this lesson. Part B of the Warm-Up offers a quick review of basic facts.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the back of this book.



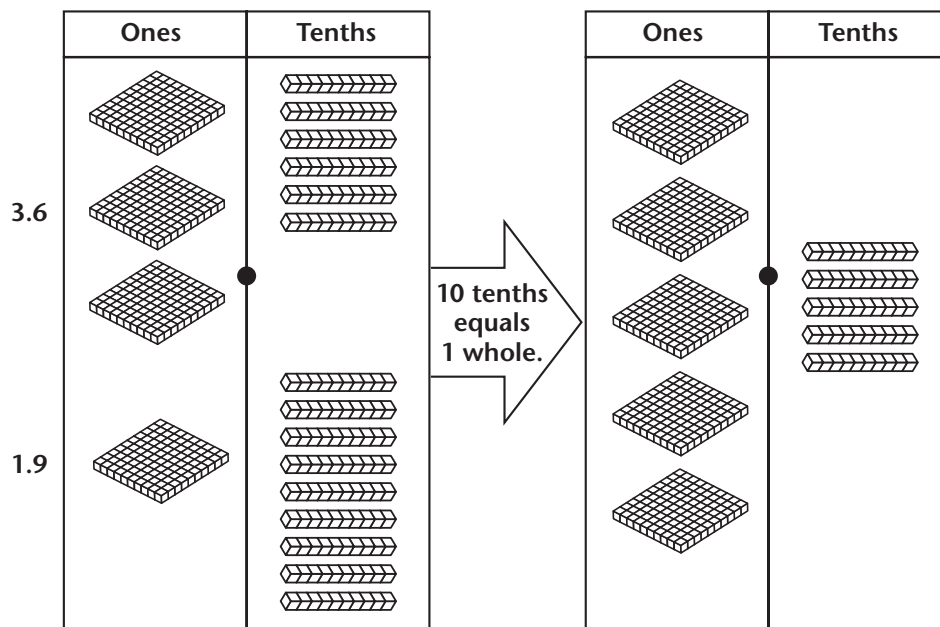
Exploring the Topic

Adding decimals to tenths should not be difficult if your child can add whole numbers. It's important to line up the ones, tens, and hundreds when adding whole numbers. It is also important when adding decimal numbers. Your child will learn to line up the decimal numbers as well as whole numbers.

Parent Script:

You know how to add whole numbers, so you can use the same strategies to add decimals.

Look at the pictures of Base 10 blocks. They show you what happens when you add $3.6 + 1.9$



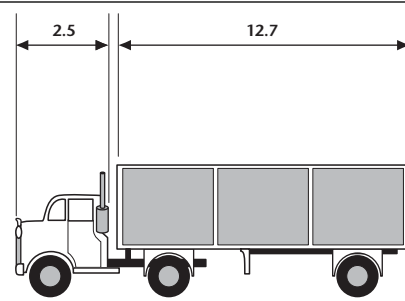
The sum of $3.6 + 1.9 = 5.5$

To add without pictures, use place value. Look at this example.

Add the tenths: 12 tenths $\begin{array}{r} 2.8 \\ + 3.4 \\ \hline \end{array}$	10 tenths equals 1 whole. That's 1 and 2 tenths. $\begin{array}{r} 1 \\ 2.8 \\ + 3.4 \\ \hline 2 \end{array}$	Add the ones: $\begin{array}{r} 1 \\ 2.8 \\ + 3.4 \\ \hline 6.2 \end{array}$
---	--	---

Let's look at an addition problem. Read the problem to me.

The length of the tractor (or cab) is 2.5 m (metres) and the length of the trailer is 12.7 m. How long is the entire tractor trailer?



Think: $12.7\text{m} + 2.5\text{m} = ?$

Write:

tens	ones	tenths
1	2^1	7
+	2	5
Answer: 1	5	2

The tenths have been regrouped into 1 ones and 2 tenths.

The tractor trailer is 15.2m long.

In the next problem you will be adding kilograms. Read the problem aloud.

Mrs. Jones bought 0.5 kg of peaches. The peaches went in a fruit salad with 1.2 kg of pears. How much fruit was in the fruit salad?

Think: $0.5\text{kg} + 1.2\text{kg} = ?$

Write:

ones	tenths
0	5
1	2
Answer: 1	7

Mrs. Jones has 1.7 kg of fruit in the salad.

Give your child a blank sheet of paper and pencil and ask him or her to copy and answer the following questions. To help your child, you can make simple charts like those above.

$$\begin{array}{r} 4.2 \\ +2.3 \\ \hline \end{array} \quad \begin{array}{r} 1.7 \\ +5.6 \\ \hline \end{array} \quad \begin{array}{r} 5.7 \\ +6.7 \\ \hline \end{array} \quad \begin{array}{r} 3.3 \\ +9.8 \\ \hline \end{array}$$

(Answers: 6.5 7.3 12.4 13.1)

If your child was able to answer the questions correctly move on to the addition of hundredths and thousandths. If your child had any problem with the questions, give him or her more examples like those above. Help your child work through each example until he or she has mastered the skill. Then move on.

Parent Script:

You know that decimal fractions must be lined up correctly before you can add. Study the following problem.

Jake was training for the city cross-country run. He ran 6.1 km on Friday, 5 km on Saturday, 5.2 km on Sunday and 6 km on Monday. How many kilometers did Jake run altogether during those 4 days?

Let's review what we already know about adding decimals.

To add decimal numbers you must follow two simple steps:

- Align (line up) the decimal points (zeros can be used as place holders), which will line up the place values
- Add the decimal numbers exactly as you would add whole numbers.

To answer this problem, you would write the decimal numbers vertically and then add. It looks like this:

$$\begin{array}{r} 6.1 \\ 5.0 \\ 5.2 \\ \underline{6.0} \\ 22.3 \end{array}$$

You can also add decimal sums without place holder zeros as long as you line up the decimal points correctly. Read the following problem aloud and then look at the solution.

Mr. Beaumont mailed three parcels at the post office. The first parcel weighed 0.823 kg, the second 1.3 kg, and the third 0.68 kg. What was the total weight of Mr. Beaumont's three parcels?

You line up the decimal points:

$$\begin{array}{r} .823 \\ 1.3 \\ \underline{.68} \end{array}$$

Then you add using regrouping as you would with whole numbers.

$$\begin{array}{r} 1\ 1 \\ .823 \\ 1.3 \\ \underline{.68} \\ 2.803 \end{array}$$

Now you're ready to work on your own.



It's Your Turn

Have your child look at this section on the Lesson 14 Practice Sheet. To help your child get started, read each set of directions with him or her. You can also help your child complete the first question in each activity. Now ask your child to complete the rest of the section independently.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections.



Challenge Yourself

Ask your child to finish the lesson by completing this activity. During this activity your child will learn how to record decimals on a calculator. You will find the answers in the Answer Key.

Lesson 15

Subtracting Decimal Fractions



What You Need

- Practice sheets
 - Teaching Aids
- Calculator



Warm-Up

Ask your child to take out the Lesson 15 Practice Sheet and complete the Warm-Up activity. Read the directions with your child to ensure he or she understands what is required to complete the activity.

Quick recall of basic subtraction facts will help as your child works through this lesson. Part A of the Warm-Up offers a quick review of basic facts.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key.



Exploring the Topic

Remind your child that decimal fractions stand for a tenth, a hundredth, or a thousandth of a whole number, but when they are added or subtracted, your child follows the same steps as with whole numbers. He or she will again need to review the importance of correctly aligning decimal numbers as in the previous addition lesson.

Parent Script:

In today's lesson you will be given the opportunity to complete subtraction questions when the digits are lined up correctly, as well as practice in lining them up yourself before subtracting.

Let's begin by studying the following problem. Read the problem to me.

When Baby Jamie was born his mass was 3.2 kg. When he was weighed the next day he had lost 0.4 kg. What was his mass on the second day?



Think: $3.2\text{kg} - 0.4\text{kg} = ?$

Write:

ones		tenths
3 ²	•	2 ¹²
- 0	•	4
2	•	8 kg

Remember to regroup

$$\begin{array}{r} 3.2 \rightarrow 2.12 \\ - 0.4 \\ \hline \end{array}$$

The baby's mass was 2.8 kg on the second day.

Now we're going to study a more difficult problem. Read the problem.

Jim is 151.8 cm tall. Cheryl is 3.91 cm shorter than Jim. How tall is Cheryl?

You know the first step is to align the numbers by the decimal points. Because Jim's height is written to the tenth decimal place, and Cheryl's is written to the hundredth place, it is easier to find the difference if you use a zero as a place holder. Look at this example.

$$\begin{array}{r} 151.80 \\ - 3.91 \\ \hline \end{array}$$

The next step is to subtract the same way you would with whole numbers. It's a good idea to write down the decimal point on the answer line before you calculate the answer. Look at this example.

$$\begin{array}{r} 151.80 \\ - 3.91 \\ \hline \end{array}$$

The final step is to complete the subtraction, borrowing (regrouping) if it's necessary. You'll see in this question, you need to regroup.

$$\begin{array}{r} \\ 151.80 \\ - 3.91 \\ \hline 147.89 \end{array}$$

Cheryl is 147.89 cm in height.

Now I'd like you to work on some subtraction questions with me. Take out a sheet of paper and a pencil. Copy the following questions onto the paper. You'll have to line up the decimal points before you subtract. I'll help you if you get stuck.

1. $8.7 - 7.2 =$
2. $100.2 - 84.7 =$
3. $7.509 - 0.29 =$

Have your child check his or her work by adding.
(Answers: 1. 1.5 2. 15.5 3. 7.219)

If your child could solve the subtraction questions with little help from you, he or she is ready to move on to the independent work.

If your child had any difficulty, work on a few more examples with him or her. Provide some questions where the numbers are lined up and some questions where your child must align the decimal points. When your child can arrive at the correct answers without your help, ask him or her to work on the independent activities.

**It's Your Turn**

Have your child look at this section on the Lesson 15 Practice Sheet. Make sure your child understands the activity directions by reading each with him or her. Ask your child to complete the section independently.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections.

**Challenge Yourself**

Ask your child to finish the lesson by completing this activity. Your child will need a calculator. You will find the answers in the Answer Key.

Lesson 16

Decimal Dollars



What You Need

- Practice sheets
- Teaching Aids
- Coins (optional)



Warm-Up

Ask your child to take out the Lesson 16 Practice Sheet and complete the Warm-Up activity. Read the directions with your child to ensure he or she understands what is required to complete the activity.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the end of this book.



Exploring the Topic

This lesson looks at the different ways your child can express money amounts – in cents, in dollars, and in words.

Parent Script:


Although you may not realize it, you have worked with decimals for a long time, at least as long as you have used money.

We talk about money in cents, in dollars, and in words. Let's have a quick look at the way the decimal point works in money.


Look at the illustration and count the coins. (33¢)



33¢ can be expressed as part of one dollar using decimals.



$$= \frac{1}{100} \text{ of one dollar}$$



$$= \frac{1}{10} \text{ of one dollar}$$




33¢ as a decimal is \$0.33 or 33 hundredths of one dollar.

When we have whole dollars, we separate the dollars from the cents with a decimal point.

\$2.42

↖ ↑ ↗

2 whole dollars decimal 42¢ point

Now that you understand that cents are hundredths of a dollar, the decimal point in money makes sense.

Let's see if you can solve some money questions on your own.

**It's Your Turn**

Have your child look at this section on the Lesson 16 Practice Sheet. Read each set of activity directions with your child to help him or her get started. Now ask your child to complete the section independently.

When your child has completed this section, mark his or her work and help him or her to do any needed corrections.

**Challenge Yourself**

Ask your child to finish the lesson by completing this activity. In it your child will be counting by decimal numbers. He or she made need some assistance. You will find the answers in the Answer Key.

Lesson 17

Estimating Dollar Sums and Differences



What You Need

- Practice sheets



Warm-Up

Ask your child to take out the Lesson 17 Practice Sheet and complete the Warm-Up activity. Read the directions with your child to ensure he or she understands what is required to complete the activity.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the back of this book.



Exploring the Topic

Parent Script:

Today we are going to have another look at estimating – this time dollar sums and differences. You'll have to ask yourself questions such as: "Is it closer to \$12 or \$13?"

We are going to study some problems before you begin working by yourself.

Let's look at the first problem.

Kyle has \$7.20 and his sister Janet has \$9.65. Estimate how much money they have altogether.



\$7.20—Think, is it closer to \$7 or \$8?

\$9.65—Think, is it closer to \$9 or \$10?

Write:

$$\begin{array}{r} \$7 \\ +10 \\ \hline \$17 \end{array}$$

They have about \$17 altogether.

The next problem is solved using subtraction. We'll read the problem and look at the way it's solved.

Janet has \$9.65 and spends \$2.80 of her money on a pen. Estimate how much money she has left.

\$9.65—Is it closer to \$9 or \$10?

\$2.80—Is it closer to \$2 or \$3?

Write:

$$\begin{array}{r} \$10 \\ -3 \\ \hline \$7 \end{array}$$

Janet has about \$7 left.

In this final problem, you will need to round to the nearest \$10. Let's work through the problem.

Mr. Swanson buys some wood for \$63.15 and some carpet for \$77.50. Estimate how much money he spent. Round each amount to the nearest \$10.

Think: \$63.15—Is it closer to \$60 or \$70?

\$77.50—Is it closer to \$70 or \$80?

Write:

$$\begin{array}{r} \$60 \\ +80 \\ \hline \$140 \end{array}$$

Mr. Swanson spent about \$140.

Now it's time for you to work independently. Before you begin, review the rounding rules once more.

Numbers from 0 to 4 round down to 0.

Numbers from 5 to 9 round up to 10.

Numbers from 0 to 49 round down to 0.

Numbers from 50 to 99 round up to 100.

Numbers from 0 to 499 round down to 0.

Numbers from 500 to 999 round up to 1000.



It's Your Turn

Have your child look at this section on the Lesson 17 Practice Sheet. To make sure your child understands the activity directions help him or her to get started. Now ask your child to complete the rest of the section independently.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections.



Challenge Yourself

Ask your child to finish the lesson by completing this activity. There is more than one correct answer for each of the four questions. If your child follows the directions in each question he or she will have a correct answer.

Lesson 18

Adding and Subtracting Dollars and Cents



What You Need

- Practice sheets



Warm-Up

Ask your child to take out the Lesson 18 Practice Sheet and complete the Warm-Up activity. Read the directions with your child to ensure he or she understands what is required to complete the activity.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the back of this book.



Exploring the Topic

When your child adds or subtracts money, he or she must deal with decimal tenths (dimes) and decimal hundredths (cents). It is not difficult as long as your child remembers to line up the decimal points.

Work through a pair of addition and a pair of subtraction problems with your child. He or she should then be ready to work on independent practice.

Parent Script:

We are going to look at some money problems. They are easy to solve as long as you remember to line up the decimal points. When you add or subtract money, dime amounts are decimal tenths and cent amounts are decimal hundredths.

When you are adding money the same regrouping rules apply—if you have 12 cents you must trade 10 pennies for 1 dime and so on.

Subtraction rules are the same as for addition—when you don't have enough cents to subtract from, you regroup by “borrowing” a dime (10 cents).

We are going to begin by looking at a couple of addition problems. I want you to pay special attention to the way the decimal points are lined up, and to regrouping.

Read the first problem.

*Jacques bought a hot dog for \$2.75 and a cola for \$0.99.
How much money did he spend?*

Think: $\$2.75 + \$0.99 = ?$

Write:

$$\begin{array}{r} \$2.75 \\ + 0.99 \\ \hline \end{array}$$

Line up the decimal points

Step 1: Add the cents.

$$\begin{array}{r} \\ \$2.\cancel{7}5 \\ + 0.99 \\ \hline 4 \end{array}$$

$9 + 5 = 14$
Regroup — 14 becomes 4 cents and 1 dime.

Step 2: Add the dimes.

$$\begin{array}{r} \\ \$2.\cancel{7}5 \\ + 0.99 \\ \hline .74 \end{array}$$

$9 + 7 + 1 = 17$
Regroup — 17 becomes 7 dimes and 1 dollar.

Step 3: Add the dollars.

$$\begin{array}{r} \$2.75 \\ + .99 \\ \hline \$3.74 \end{array} \quad \text{Jacques spent } \$3.74.$$

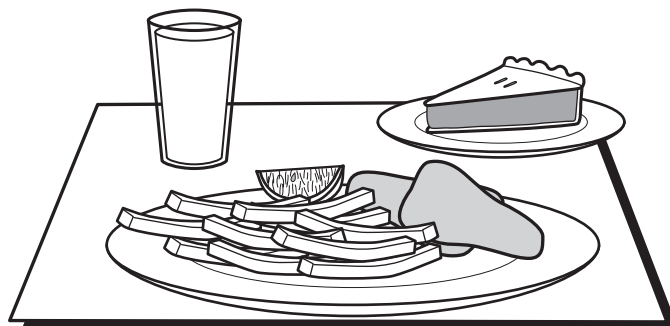
This problem is a little more difficult. Read the problem and look at the illustration.

How much do these 3 food items cost?

\$3.99

\$1.15

\$.95



Think: $\$3.99 + 1.15 + \$0.95 = ?$

Now, follow the steps to find the answer.

- Write the numbers down in a column.
- Be sure to line up the decimal points.
- Add the cents.
- Add the dimes.
- Add the dollars
- Write a statement. _____

(Your child's work should look like the following:

$$\begin{array}{r}
 \overset{2}{.} \overset{1}{.} \\
 \$3.99 \\
 1.15 \\
 +.95 \\
 \hline
 \$6.09
 \end{array}$$

The 3 food items cost \$6.09.)

Congratulate your child.

Now follow the same pattern to work on a pair of subtraction problems.

Parent Script:

Now that you can add money, let's look at subtraction problems.

Read the first problem.

Jerry wanted to buy a video game that cost \$69.95. His dad told Jerry he could buy one on sale for \$54.50. How much cheaper was the sale price?

Think: Regular price – sale price = savings

$$\$69.95 - \$54.50 = ?$$

Write: $\$69.99$

$$\begin{array}{r} \$69.99 \\ -54.50 \\ \hline \end{array}$$

$$\underline{\$15.45} \quad \text{The savings were } \$15.45.$$

In this problem you need to regroup to find the correct answer. Read the problem to me.

Lynn wanted to buy a poster for \$8. She only had \$5.25. How much more money does Lynn need in order to buy the poster?

You think: Cost of poster – How much Lynn has =

How much more money Lynn needs.

$$\$8.00 - 5.25 = ?$$

Now you find the answer.

- Write the numbers down in a column.
- Be sure to line up the decimal points.
- Add the cents.
- Add the dimes.
- Add the dollars
- Write a statement. _____

(Your child's work should look like the following:

$$\begin{array}{r}
 7910 \\
 \$8.\cancel{0}\cancel{0} \\
 - 5.25 \\
 \hline
 \$2.75
 \end{array}$$

Lynn needs \$2.75 more.)

Compliment your child for his or her work. Ask him or her to work on the independent practice in **It's Your Turn**.

If your child had difficulty with either the addition or subtraction part of this lesson, provide him or her with more question examples. Walk your child through each step toward finding the answers. When you think your child is ready, have him or her begin the independent practice.



It's Your Turn

Have your child look at this section on the Lesson 18 Practice Sheet. To make sure your child understands the activity, read each set of directions with him or her. Now ask your child to complete the section independently.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections.



Challenge Yourself

Ask your child to finish the lesson by completing this activity. You will find the answers in the Answer Key.

Lesson 19

Mixed Numbers—Ones, Tenths, Hundredths



What You Need

- Practice sheets
- Teaching Aids
 - Hundreds board
 - Pennies
 - Base 10 blocks
- Blank paper or chalkboard



Warm-Up

Take out the Lesson 19 Practice Sheet and ask your child to complete the Warm-Up activity. When he or she is finished, correct the work with your child.

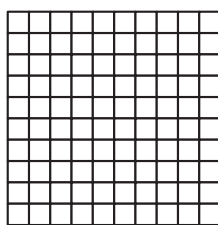


Exploring the Topic

Parent Script:

In this lesson you will put together what you have learned about decimal numbers.

Discuss with your child the following information of how base ten blocks can be used to show decimals.



= 1 (one)

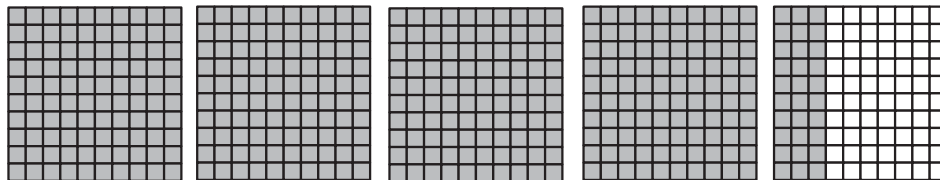


= 0.1 (1 tenth)



= 0.01 (1 hundredth)

Direct your child's attention to the following diagram.



Ask your child the following questions.

How many of the shaded parts represent whole numbers? (4)

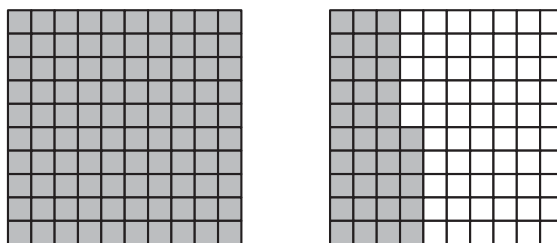
How many whole numbers can you see? (4)

How many tenths do you see? (3 tenths)

So we have 4 ones and 3 tenths.

What decimal fraction would you write for 4 ones (*whole numbers*) and 3 tenths? (4.3)

Ask your child to look at this diagram.



Parent Script:

How much of the diagram is shaded?

How many ones are shaded? (1)

How many tenths are shaded? (3)

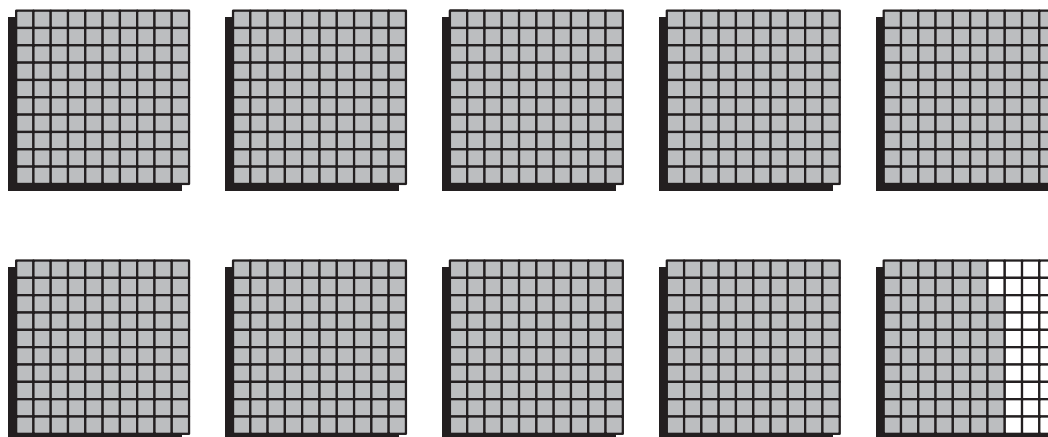
How many hundredths are shaded? (5)

So we have 1 one, 3 tenths, and 5 hundredths.

What decimal fraction would you write to represent this diagram? (1.35)

If your child has difficulty understanding how you arrived at this answer, use the hundreds board or the base ten blocks to show him or her.

Point to the diagram below.



Parent Script:

How much of this diagram is shaded in?

How many ones are shaded? (9)

How many tenths are shaded? (6)

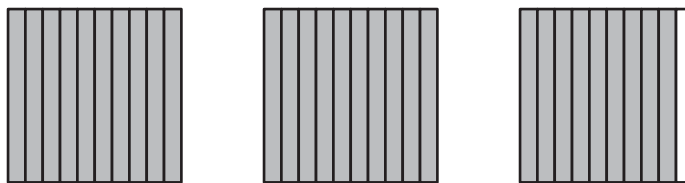
How many hundredths are shaded? (8)

So we have 9 ones, 6 tenths, and 8 hundredths.

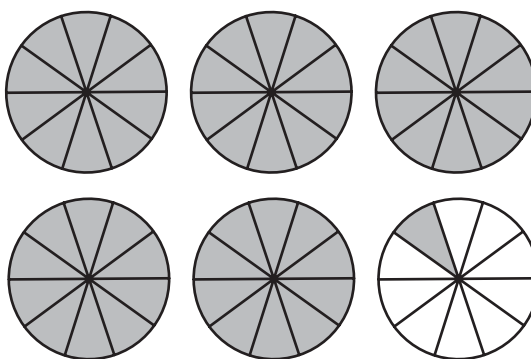
What decimal fraction would you write to represent this diagram?
(9.68)

If your child needs extra practice, ask him or her to write the decimal number for each shaded figure.

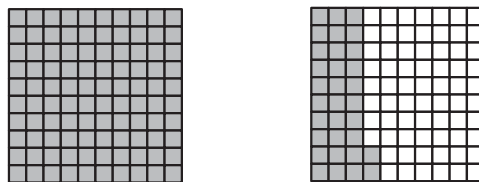
1.



2.



3.



**It's Your Turn**

Have your child look at the Lesson 19 Practice Sheet. To make sure your child understands the activity directions help him or her to complete the first question. Now ask your child to complete the rest of the section independently. When your child has completed this section, correct his or her work. Help your child to complete any needed corrections.

**Challenge Yourself**

Have your child complete this section on the Lesson 19 Practice Sheet. When your child has completed this section, correct his or her work. Help your child to complete any corrections.

Lesson 20

Renaming a Decimal Fraction as a Common Fraction



What You Need

- Practice sheets
- Teaching Aids
20 pennies



Warm-Up

Ask your child to take out the Lesson 20 Practice Sheet and complete the Warm-Up activity. Read the information and directions with your child to ensure he or she understands what is required to complete the activity.

When your child has completed the activity, correct it with him or her. You will find the answers in the Answer Key at the back of this book.



Exploring the Topic

When we express a decimal fraction as a common fraction, the place value of the decimal fraction becomes the denominator of the common fraction.

Begin this lesson by reviewing tenths, hundredths, and whole numbers.

Parent Script:

You know that a decimal fraction is a part of a whole number and that it takes 10 tenths to make one whole number. Also, it takes 100 one hundredths to make one whole number. In a math sentence they would look like this:

$$\begin{array}{l} 0.1 \times 10 = 1.0 \qquad \qquad \qquad 0.01 \times 100 = 1.0 \\ \text{one tenth times ten} = \text{one} \quad \text{one hundredth times 100} = \text{one} \end{array}$$

When we write a decimal fraction as a common fraction, we write it with a numerator and a denominator. For example, 0.1 is written as $\frac{1}{10}$. The 1 becomes the numerator and the place value—tenths—becomes the denominator.

10 is the denominator when we change 0.1 to a common fraction. The digit that describes the tenths' place value becomes the numerator.

Let's try some examples. Write these decimal fractions as common fractions.

Give your child help with the first two or three questions and then let him or her complete the rest.

- | | | |
|----------|----------|----------|
| 1. 0.1 = | 2. 0.2 = | 3. 0.3 = |
| 4. 0.4 = | 5. 0.5 = | 6. 0.6 = |
| 7. 0.7 = | 8. 0.8 = | 9. 0.9 = |

When your child has finished, help him or her check the answers.

- Answers:*
- | | | |
|-------------------|-------------------|-------------------|
| 1. $\frac{1}{10}$ | 2. $\frac{2}{10}$ | 3. $\frac{3}{10}$ |
| 4. $\frac{4}{10}$ | 5. $\frac{5}{10}$ | 6. $\frac{6}{10}$ |
| 7. $\frac{7}{10}$ | 8. $\frac{8}{10}$ | 9. $\frac{9}{10}$ |

Parent Script:

Remember that decimal numbers are expressed at tenths, hundredths, thousandths, and so on. If you think back to the money questions in the Warm-Up, you can see that pennies will work very nicely for expressing hundredths because it takes 100 pennies to make a whole dollar.

Let's see what hundredths look like as decimal fractions, and then you can rewrite them as common fractions.

$$\text{one penny} = 0.01$$

$$\text{four pennies} = 0.04$$

As common fractions, these can be expressed:

$$0.01 = \frac{1}{100} \quad \text{and} \quad 0.04 = \frac{4}{100}$$

Now it's your turn. Try writing the following amounts as common fractions.

Help your child with the first one or two questions and then let him or her complete the rest.

- | | | |
|-----------|-----------|-----------|
| 1. 0.07 = | 2. 0.13 = | 3. 0.05 = |
| 4. 0.22 = | 5. 0.08 = | 6. 0.45 = |

When your child has finished, help him or her check the answers.

Answers:

1. $\frac{7}{100}$	2. $\frac{13}{100}$	3. $\frac{5}{100}$
4. $\frac{22}{100}$	5. $\frac{8}{100}$	6. $\frac{45}{100}$

Ask your child to notice how the digits, other than the starting zeros, express the numerators. **0.07** becomes $\frac{7}{100}$ and **not** $\frac{07}{100}$.

Parent Script:

Finally, let's look at what you do when working with thousandths. You need to remember that digits other than the starting zeros are used to describe the numerator. Remember the denominator is 1000. Can you think of anything that is divided into 1000 parts?

Did you think of metres or kilometres?

One metre = one thousand millimeters.

One kilometer = one thousand metres

Look at the examples and then complete the questions that follow it.

Examples: $0.023 = \frac{23}{1000}$ $0.203 = \frac{203}{1000}$ $0.230 = \frac{230}{1000}$

- | | |
|--------------|---------------|
| 1. $0.047 =$ | 2. $0.135 =$ |
| 3. $0.008 =$ | 4. $0.765 =$ |
| 5. $0.056 =$ | 6. $0.003 =$ |
| 7. $0.506 =$ | 8. $0.004 =$ |
| 9. $0.679 =$ | 10. $0.321 =$ |

Let's check your answers and see how you've done. Good work!

Answers:

1. $\frac{47}{1000}$	2. $\frac{135}{1000}$	3. $\frac{8}{1000}$
4. $\frac{765}{1000}$	5. $\frac{56}{1000}$	6. $\frac{3}{1000}$
7. $\frac{506}{1000}$	8. $\frac{4}{1000}$	9. $\frac{679}{1000}$
10. $\frac{321}{1000}$		

You've learned in the questions you completed that the denominator is represented by the place value of the decimal fraction.

For tenths the denominator is 10

For hundredths the denominator is 100

For thousandths the denominator is 1000



It's Your Turn

Have your child look at this section on the Lesson 20 Practice Sheet. To make sure your child understands the activity directions help him or her to get started. Now ask your child to complete the rest of the section independently.

When your child has completed this section, mark his or her work. Help your child to do any needed corrections.



Challenge Yourself

Ask your child to finish the lesson by completing this activity. You will find the answers in the Answer Key.



At the end of the package your child is asked to complete a *Decimals and Common Fractions Mastery Test*. Before your child attempts this test, it may be necessary for him or her to review the skills and concepts taught in Lessons 1 through 20.

Mastery Test—Fractions and Decimals

Today your child will complete a Mastery Test. The questions on this test will cover the skills and concepts that have been taught in this package. If you feel your child is not ready to take the test, make sure you review any skills or concepts your child may still have difficulty understanding before you administer it. Do not give your child this test unless you are confident he or she can complete it successfully.

Note: Your child will need more than one sitting to complete this test. Your child should complete the Common Fraction section first. He or she is to finish the Decimal Fraction section at a later time.

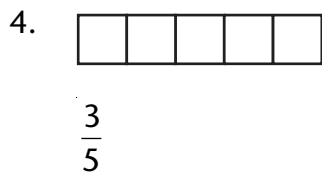
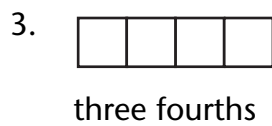
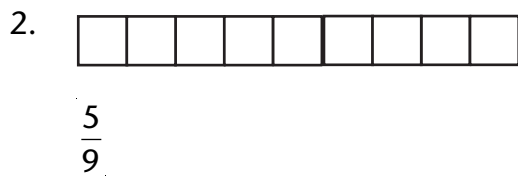
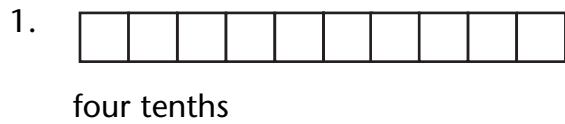
Take out the Mastery Test on the following pages and place it in front of your child. Explain to him or her that the test needs to be completed independently. Encourage your child to take a few moments to look over the questions. Ask your child if he or she understands what is expected. Give your child as much time as he or she needs to complete the test. If you see your child having any difficulty answering a question, tell him or her to leave that question and move on to the next one. When your child has completed all of the questions, encourage him or her to look over the work for any errors that may have been made. Mark the test with your child.

As you mark the test you will see the concepts or skills your child still has difficulty mastering and will need more practice. Make sure your child reviews these skills or concepts before moving on to the next Mathematics package.

Mastery Test—Fractions and Decimals

Part A

A. Colour the correct number of parts to show each fraction.



B. Write each fraction in words. Remember to spell the words correctly.

1. $\frac{7}{8}$ _____ 2. $\frac{3}{4}$ _____

3. $\frac{7}{10}$ _____ 4. $\frac{4}{6}$ _____

C. Write the number for each fraction.

1. two thirds _____
2. three eighths _____
3. one quarter _____
4. four fifths _____

D. Here are the names of six towns in British Columbia. Remember to write your answer as a common fraction.

HOPE NANAIMO CRANBROOK CRESTON
VANCOUVER MERRIT

1. What fraction of the towns has the letter "l" in their names?

2. What fraction of the towns has more than 6 letters in their name?

3. What fraction of the towns have the letter "r" in them?

4. What fraction of the towns has a 4-letter name?

Part B

Use < or > to complete each statement.

1. $\frac{0}{3}$ _____ $\frac{1}{3}$

2. $\frac{10}{11}$ _____ $\frac{4}{11}$

3. $\frac{8}{9}$ _____ $\frac{2}{9}$

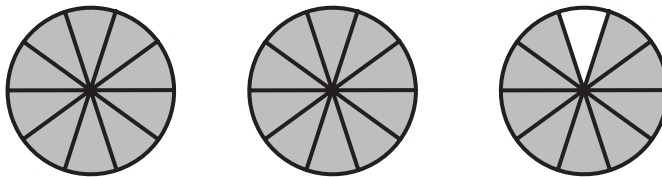
4. $\frac{1}{10}$ _____ $\frac{0}{10}$

5. $\frac{9}{9}$ _____ $\frac{1}{9}$

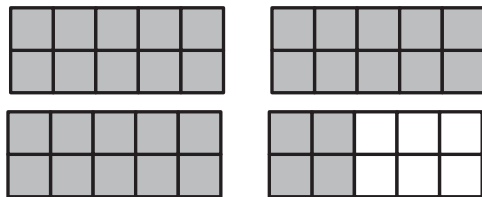
Part C

A. Express the shaded parts of each shape as a common fraction and a decimal.

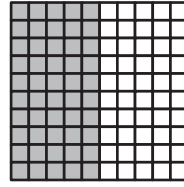
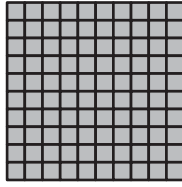
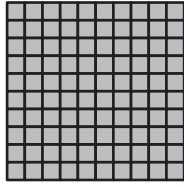
1.



2.



3.



B. Write each of the fractions as a common fraction.

1. two tenths _____ 2. 0.6 _____

3. 9 tenths _____ 4. 0.5 _____

5. 0.3 _____

C. Write each fraction as a decimal fraction.

1. eight tenths _____

2. sixteen tenths _____

3. thirty-two tenths _____

4. eleven tenths _____

5. 10 tenths _____

D. Write these decimals in words.

1. 7.2 _____

2. 5.8 _____

3. 12.7 _____

4. 18.9 _____

5. 23.2 _____

Part D

A. How many ones and tenths are in each of the fractions.

1. $\frac{21}{10}$ _____

2. $\frac{45}{10}$ _____

3. $\frac{19}{10}$

4. twenty-two tenths _____

5. seventeen tenths _____

B. Write each fraction as a decimal number.

1. Thirty-nine hundredths _____

2. Seventeen hundredths _____

3. $\frac{73}{100}$ _____

4. fifteen and eight hundredths _____

5. $7\frac{8}{10}$ _____

Part E

A. Write < (less than) or > (greater than) to complete each number statement.

1. 0.12 _____ 0.21 2. 21.7 _____ 7.87

3. 14.01 _____ 14.00 3. 70.04 _____ 74.07

5. 16.44 _____ 44.16

B. Order the numbers from least to greatest.

1. 30.2, 32.9, 29.3, 23.9

2. 8.2, 8, 8.8, 9, 8.1

C. Count by tenths.

1. From 29.6 to 30.4

2. From 16.8 to 17.7

3. From 35.6 to 36.5

Part F

A. Write an equivalent decimal number for each of the following.

a. 75.1 as thousandths _____

b. 0.09 as thousandths _____

c. 615.990 as hundredths _____

d. 4519 as thousandths _____

B. Use the place-value chart for each number. Put each number in the correct position on the chart.

1. 15.75

Tens	Ones	Tenths	Hundredths
------	------	--------	------------

2. 20.08

Tens	Ones	Tenths	Hundredths
------	------	--------	------------

C. Central Heights High School had five top long distance runners in the City Track Meet. Their fastest times were:

1. Jim 43.01
2. Sam 44.52
3. Paul 43.10
4. Karl 45.01
5. Hayne 44.66

Arrange the runners' names in order from first place to fifth place.

D. Order the following set of numbers from least to greatest.

845.051 845.115 845.50 840.500

E. Count by thousandths.

6.996 6.997 _____

F. Circle the number in each group with the least value.

1. 16.12	2. 7.925
16.0	7.91
15.999	7.999
16.001	7.099
16.90	7.9

G. Write $>$, $<$, or $=$ to complete each number statement.

1. 94 _____ 93.889
2. 34.01 _____ 34.010
3. 765.19 _____ 756.995
4. 1.384 _____ 1.39
5. 75.67 _____ 75.629

Part G

A. Round each money amount to the nearest dollar. Write your answers in standard form (with dollar signs).

1. 4 dollars and eight cents _____

2. \$12.78 _____

3. eleven and one half dollars _____

B. Round each decimal number to the nearest whole number.

1. 20.50 _____

2. 481.4 _____

3. 17.4 _____

4. 88.5 _____

5. 11.44 _____

6. 12.635 _____

C. Round to the nearest tenth.

1. 0.45 _____

2. 8.26 _____

3. 24.37 _____

4. 65.384 _____

5. 450.986 _____

D. Round each decimal number to the nearest whole number and add or subtract.

$$\begin{array}{r} 1. \quad 55.6 \quad \rightarrow \\ \quad \underline{-31.8} \quad \rightarrow \quad \underline{\hspace{2cm}} \end{array}$$

$$\begin{array}{r} 2. \quad 17.5 \quad \rightarrow \\ \quad \underline{+8.5} \quad \rightarrow \quad \underline{\hspace{2cm}} \end{array}$$

$$\begin{array}{r} 3. \quad 86.2 \quad \rightarrow \\ \quad \underline{+69.6} \quad \rightarrow \quad \underline{\hspace{2cm}} \end{array}$$

$$\begin{array}{r} 4. \quad 66.3 \quad \rightarrow \\ \quad \underline{-59.7} \quad \rightarrow \quad \underline{\hspace{2cm}} \end{array}$$

Part H

A. Line up the decimal fractions and add. Show all your work.

1. $15.6 + 22.4$

2. $102.6 + 23.8$

3. $4.13 + 21 + 6.5 + 6.25$

4. $\$7.98 + \$19.25 + 303.19$

5. $0.635 + 4.5 + 0.80 + 16$

B. Align these numbers and find the differences. Show your work.

1. $81.4 - 37.2$

2. $47.6 - 23.8$

3. $0.836 - 0.199$

4. $8.23 - 1.15$

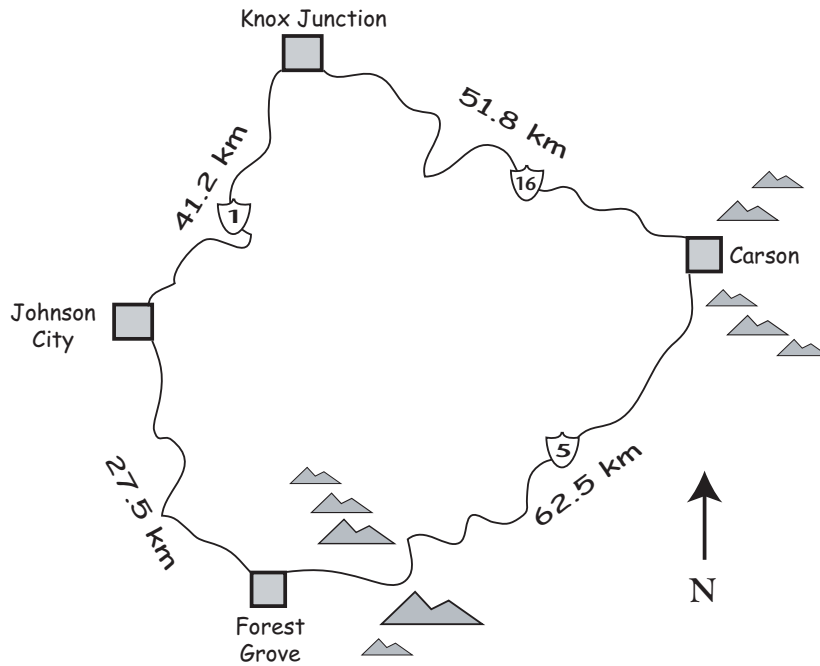
5. $93.5 - 18.29$

6. $\$482.16 - \195.42

Part I

A. Solve each problem. Show all your work and write a statement to answer each question.

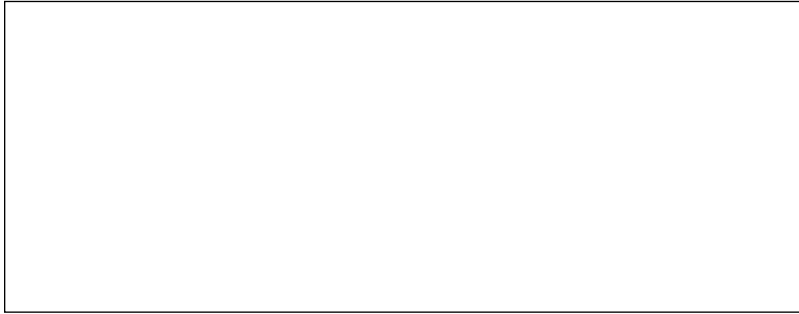
Use the road map to answer problems 1, 2, and 3.



1. How far is it from Carson to Johnson City if you go through Forest Grove?

Statement: _____

2. How far is it from Carson to Johnson City if you go through Knox Junction?



Statement: _____

3. What is the total distance if you started at Knox Junction and visited all the other cities before returning to Knox Junction?



Statement: _____

Use the menu below to answer problems 4 and 5.

Hamburger			\$ 1.80
Chicken Burger			\$ 2.40
Hot Dog			\$ 1.35
French Fries			\$ 1.15
Ice Cream			65¢
Cola	small 75¢	med. 95¢	large \$1.15
Milk	small 90¢	med. \$1.10	large \$1.35

4. Frankie ordered a chicken burger, fries, and a large milk. How much did she spend?

Statement: _____

5. How much would 2 hot dogs, a medium cola, and 2 ice cream cost?

Statement: _____

6. Rewrite the decimal fractions as common fractions.

1. $0.025 = \underline{\hspace{2cm}}$

4. $0.08 = \underline{\hspace{2cm}}$

2. $0.8 = \underline{\hspace{2cm}}$

5. $0.090 = \underline{\hspace{2cm}}$

3. $0.501 = \underline{\hspace{2cm}}$

6. $0.90 = \underline{\hspace{2cm}}$

Fractions and Decimals

Practice Sheets

Lesson 1

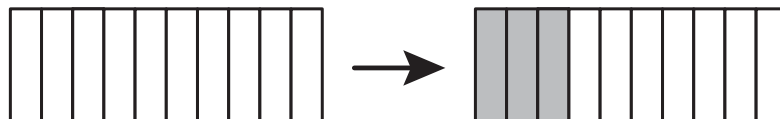
Representing Fractions—Parts of a Whole



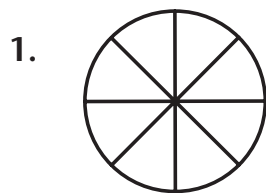
It's Your Turn

A. Shade the number of equal parts to show each fraction.

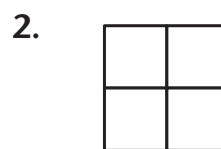
Example:



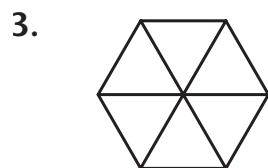
$\frac{3}{10}$ (3 of the 10 parts shown are shaded.)



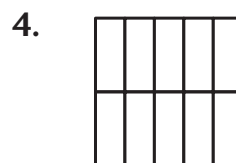
$\frac{3}{8}$



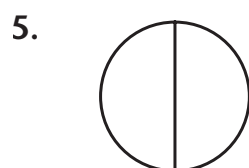
$\frac{1}{4}$



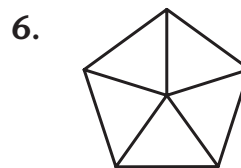
$\frac{4}{6}$



$\frac{8}{10}$



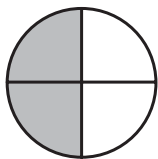
$\frac{1}{2}$



$\frac{3}{5}$

B. Write the fraction in numbers and words for each question.

Example:

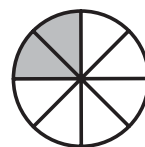


$\frac{2}{4}$ two fourths (2 of the 4 parts are shaded.)

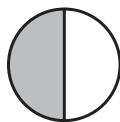
1.



2.



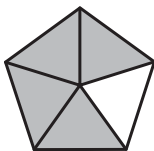
3.



4.



5.



6.



C. Write each fraction in words.

1. $\frac{3}{4}$ _____

2. $\frac{2}{3}$ _____

3. $\frac{1}{2}$ _____

4. $\frac{5}{8}$ _____

5. $\frac{2}{5}$ _____

6. $\frac{9}{10}$ _____

D. Write each fraction in numbers.

1. one quarter _____

2. three eighths _____

3. five sixths _____

4. one third _____

5. one half _____

6. six tenths _____



Challenge Yourself

A. Draw a picture and colour each of the fractions named.

1. $\frac{1}{2}$ of a circle

2. $\frac{3}{8}$ of a circle

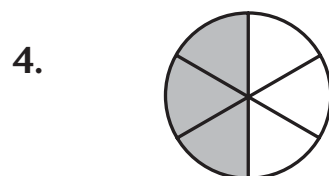
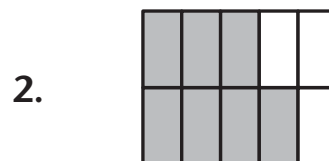
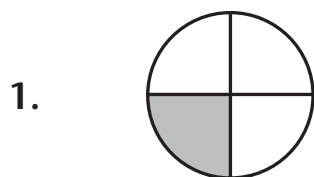
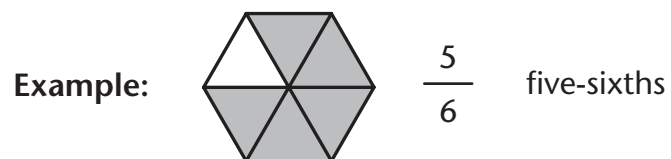
3. $\frac{2}{3}$ of a rectangle

4. $\frac{1}{4}$ of a square

5. $\frac{9}{10}$ of a rectangle

6. $\frac{4}{6}$ of a circle

- B. Write a fraction for each shaded part of the diagrams. Use both numbers and words to complete your answers.



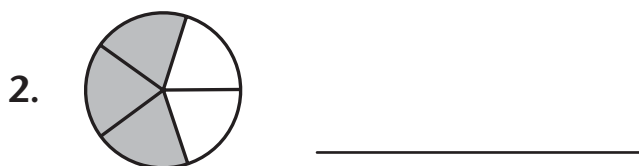
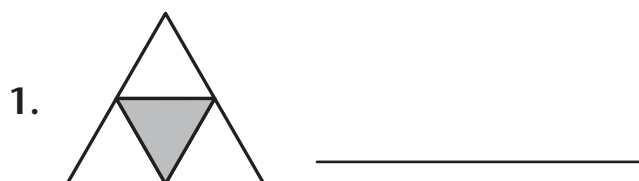
Lesson 2

Fractions of a Set



Warm-Up

- A. Look at the following diagrams. Remember the numerator shows the part that you are asked to represent. What fraction of each shape is shaded?



B. Draw a set of squares to show these fractions.

1. $\frac{3}{7} =$

2. $\frac{4}{5} =$

3. $\frac{4}{9} =$

4. $\frac{2}{5} =$

5. $\frac{5}{8} =$



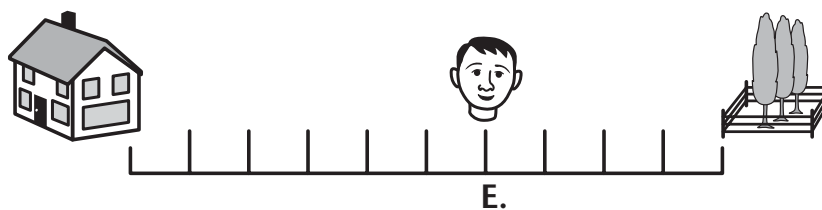
It's Your Turn

Part A

Read these problems.

1. Edward passes a number of telephone poles on his way to the park. He uses the poles to tell what fraction of the distance he has traveled. Look at each number line and write the fraction of the trip Edward has completed.

a.



b.



c.



2. What fraction of the distance has Jennifer traveled from her home to her friend's home?

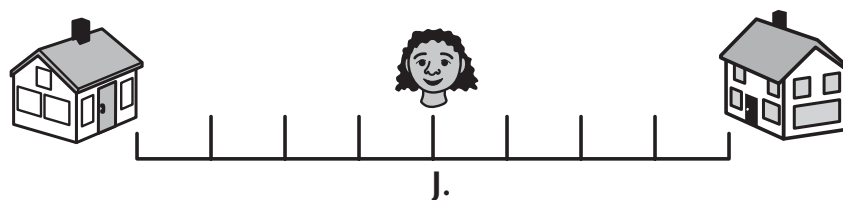
a.



b.



c.



Part B

Here are all the names of the students who worked on a group Art project.

Bob	Jamie	Tod	Sean	Clive
Lance	Lonnie	Lori	Jasmine	Karen

1. What fraction of the students have the letter O in their name?

2. What fraction of the students have only 3 letters in their name?

3. What fraction of the students have 7 letters in their name?

4. What fraction of the students have names beginning with L?

5. What fraction of the students have 5 letters in their name?



Challenge Yourself

Know your country! Look at the map of the 10 provinces of Canada and answer the following questions.



1. What fraction of the provinces touch either the Pacific or Atlantic Ocean?

2. What fraction of the provinces do not touch either the Pacific or Atlantic Ocean?

3. Which letter do more provinces start with?

What fraction is this?

4. What fraction of the provinces have more than 1 word in their official name?

5. What fraction of the provinces share a land border with the United States?

Lesson 3

Equivalent Fractions



Warm-Up

On the number lines below, write the fraction that represents each of the lettered points.









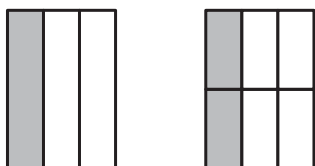




It's Your Turn

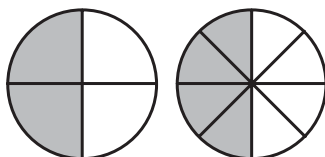
- A. Fill in the missing numbers to make equivalent (equal) fractions.

Example:



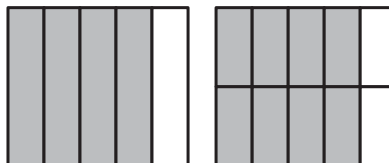
$$\frac{1}{3} = \frac{?}{6} \quad \left(\frac{2}{6} \right)$$

1.



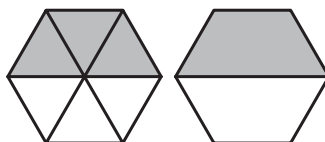
$$\frac{2}{4} = \frac{\quad}{8}$$

2.



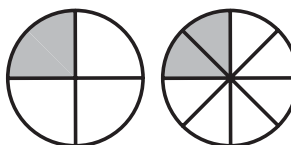
$$\frac{4}{5} = \frac{\quad}{10}$$

3.



$$\frac{3}{6} = \frac{\quad}{2}$$

4.



$$\frac{1}{4} = \frac{\quad}{8}$$

- B. Complete the following equivalent fractions. If necessary, you can use the diagram from Part A to help you answer these questions.

1. $\frac{5}{10} = \frac{\quad}{2}$

2. $\frac{3}{4} = \frac{\quad}{8}$

3. $\frac{1}{2} = \frac{\quad}{4}$

4. $\frac{2}{3} = \frac{\quad}{6}$



Challenge Yourself

Complete these equivalent fractions.

1. $\frac{4}{5} = \frac{\quad}{10}$

2. $\frac{2}{4} = \frac{\quad}{8}$

3. $\frac{6}{10} = \frac{\quad}{5}$

4. $\frac{3}{6} = \frac{\quad}{2}$

5. $\frac{6}{12} = \frac{\quad}{4}$

Lesson 4 Comparing Fractions



Warm-Up

Use $<$, $=$, or $>$ to compare the following numbers.

1. 991 _____ 919
2. 10 010 _____ 10 100
3. \$0.20 _____ \$2.00
4. 57 994 _____ 57 994
5. 50 000 + 500 _____ 50 000 + 50 + 5



It's Your Turn

A. Use $>$ or $<$ to complete each statement.

1. $\frac{3}{4}$ _____ $\frac{1}{4}$
2. $\frac{4}{5}$ _____ $\frac{3}{5}$
3. $\frac{1}{8}$ _____ $\frac{3}{8}$
4. $\frac{8}{10}$ _____ $\frac{9}{10}$
5. $\frac{7}{8}$ _____ $\frac{6}{8}$
6. $\frac{10}{10}$ _____ $\frac{1}{10}$
7. $\frac{0}{6}$ _____ $\frac{1}{6}$
8. 1 _____ $\frac{1}{2}$

- B. Divide the strips into the indicated fractions. Shade the fraction strips to make the true statement.

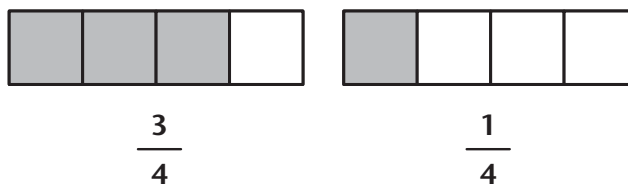
Example: $\frac{3}{4}$ and $\frac{1}{4}$



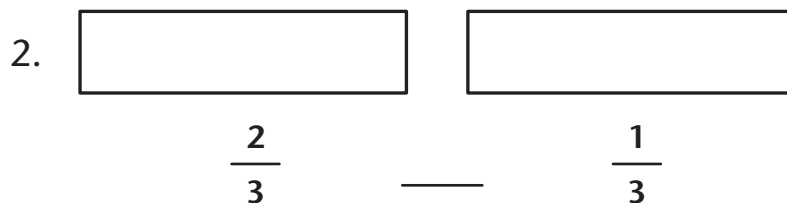
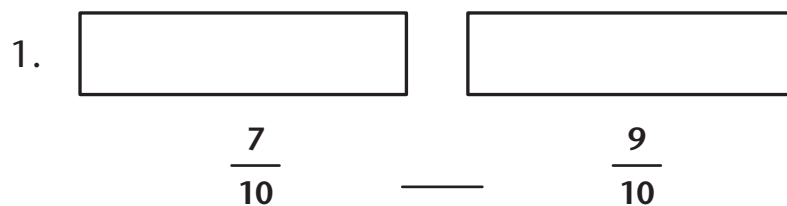
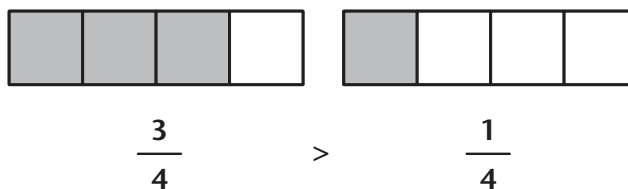
Step 1: Divide each figure into fourths.



Step 2: Shade each strip to make the fractions shown.



Step 3: Complete the statement using $>$ or $<$.



3.

$$\frac{4}{5} \quad \text{—} \quad \frac{3}{5}$$

4.

$$\frac{3}{6} \quad \text{—} \quad \frac{5}{6}$$



Challenge Yourself

Fraction Problems. Read each problem carefully and then write the fraction that tells what is left.

- Jennifer gave $\frac{3}{4}$ of her doll collection to her younger sister.
What fraction of the doll collection did Jennifer still have?

- Boys make up $\frac{3}{10}$ of the students on the bus.
What fraction of the students are girls?

- Jack spent $\frac{8}{10}$ of a dollar. What fraction of the dollar was left?

- Three boys ate $\frac{1}{2}$ a pizza. How much of the pizza was left?

Lesson 5 Review



It's Your Turn

A. Colour the correct number of parts to show each fraction below.



$$\frac{3}{5}$$



$$\frac{2}{6}$$



$$\frac{3}{4}$$

B. Write each fraction in words.

1. $\frac{1}{2}$ _____ 2. $\frac{3}{4}$ _____

3. $\frac{8}{10}$ _____ 4. $\frac{6}{8}$ _____

C. Write each fraction in numbers.

1. one eighth _____ 2. two thirds _____

3. five sixths _____ 4. three fourths _____

D. Draw and shade the following sets.

Draw 4 squares and shade $\frac{1}{4}$ of the squares.




1. Draw 3 circles and shade $\frac{1}{3}$ of the circles.

2. Draw 5 rectangles and shade $\frac{4}{5}$ of the rectangles.


3. Draw 6 triangles and shade $\frac{2}{6}$ of the triangles.


4. Draw 2 happy faces and shade $\frac{1}{2}$.

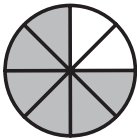
E. Write two equivalent fractions for the shaded parts in each shape.

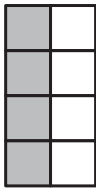
Example: 


$\frac{6}{8} = \frac{3}{4}$


3 of the 4  – sized rectangles are shaded.

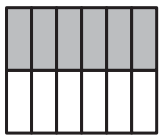
6 of the 8  – sized squares are shaded.

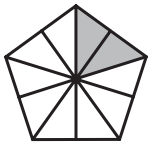
1. 

2. 

3. 

4. 

5. 

6. 

F. Complete the following equivalent fractions.

1. $\frac{3}{5} = \frac{\quad}{10}$

2. $\frac{1}{2} = \frac{\quad}{8}$

3. $\frac{4}{6} = \frac{\quad}{3}$

4. $\frac{1}{4} = \frac{\quad}{8}$

5. $\frac{8}{10} = \frac{\quad}{5}$

6. $\frac{3}{6} = \frac{\quad}{2}$

G. Shade the fraction strips to match the fractions shown in each rectangle.

Example:



$$\frac{1}{3}$$

<



$$\frac{2}{3}$$

1.



$$\frac{4}{5}$$

>



$$\frac{2}{5}$$

2.



$$\frac{7}{10}$$

<



$$\frac{9}{10}$$

3.



$$\frac{5}{8}$$

<



$$\frac{7}{8}$$

H. Write $<$ or $>$ to complete each statement.

1. $\frac{7}{10}$ _____ $\frac{9}{10}$

2. $\frac{6}{8}$ _____ $\frac{4}{8}$

3. $\frac{0}{4}$ _____ $\frac{3}{4}$

4. $\frac{9}{9}$ _____ $\frac{1}{9}$

Lesson 6

Introducing Decimals



Warm-Up

Write the number for each fraction.

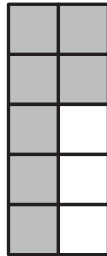
1. three fifths _____
2. one half _____
3. nine tenths _____
4. one eighth _____
5. five tenths _____
6. one fifth _____
7. two thirds _____
8. two sixths _____
9. seventy hundredths _____
10. seven eighths _____



It's Your Turn

- A. Write a common fraction and a decimal fraction for the shaded parts of each diagram.

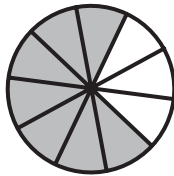
1.



2.



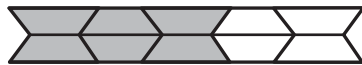
3.



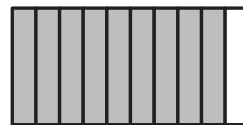
4.



5.



6.



- B. Write each of the decimal fractions below as a common fraction.

Example: $0.5 = \frac{5}{10}$

three tenths = 0.3

1. one tenth _____
2. 0.1 _____
3. 0.7 _____
4. five tenths _____
5. nine tenths _____
6. 0.8 _____

- C. Write each common fraction below as a decimal fraction.

Example: $\frac{1}{10} = 0.1$

seven tenths = 0.7

1. eight tenths _____
2. two tenths _____
3. $\frac{3}{10}$ _____
4. $\frac{9}{10}$ _____
5. six tenths _____
6. five tenths _____



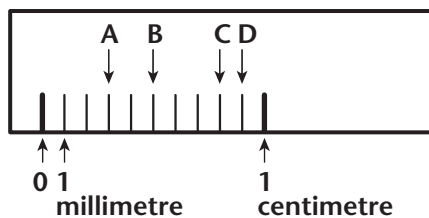
Challenge Yourself

Measuring a Tenth of a Centimetre

Metric units are always expressed (written) as a decimal.

There are 10 millimetres in 1 centimetre.

Therefore, 1 millimeter = $\frac{1}{10}$ cm.



$$1 \text{ millimetre} = 0.1 \text{ centimetre}$$

Write the following millimeters as centimeters.

1. 3 millimetres = _____ centimetres
2. 5 millimetres = _____ centimetres
3. 8 millimetres = _____ centimetres
4. 9 millimetres = _____ centimetres
5. What would 10 millimetres be equal to? _____

Lesson 7

More About Decimals



Warm-Up

A. Write the following as numerals.

1. seven thousand six hundred five _____

2. forty thousand two hundred _____

3. nine hundred twenty-three _____

4. eight thousand one _____

5. sixty-eight thousand _____

B. Write in word form.

4200 _____

69 000 _____

507 _____

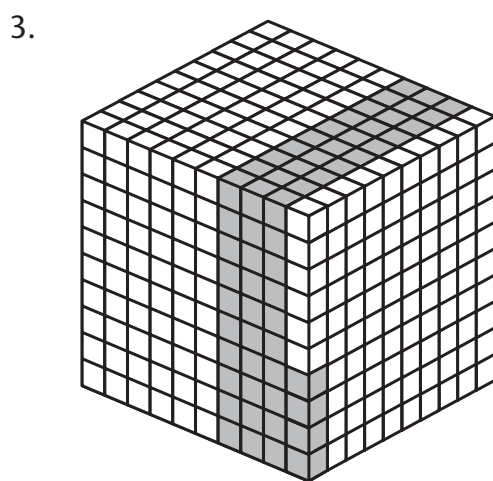
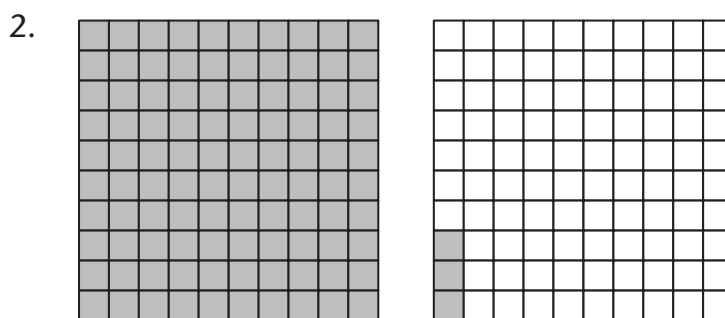
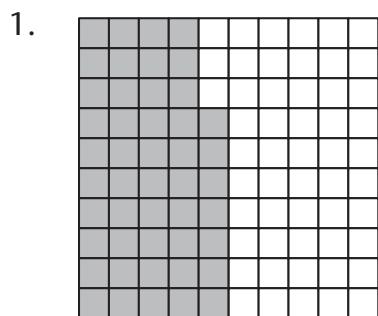
30 000 _____

406 000 _____

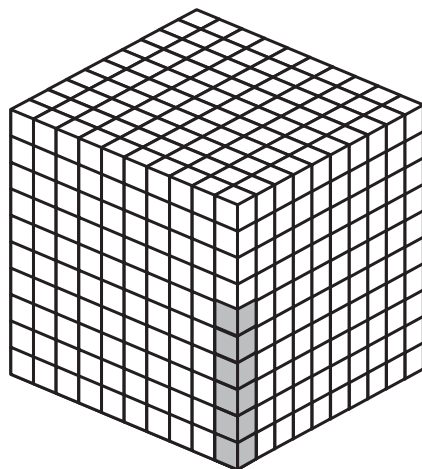


It's Your Turn

- A. Write the decimal fraction that represents the shaded part of each of the following diagrams.



4.



B. Write the rule that determines which place on the right side of the decimal point a number will be written for the following:

1. tenths _____

2. hundredths _____

3. thousandths _____

C. Write the following as decimal fractions.

1. eight tenths _____

2. six hundred and nine hundredths _____

3. two thousandths _____

4. seven and fifty-one hundredths _____

5. forty-four thousandths _____

6. five hundred and seven thousandths _____

D. Write the following decimal fractions as words.

1. 0.8 _____

2. 0.03 _____

3. 0.004 _____

4. 5.36 _____

5. 2000.150 _____

Lesson 8

Making Equivalent Decimals



Warm-Up

Write the following numerals using zeros as place holders.

1. 3 tens _____
2. 700 hundreds _____
3. 90 thousands _____
4. 800 tens _____
5. 610 hundreds _____
6. 20 thousands _____
7. 191 thousands _____
8. 3910 tens _____



It's Your Turn

Write equivalent decimal numbers for each of the following decimals.

A. Show as tenths:

1. 0.30 _____
2. 0.200 _____
3. 5.600 _____
4. 0.900 _____
5. 3498.00 _____
6. 679 _____

B. Show as hundredths:

1. 0.3 _____

2. 0.9 _____

3. 0.890 _____

4. 67.8 _____

5. 19.2 _____

6. 3891 _____

C. Show as thousandths:

1. 0.03 _____

2. 0.9 _____

3. 0.07 _____

4. 43.1 _____

5. 391 _____

6. 4.20 _____



Challenge Yourself

A. Circle the greater decimal in each pair.

1. 0.46 or 0.37

4. 2.70 or 2.07

2. 3.06 or 4.02

5. 0.22 or 0.06

3. 0.18 or 0.72

6. 7.60 or 7.51

B. John said that 1.40 is greater than 1.4 because 40 is greater than 4. Is he correct? Use pictures to support your answer.

Lesson 9

Fractions and Decimals Greater than 1



Warm-Up

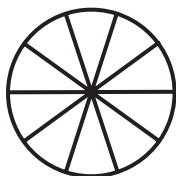
- A. Shade the number of parts in each diagram to match the fraction beside it.

1.



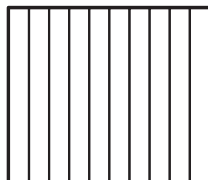
four tenths

2.



0.7

3.



0.9

B. Write the decimal fraction for each of the following fractions.

1. $\frac{6}{10}$ _____

2. $\frac{8}{10}$ _____

3. $\frac{3}{10}$ _____

4. $\frac{4}{10}$ _____

5. $\frac{1}{10}$ _____

6. $\frac{7}{10}$ _____

7. $\frac{0}{10}$ _____

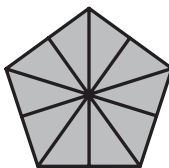
8. $\frac{9}{10}$ _____



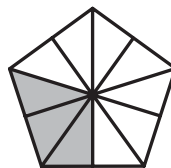
It's Your Turn
Part A

A. Write a decimal fraction and a common fraction for the coloured parts in each of the diagrams.

Example:

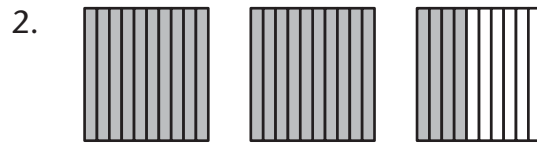


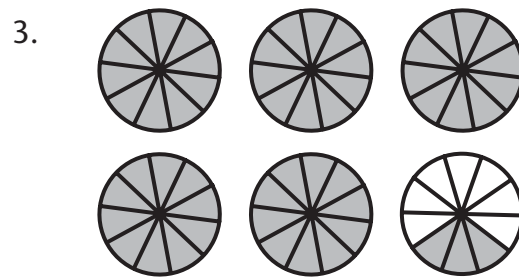
$$1 \frac{3}{10}$$

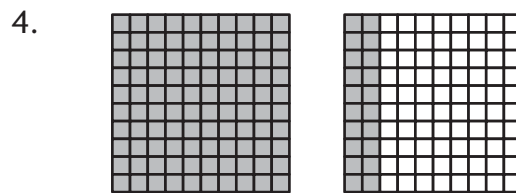


$$1.3$$









Part B

A. Write these decimals in words.

Example: 2.6 two and six tenths

1. 4.1 _____

2. 11.9 _____

3. 10.2 _____

4. 1.5 _____

5. 5.8 _____

B. How many ones and tenths are in each of these fractions.

Example: $\frac{15}{10}$ 1 one and 5 tenths

1. $\frac{17}{10}$ _____ ones tenths _____

2. $\frac{21}{10}$ _____ ones tenths _____

3. $\frac{32}{10}$ _____ ones tenths _____

C. Count by tenths

Example: 0.5 to 1.1 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.1

1. From 0.4 to 0.9 _____

2. From 0.9 to 1.4 _____

3. From 1.9 to 2.3 _____

Lesson 10

Comparing Decimal Fractions Using Place Value



Warm-Up

Write the value of each of the underlined digits.

Example: 417 623 7000

1. 14 235 _____

2. 86 301 _____

3. 114 265 _____

4. 7065 _____

5. 178 290 _____

6. 454 154 _____

7. 1 001 321 _____

8. 2.751 345 _____

**It's Your Turn**

A. Write each number as a decimal in standard form.

Example: two and sixty hundredths 2.60

1. four and seven tenths _____
2. eleven and forty-two hundredths _____
3. seven hundredths _____
4. nine tenths _____

B. Write the value of the underlined digit as a decimal and as a fraction.

Example: 7.15

$$1 = 0.1 \text{ and } \frac{1}{10}$$

1. 12.16 _____
2. 8.27 _____
3. 19.75 _____
4. 61.05 _____

- C. Use the place value chart for each number and put each number into its correct position on the chart.

Example: 16.45

Tens	Ones	Tenths	Hundredths
1	6	.	4
		↑	

place the decimal point on the chart

1. 8.45

Tens	Ones	Tenths	Hundredths

2. 12.07

Tens	Ones	Tenths	Hundredths

3. 9.60

Tens	Ones	Tenths	Hundredths

D. Write the value of each underlined digit.

1. $1\underline{7}.42$ _____

2. $11.\underline{7}5$ _____

3. $6.0\underline{9}$ _____

4. $1\underline{4}.06$ _____

5. $20.\underline{7}0$ _____

6. $\underline{4}6.41$ _____

E. Write < (less than) or > (greater than) to complete each number statement below.

1. 0.21 ____ 0.12

6. 99.002 ____ 98.763

2. 3.16 ____ 4.99

7. 11.310 ____ 11.301

3. 17.21 ____ 7.89

8. 5.005 ____ 5.050

4. 13.01 ____ 13.00

9. 783.90 ____ 784.90

5. 619.444 ____ 691.444

10. 20.016 ____ 20.106



Challenge Yourself

- A. Write an equivalent decimal for each of the given decimals below.

Example: $1.70 \rightarrow 1.7$

1. 7.70 _____ 2. 3.4 _____
3. 17.8 _____ 4. 2.3 _____
5. 19.90 _____ 6. 25.60 _____

- B. Order from least to greatest.

1. 0.034 0.043 0.039 0.304 0.344
-

2. 392.01 391.02 390.99 392.21 391.22
-

- C. Order from greatest to least.

1. 79.41 178.41 77.04 79.14 79.07
-

2. 0.002 0.012 0.200 0.120 0.001
-

Lesson 11

Ordering Decimals



Warm-Up

- A. Complete the chart below by filling in the common fraction and decimal fraction for each of the numbers given.

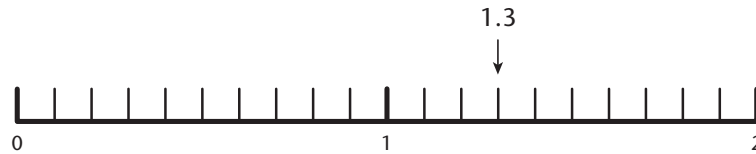
Number	Common Fraction	Decimal Fraction
1. $\frac{12}{10}$	_____	_____
2. $\frac{23}{10}$	_____	_____
3. $\frac{38}{10}$	_____	_____
4. $\frac{26}{10}$	_____	_____
5. $\frac{17}{10}$	_____	_____
6. $\frac{10}{10}$	_____	_____



It's Your Turn

A. Place each of the following decimals on the number line.

Example: 1.3



1. 3.9

2. 0.6

3. 4.7

4. 1.4

5. 2.8

6. 4.2



B. Order each group of numbers from least to greatest.

1. 4.2, 0.4, 2.1

2. 7.9, 7.1, 8.2

3. 5.3, 6, 5.5, 6.1

4. 6.8, 7, 7.3, 7.1

5. 2.3, 1, 0.7, 1.6, 1.9

6. 3.0, 4.1, 3.9, 4.0



Challenge Yourself

Order each group of numbers from the greatest to the least.

1. 7.2, 2.7, 0.7, 7.8, 7.1

2. 0.9, 9.0, 9.9, 9.1, 9.6

3. 10.1, 10.6, 10, 10.9, 11.2

4. 5.1, 7.3, 8.3, 0.9, 4.8, 3.7

Lesson 12

Rounding Decimals to the Nearest Tenth and Nearest One



Warm-Up

Round each number to the nearest 100.

1. 695 _____
2. 1065 _____
3. 11 290 _____
4. 4080 _____
5. 17 555 _____
6. 101 623 _____
7. 145 051 _____
8. 77 777 _____



It's Your Turn

A. Fill in the missing whole numbers.

1. 5.7 is between _____ and _____
2. 13.01 is between _____ and _____
3. 15.75 is between _____ and _____
4. 6.75 is between _____ and _____
5. 9.01 is between _____ and _____

- B. 1. What place do you check when rounding to the nearest tenth?

2. What place do you check when rounding to the nearest one?

- C. Circle the correct answer from the 2 given with each question. Use your rounding skills.

Example: 7.12 is closer to 7 and 1 tenths or 7 and 2 tenths

- 2.56 is closer to 2 and 5 tenths or 2 and 6 tenths
- 4.07 is closer to 4 and 0 tenths or 4 and 1 tenth
- 7.73 is closer to 7 and 7 tenths or 7 and 8 tenths
- 9.60 is closer to 9 and 6 tenths or 9 and 7 tenths
- 9.96 is closer to 9 and 9 tenths or 10

- D. Round these numbers to the nearest tenth.

1. 6.44 _____

2. 17.19 _____

3. 123.861 _____

4. 440.959 _____

E. Round these numbers to the nearest one.

1. 4.3 _____

2. 18.2 _____

F. Circle the winner of each race after rounding each person's time to the nearest tenth. If there is a tie, circle both answers.

Remember that in races the winner is the person with the smallest number—the fastest time.

Example: Jack 8.75 **Frank 8.73**

Rounded: Jack 8.8 Frank 8.7

Race 1 Phil – 12.62 Lois – 12.54

Race 2 Bob – 8.62 Brock – 8.56

Race 3 Mary – 9.74 Sylvia – 9.75

Race 4 Arlene – 10.07 Freda – 10.01

Which race, decided by the nearest tenth, do you think was an unfair way to decide the race? Why?

Lesson 13

Rounding to the Nearest Whole Number and Estimating Sums and Differences With Decimals



Warm-Up

Round each number to the nearest ten and then add the numbers. Do this in your head if possible.

Example: $23 + 32 + 17 \rightarrow 20 + 30 + 20 = 70$

1. $32 + 38 =$ _____

2. $27 + 32 + 12 =$ _____

3. $42 + 27 + 22 =$ _____

4. $68 + 29 + 45 =$ _____

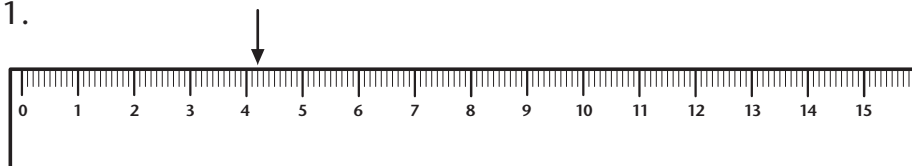
5. $18 + 17 + 22 + 37 =$ _____



It's Your Turn

- A. Look at the rulers below. Notice the arrow on the top of each one of them. Write the actual distance from the beginning of the ruler to the arrow. Now round off each distance to the nearest centimetre.

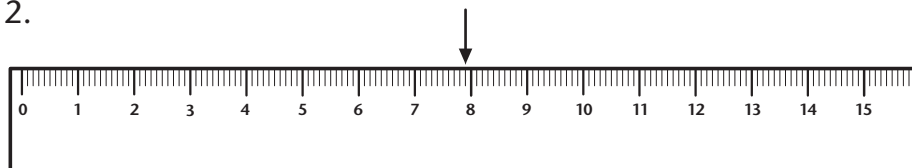
1.



centimetres

Actual: _____ cm Rounded: _____ cm

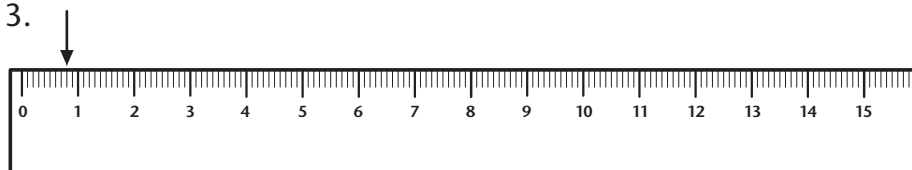
2.



centimetres

Actual: _____ cm Rounded: _____ cm

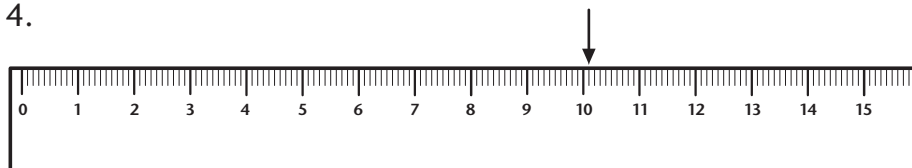
3.



centimetres

Actual: _____ cm Rounded: _____ cm

4.



centimetres

Actual: _____ cm Rounded: _____ cm

B. Round off each money amount to the nearest dollar.

1. \$7.70 _____

2. \$0.30 _____

3. \$4.50 _____

4. \$3.04 _____

C. Estimate the sums by rounding each number to the nearest whole number and then adding.

Example: $4.2 \rightarrow 4$
 $+5.6 \rightarrow +6$
 $\underline{\hspace{1cm}}$
10

1. $7.6 \rightarrow$
 $+9.1 \rightarrow$ _____

2. $12.8 \rightarrow$
 $+21.9 \rightarrow$ _____

3. $7.2 \rightarrow$
 $+16.1 \rightarrow$ _____

4. $48.7 \rightarrow$
 $+73.2 \rightarrow$ _____

- D. Estimate the differences by rounding each number to the nearest whole number and then subtracting.

Example: $16.3 \rightarrow 16$
 $\underline{-4.2} \rightarrow \underline{-4}$
 12

1. $12.3 \rightarrow$
 $\underline{-8.2} \rightarrow$ _____

2. $15.7 \rightarrow$
 $\underline{-11.2} \rightarrow$ _____

3. $51.4 \rightarrow$
 $\underline{-7.9} \rightarrow$ _____

4. $127.5 \rightarrow$
 $\underline{-64.4} \rightarrow$ _____



Challenge Yourself

Try comparing decimal fractions that are written to different place values. Remember you've learned that zero can be a place holder in decimal fractions.

Look at these examples.

0.730 0.71 0.728 0.70

You can easily compare these numbers to find which is greater or less by writing them all out to the thousandths place by adding zeros. Like this:

0.730 0.710 0.728 0.700

Now look from left to right to place the number in order from least to greatest.

0.700 0.710 0.728 0.730

Now it's your turn. Write each of the following decimals to the thousandths place by adding zeros where needed.

34.06 34.061 34.60 34.6

You can see that 34.60 and 34.6 have the same value and are greater than 34.06 and 34.061.

Remember to add zeros to help you answer the following sets of questions.

A. Circle the number in each group that has the greatest value.

- | | | |
|----------|---------|------------|
| 1. 0.291 | 2. 32.9 | 3. 767.998 |
| 0.29 | 32.09 | 767.989 |
| 0.295 | 33.1 | 689.99 |
| 0.3 | 33.00 | 768.09 |
| 0.099 | 32.909 | 768.1 |

B. Write $<$, $>$, or $=$ to complete each statement.

1. 45.677 ____ 45.6
2. 0.001 ____ 0.10
3. 23.009 ____ 23.09
4. 9.455 ____ 9.54

Lesson 14

Adding Decimal Fractions



Warm-Up

- A. Line up the following sets of decimal fractions so the decimal points are in a vertical (straight up and down) line. Use zeros as place holders if necessary.

1. 34.15 600 0.051 6.18 9.136

2. 481.2 13 619.51 0.002 1732

3. 14.900 6.84 0.05 182.13 72

B. Can you complete these questions in 1 minute? Ask an adult to time you.

$$\begin{array}{r} 1. \quad 2 \\ \quad +3 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 4 \\ \quad +5 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 6 \\ \quad +5 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 5 \\ \quad +8 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 8 \\ \quad +8 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 6 \\ \quad +4 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 10 \\ \quad +7 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 1 \\ \quad +4 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 5 \\ \quad +0 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 5 \\ \quad +5 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 3 \\ \quad +2 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 6 \\ \quad +7 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 4 \\ \quad +4 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 6 \\ \quad +6 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 5 \\ \quad +9 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 6 \\ \quad +2 \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 7 \\ \quad +8 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 3 \\ \quad +1 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 8 \\ \quad +9 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 7 \\ \quad +5 \\ \hline \end{array}$$

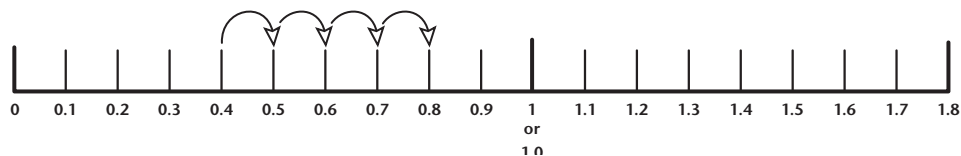
$$\begin{array}{r} 21. \quad 9 \\ \quad +9 \\ \hline \end{array}$$



It's Your Turn

A. Use the number line to help you find the sums.

Example: $0.4 + 0.4 = 0.8$



1. $0.2 + 0.4 = \underline{\hspace{2cm}}$ 2. $0.7 + 0.3 = \underline{\hspace{2cm}}$

3. $0.6 + 0.5 = \underline{\hspace{2cm}}$ 4. $0.8 + 0.9 = \underline{\hspace{2cm}}$

B. Add these questions.

1. $\begin{array}{r} 0.2 \\ +0.7 \\ \hline \end{array}$	2. $\begin{array}{r} 2.9 \\ +3.5 \\ \hline \end{array}$	3. $\begin{array}{r} 27.2 \\ +47.9 \\ \hline \end{array}$	4. $\begin{array}{r} 21.6 \\ 75.2 \\ +49.2 \\ \hline \end{array}$
---	---	---	---

C. Line up (align) the decimal points and then add each of the following questions.

1. $14.5 + 5.3$

2. $\$12.38 + \$1.89 + \$43.98$

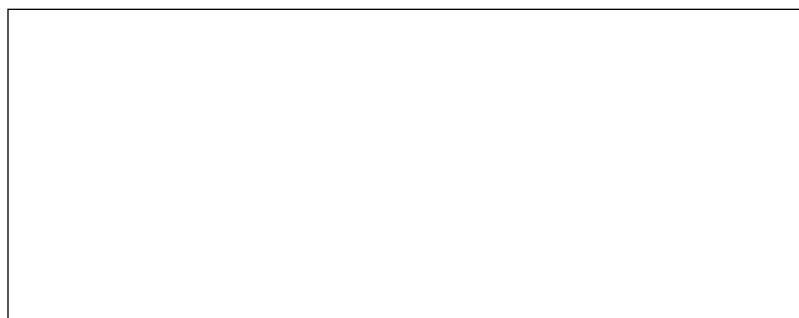
3. $6.2 + 14.6$

4. $8.403 + 12 + 3.98$

5. $33.9 + 41.2$

D. Solve each problem. Show all your work and then write a statement to answer each question.

1. Jenny jogged 6.2 km (kilometers) on Saturday and 4.8 km on Sunday. How far did she jog on the weekend?



Statement: _____

2. In a jumping contest the judges combined the best three jumps of each contestant. If Laurie had jumps of 1.3m, 1.6m, 1.7m, and 1.6m, what was her combined score?

Statement: _____



Challenge Yourself

Take out your calculator. Here are some activities to help you discover how decimal fractions are recorded on it.

When you enter numbers on a calculator, it is not necessary to press the 0 to the left of the decimal unless it is a whole number place holder (such as 40). The calculator does it for you.

- Press **.96** on your calculator. Remember, you don't need to press 0.96, just .96.
- Now add **one hundredth (0.01)** to .96. Press the equal sign.
- Your calculator should read **0.97**. Continue adding 0.01. Don't forget to press = and then + each time.

What do you notice when you reach **1.00**?

You will notice that your calculator probably reads 1. with no zeros.

Many calculators do not display end zeros in a decimal answer.

Try another number:

Press 23.248 on your calculator.

Now add one thousandth (.001)

Your calculator should show 23.249.

Continue adding .001.

What happens when you reach 23.250?

Your calculator should read 23.25 instead of 23.250.

Now use your calculator to add the following sets of decimal numbers.

1. $19.35 + 18.645 =$ _____

2. $84 + 0.03 + 16.81 =$ _____

3. $93.186 + 4 + 3.027 + 91.5 =$ _____

4. $86.3 + 19.85 + 4.27 + 5.007 =$ _____

Solve this problem.

Karli and her brother Barry entered their pumpkins in the Fall Fair. Karli's pumpkin weighed 13.512 kg. Barry's pumpkin weighed 9.7 kg. What were the combined weights of the 2 pumpkins?

Statement: _____

Lesson 15

Subtracting Decimal Fractions



Warm-Up

A. Can you answer these in one minute? Ask an adult to time you.

$$\begin{array}{r} 1. \quad 8 \\ \quad -5 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 7 \\ \quad -1 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 6 \\ \quad -6 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 10 \\ \quad -4 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 11 \\ \quad -7 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 14 \\ \quad -8 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 13 \\ \quad -9 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 15 \\ \quad -8 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 17 \\ \quad -9 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 14 \\ \quad -6 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 11 \\ \quad -5 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 10 \\ \quad -7 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 8 \\ \quad -0 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 12 \\ \quad -9 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 14 \\ \quad -9 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 12 \\ \quad -7 \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 15 \\ \quad -6 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 11 \\ \quad -6 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 16 \\ \quad -9 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 17 \\ \quad -8 \\ \hline \end{array}$$

$$\begin{array}{r} 21. \quad 18 \\ \quad -9 \\ \hline \end{array}$$

B. Review your regrouping skills by subtracting these whole numbers.

$$\begin{array}{r} 1. \quad 459 \\ -389 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 3964 \\ -1892 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 9733 \\ -4819 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 6051 \\ -3944 \\ \hline \end{array}$$

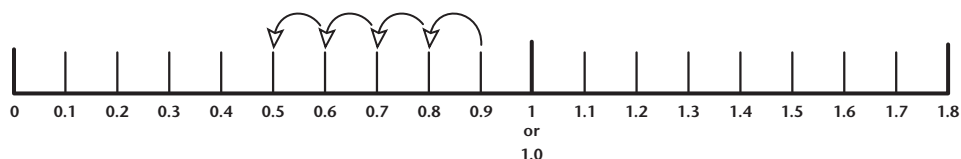
$$\begin{array}{r} 5. \quad 9205 \\ -3856 \\ \hline \end{array}$$



It's Your Turn

A. Use the number line to help you find the differences.

Example: $0.9 - 0.4 = 0.5$



$$1. \quad 0.5 - 0.2 = \underline{\hspace{2cm}} \quad 2. \quad 0.8 - 0.6 = \underline{\hspace{2cm}}$$

$$3. \quad 1.0 - 0.3 = \underline{\hspace{2cm}} \quad 4. \quad 1.4 - 0.9 = \underline{\hspace{2cm}}$$

$$5. \quad 1.7 - 1.2 = \underline{\hspace{2cm}} \quad 6. \quad 1.3 - 1.2 = \underline{\hspace{2cm}}$$

B. Subtract.

$$\begin{array}{r} 1. \quad 459 \\ -389 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 3964 \\ -1892 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 9733 \\ -4819 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 6051 \\ -3944 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 9205 \\ -3856 \\ \hline \end{array}$$

C. Align these numbers and find the differences.

1.
$$\$284.16 - \$103.79$$

2.
$$423.1 - 16.5$$

3.
$$18 - 9.37$$

D. Round each decimal to the nearest one and estimate the differences. Find the exact differences to check your estimates. Show your estimation.

1.
$$\begin{array}{r} 34.5 \\ -23.6 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 17.4 \\ -10.7 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 23.50 \\ -19.78 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 431.25 \\ -330.55 \\ \hline \end{array}$$



Challenge Yourself

A. Complete these questions using your calculator.

1. $6.902 - 4.500 =$ _____

2. $5.120 - 5.034 =$ _____

3. $\$954.89 - \$132.45 =$ _____

4. $98.756 - 0.510 =$ _____

B. Use your calculator to help solve these problems.

1. Al completed a 10 km run in 45.61 min. His brother Chris completed the same run in 43.19 min. Which brother won the race and by how much?

Statement: _____

2. Janice bought a sweater priced at \$37.89. She received a sale discount of \$6.78 and then was charged \$1.87 tax. What did Janice pay for the sweater?

Statement: _____

Lesson 16

Decimal Dollars



Warm-Up

Write the following money amounts in standard notation.

Example: One quarter less than \$12 = \$11.75

1. a dime more than \$5.50 _____
2. a cent less than \$10 _____
3. a quarter more than \$8.85 _____
4. double \$14.20 _____
5. 3 nickels more than \$7.70 _____
6. $\frac{1}{2}$ of \$16.50 _____



It's Your Turn

A. Write each money amount as a decimal. Use dollar signs in your answers. The first one is done for you.

- | | |
|---------------|---------------|
| 1. 58¢ \$0.58 | 2. 72¢ _____ |
| 3. 91¢ _____ | 4. 131¢ _____ |
| 5. 304¢ _____ | 6. 210¢ _____ |

B. Write each money amount using a dollar sign.

Example: 64¢ → \$0.64

1. 52¢ _____
2. one dollar and 16 cents _____
3. 12¢ _____
4. eight dollars and 6 cents _____
5. twelve dollars and nineteen cents _____
6. 17¢ _____
7. 7 dollars and twenty cents _____
8. 2¢ _____

C. Use $<$, $>$, or $=$ to compare each of the pairs of money amounts below.

1. \$9.01 _____ \$8.77
2. \$0.65 _____ \$0.60
3. \$12.09 _____ \$12.90
4. \$16.99 _____ \$17

D. Write the following money amounts as a decimal amount using a dollar sign.

Example: 3 dollars more than \$1.57 → \$4.57

1. 3 dimes more than 47¢ _____
2. 2 dollars less than \$2.50 _____
3. 8 dimes more than \$0.96 _____



Challenge Yourself

Use decimal numbers to count up to the thousandths place.

What do you notice in the following examples of counting using decimal numbers? (Three dots after a number means and so on, in the same manner.)

61.499 61.500 61.501 61.502 61.503 61.504 ...

0.002 0.003 0.004 0.005 0.006 0.007 0.008 0.009 0.010 ...

4.97 4.98 4.99 5.00 5.01 5.02 5.03 5.04 ...

You should have noticed that decimal fractions (the number written to the right of the decimal point) **continue in the same order as whole numbers**. The difference is that you are counting in tenths, hundredths, thousandths and so on.

When a decimal number reaches 10, or 100, or 1000 (tenths, one hundred hundredths, one thousand thousandths), it **forms a whole number**.

For example: 4.99 5.00 5.01 ...
 or
 0.998 0.999 1.000 ...

Try the following counting activities.

A. Keep the same decimal place value and write the decimal fraction that comes **before**.

1. _____ 14.70

2. _____ 2.300

3. _____ 0.050

4. _____ 0.600

B. Keep the same decimal place value and write the decimal fraction that comes after.

1. 6.99 _____

2. 21.099 _____

3. 0.999 _____

4. 35.19 _____

C. Count by hundredths.

1. 1.39 _____

2. 25.99 _____

D. Count by thousandths.

1. 9.999 _____

2. 0.349 _____

Lesson 17

Estimating Dollar Sums and Differences



Warm-Up

A. Round each number below to the nearest whole number.

1. 7.3 _____

2. 4.0 _____

3. 6.4 _____

4. 19.4 _____

5. 76.7 _____

6. 99.2 _____

7. 5.9 _____

8. 29.6 _____

9. 27.5 _____

10. 199.8 _____

B. Round each number below to the nearest ten.

1. 17 _____

2. 65 _____

3. 174 _____

4. 202 _____

5. 74 _____

6. 6 _____

7. 182 _____

8. 235 _____

**It's Your Turn**

A. Estimate the sums below by rounding each number to the nearest dollar and then adding.

$$\begin{array}{r} 1. \quad \$25.25 \rightarrow \\ \quad +49.95 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}} \qquad \begin{array}{r} 2. \quad \$99.95 \rightarrow \\ \quad +15.95 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3. \quad \$24.95 \rightarrow \\ \quad +24.15 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}} \qquad \begin{array}{r} 4. \quad \$149.00 \rightarrow \\ \quad +199.95 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}}$$

B. Estimate the differences below by rounding each number to the nearest dollar and subtracting.

$$\begin{array}{r} 1. \quad \$6.50 \rightarrow \\ \quad -2.10 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}} \qquad \begin{array}{r} 2. \quad \$10.95 \rightarrow \\ \quad -5.15 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3. \quad \$28.30 \rightarrow \\ \quad -13.80 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}} \qquad \begin{array}{r} 4. \quad \$11.65 \rightarrow \\ \quad -10.95 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}}$$

$$\begin{array}{r} 5. \quad \$8.62 \rightarrow \\ \quad -7.31 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}} \qquad \begin{array}{r} 6. \quad \$145.10 \rightarrow \\ \quad -144.95 \rightarrow \\ \hline \end{array} \rightarrow \underline{\hspace{2cm}}$$

- C. Estimate the sums below by rounding each number to the nearest \$10 and adding.

Example: $\$22.95 \rightarrow \20
 $51.05 \rightarrow 50$
 $\underline{+66.22} \rightarrow \underline{+70}$
 $\$140$

1. $\$72.95 \rightarrow$
 $16.95 \rightarrow$
 $\underline{+32.95} \rightarrow$ _____

2. $\$11.95 \rightarrow$
 $42.25 \rightarrow$
 $\underline{+67.15} \rightarrow$ _____

3. $\$80.95 + \$62.40 + \$74.60 =$

4. $\$103.45 + \$37.95 + \$128.50 =$

D. Solve each problem. Show all your work in the box and write a statement to answer each question.

1. The price of a basketball is reduced from \$39.99 to \$27.90. Estimate how much is saved when the basketball is bought at the sale price.

Statement: _____

2. Kelly has \$121.15 in the bank. She wants to buy a new mountain bike for \$299.95. Estimate how much more money Kelly needs in order to buy the bike.

Statement: _____



Challenge Yourself

Think of an answer for each set of directions.

1. Name two decimal fractions whose sum is approximately 7.
2. Name two decimal fractions whose sum is closer to 1 than 2.
3. Write two decimal fractions whose difference is approximately 4.
4. Write two decimal fractions whose difference is between 2 and 3, but closer to 3.

Lesson 18

Adding and Subtracting Dollars and Cents



Warm-Up

A. Line up each set of decimals and add.

1. $6.6 + 3.2 =$ _____

2. $9.5 + 7.2 =$ _____

3. $8.6 + 7.8 =$ _____

4. $6.7 + 3.2 + 9.5 =$ _____

5. $6 + 3.2 + 7.4 =$ _____

6. $78.6 + 7.2 + 15.9 =$ _____

B. Line up each set of decimals and subtract.

1. $7.2 - 5.1 =$ _____

2. $6.8 - 4.2 =$ _____

3. $14.7 - 10.5 =$ _____

4. $12.2 - 9.8 =$ _____

5. $24.6 - 18.8 =$ _____

6. $27.6 - 19.5 =$ _____



It's Your Turn

A. Add the following sums of money. Remember your dollar signs.

$$\begin{array}{r} 1. \quad \$1.24 \\ \quad +2.43 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad \$0.69 \\ \quad +3.75 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \$2.75 \\ \quad +4.75 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \$87.10 \\ \quad +15.25 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad \$25.25 \\ \quad +50.65 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad \$43.85 \\ \quad +42.15 \\ \hline \end{array}$$

B. Line up the dollar amounts and add.

$$1. \quad \$8.15 + \$2.20 = \underline{\hspace{2cm}}$$

$$2. \quad \$4.15 + \$15.65 = \underline{\hspace{2cm}}$$

$$3. \quad \$5.55 + \$6.45 = \underline{\hspace{2cm}}$$

$$4. \quad \$42.11 + \$99.50 = \underline{\hspace{2cm}}$$

$$5. \quad \$2.20 + \$7.15 + \$5.70 = \underline{\hspace{2cm}}$$

$$6. \quad \$42.15 + \$7.50 + \$65.15 = \underline{\hspace{2cm}}$$

C. Subtract. Remember your dollar signs.

$$\begin{array}{r} 1. \quad \$6.50 \\ \quad \underline{-3.25} \end{array}$$

$$\begin{array}{r} 2. \quad \$8.50 \\ \quad \underline{-1.70} \end{array}$$

$$\begin{array}{r} 3. \quad \$7.00 \\ \quad \underline{-2.99} \end{array}$$

$$\begin{array}{r} 4. \quad \$20.45 \\ \quad \underline{-14.95} \end{array}$$

D. Line up the dollar amounts and subtract.

$$1. \quad \$4.10 - \$1.05 =$$

$$2. \quad \$8.60 - \$4.90 =$$

**Challenge Yourself**

Solve each problem. Show all work and write a statement to answer each question.

1. John could only buy the three cheapest items from the selections below. What were the items, and how much did they cost altogether?



Statement: _____

2. Myrna had \$20. She wanted to buy 3 pairs of socks. Each pair cost \$6.99. Does Myrna have enough money? Explain your answer.

Statement: _____

3. Jill has 10 coins in her purse. The coins are quarters and dimes. The value of the coins is \$1.15. How many dimes does Jill have? Use the table to help solve the question.

Number of dimes	Value	Number of quarters	Value	Total

Lesson 19

Mixed Numbers—Ones, Tenths, Hundreds



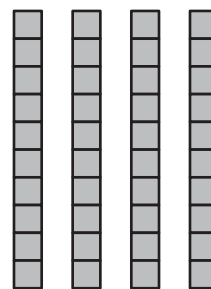
Warm-Up

Use $<$, $>$, or $=$ to compare each pair of numbers.

1. eleven hundredths 0.17
2. 0.55 ____ six tenth
3. 0.43 ____ 0.5
4. $\frac{80}{100}$ ____ $\frac{73}{100}$
5. 0.5 ____ 0.50
6. twenty-one hundredths ____ 0.2
7. ninety-five hundredths ____ 1
8. 8 tenths ____ seventy-seven hundredths

Remember!

$$0.4 = 0.40$$



**4 tenths =
4 hundredths**

**It's Your Turn**

A. Write each decimal number in standard form.

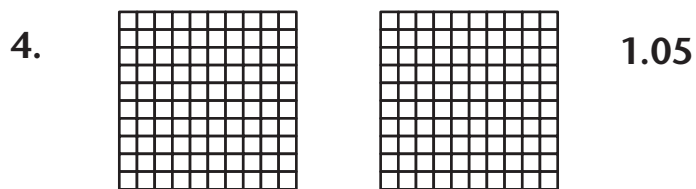
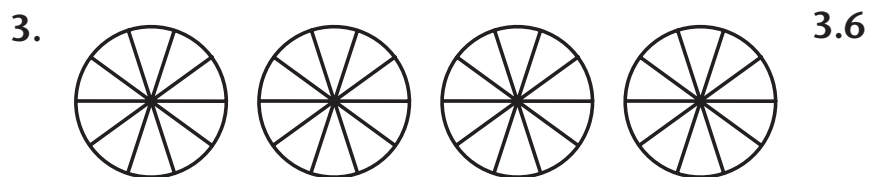
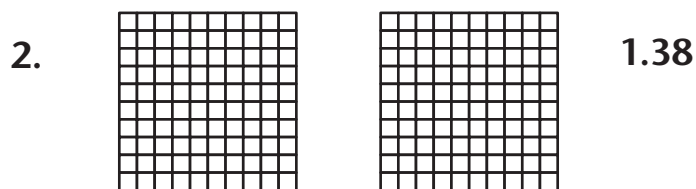
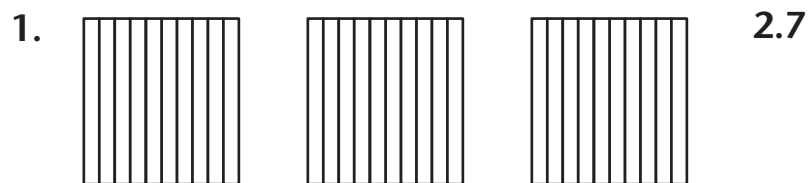
Example: six and 2 tenths 6.2

Remember!

Ones	Tenths	Hundredths

1. ten and eight tenths _____
2. five and thirteen hundredths _____
3. three and sixty hundredths _____
4. seven and thirty-five hundredths _____
5. eight and 9 tenths, 3 hundredths _____
6. five and seven tenths, seven hundredths _____

- B. Shade in the parts of each figure to match the decimal number beside it.



C. Write the decimal numbers in words.

Example: 6.05 six and five hundredths

1. 2.4 _____
2. 5.7 _____
3. 6.19 _____
4. 0.22 _____
5. 8.06 _____
6. 2.09 _____



Challenge Yourself

A. Compare each pair of decimals using $<$, $>$, or $=$.

1. 6.7 _____ 6.07
2. 8.5 _____ 8.53
3. 16.5 _____ 16.5
4. 20.9 _____ 20.89
5. 7.01 _____ 7.1

B. Count by Tenths

Example: From 9.6 to 10.4:
9.6, 9.7, 9.8, 9.9, 10.0, 10.1, 10.2, 10.3, 10.4

1. From 6.8 to 7.3 _____
2. From 19.6 to 20.1 _____
3. From 0.8 to 1.2 _____

Lesson 20

Renaming a Decimal Fraction as a Common Fraction



Warm-Up

Let's use pennies as numerators for common fractions and one dime (10 pennies) as the number for the denominator.

For example, if we have 3 pennies, we have 0.3 of one dime.

As a common fraction, this is written $\frac{3}{10}$.

Remember that the bottom number of the fraction is called the **denominator**. (In this case, the denominator is 10.)

The top number of the fraction is called the numerator. (In this case the numerator is 3.)

Write the following as **common** fractions:

1. 2 pennies of one dime =
2. 5 pennies of one dime =
3. 7 pennies of one dime =
4. 1 penny of one dime =



It's Your Turn

Rename the decimal fractions as common fractions. Remember that the place value of the decimal fraction determines the denominator as 10, 100, or 1000.

1. $0.5 =$

2. $0.03 =$

3. $0.21 =$

4. $0.04 =$

5. $0.135 =$

6. $0.052 =$

7. $0.003 =$

8. $0.156 =$

9. $0.2 =$

10. $0.349 =$

11. $0.3 =$

12. $0.12 =$

13. $0.02 =$

14. $0.7 =$

15. $0.001 =$

16. $0.123 =$

17. $0.075 =$

18. $0.335 =$



Challenge Yourself

Try this! You've learned to change decimal fractions into common fractions. Now you will learn how to reduce fractions to the lowest terms. When you do this the relationship between the numerator and denominator has to stay the same.

For example: 60 cents = \$0.60

As a common fraction this is written: $0.60 = \frac{60}{100}$

In that fraction both the numerator and denominator are large. You need to find a number that will divide evenly into both parts of this common fraction.

10 can be divided evenly into 60 and 100 to reduce the fraction.

Now the reduced fraction will read $\frac{6}{10}$.

Can $\frac{6}{10}$ be reduced any further? Is there one number that will divide evenly into both 6 and 10? Think about it.

2 will divide evenly into both 6 and 10.

6 divided by 2 = 3

10 divided by 2 = 5 so $\frac{6}{10} = \frac{3}{5}$

0.60 expressed as a common fraction in its lowest terms is:

$$\frac{60}{100} = \frac{6}{10} = \frac{3}{5}$$

Remember that a lowest terms fraction is one where the terms (numerator and denominator) represent smallest amounts. In the following example, 1 is reduced from 2 in the numerator and 5 is reduced from 10 in the denominator.

Example 1: $0.2 = \frac{2}{10}$ Divide both terms by 2.

$$0.2 = \frac{2}{10} = \frac{1}{5}$$

Example 2: $0.25 = \frac{25}{100}$ Divide both terms by 25

$$0.25 = \frac{25}{100} = \frac{1}{4}$$

You need to find the largest number that will divide evenly into both the numerator and the denominator.

Use your pennies to help regroup (reduce) the number in the numerator. Remember the number of groups you use to regroup your numerator must be the same number as you use to divide (regroup) your denominator.

Set up ten pennies (ten cents) as your denominator and use your pennies to reduce (regroup) the terms in the following. The first question is done for you.

$$1. \quad \frac{6}{10} = \frac{3}{5} \quad \frac{\text{O O O}}{\text{O O O O O}} = \frac{\text{O O O}}{\text{O O O O O}}$$

$$2. \quad \frac{8}{10} = \frac{4}{5}$$

$$3. \quad \frac{4}{10} = \frac{2}{5}$$

$$4. \quad \frac{5}{10} = \frac{1}{2}$$

Games

Your child may enjoy playing the following commercially produced games.

- Uno
- Yahtzee
- Racko
- Wizard
- Dominoes
- Skip Bo

You can also make up your own games or try the games that follow.

Fat Cat

Number of Players: 3 to 13. Best played by 4.



What You Need:

- a deck of cards

Cards:

Take out sets of four identical cards, with as many sets as there are players. Sets are made of 4 Kings, 4 threes, 4 nines, etc. Three players would use three sets (12 cards).

Deal:

Choose one player to shuffle the cards and deal four cards to each player, one at a time.

How to Play:

1. After a player has looked at his or her cards, she or he places one card face down, in front of the player to his or her left.
2. Each player picks up the card and adds it to her or his hand.
3. Continue to pass cards until one player has four cards of a set.
4. As soon as a player collects a set, he or she stops exchanging and puts one hand on the top of her or his head.
5. Other players are to stop play and also put their hands on their heads.

6. The last player to do this becomes the "Fat Cat", loses the game, and become the next dealer.

Scoring:

The first player to make a set	10 points
Last player "Fat Cat"	0 points
Remaining players	5 points

The first player to reach 50 points is the winner.

Ninety- Nine

Number of players: 3 to 5, but best for 4

Cards:

The cards are ranked from King down to Ace. Face cards count 10 each, ace 1, and other cards their face value.

Game Cards:

The 4, 9, 10 and King of each suit are known as Game Cards and have special jobs.

- A **four** played on any discard pile reverses the flow of play from clockwise to counterclockwise or vice versa, returning the play to the player who last played their card.
- A **nine** played at any time puts the total of the discard piles at 99 or, when played on a pile already totalling 99, maintains the total at 99.
- A **ten** reduces the count of the discard piles by 10.
- The **king** holds the count at ninety-nine and there is no change in the total.

Deal:

Three cards are dealt to each player, one at a time. The rest of the pack is placed face down in the center of the table, forming the stock pile. Each player is also given three chips, or three jelly beans, or three of some other small item.

How to Play:

1. The player to the right of the dealer starts by placing one of his or her three cards face up in front of him or herself, calling out the face value of that card. This is the starter card.
2. The player then draws a card from the stock to replace the card played. If the card is not picked up immediately, the player then only has two cards to play with.
3. The next player plays a card in front of him or herself, calling out the total face value of the two cards and then draws a card from the stock.
4. Each player in turn repeats this procedure, adding the value of his or her card to the cumulative total of the discard piles.
5. Game cards can be used at any time once play has started. Use the rules above to determine what those cards do.
6. The total of the cards in the individual discard piles cannot be increased beyond 99. A player who has no card or Game Card that can be played to reduce or maintain the total of 99 is forced to pass. He or she places a chip (or other item) in the kitty as a penalty.
7. To start the next hand the cards are gathered up, shuffled, and dealt by the person sitting to the right of the last dealer.
8. After three passes, a player may remain in the game and play "on honours" until forced to pass one last time. At this time the player is out of the game and forfeits all the items he or she has deposited in the kitty.
9. Play continues until only one player remains in the game. This player is the winner and collects the kitty.

Spades

This game has relatively easy bidding, play, and scoring.

Number of players: Four in two partnerships.

Cards:

A pack of 52 cards. They rank A (high), K, Q, J, 10, down to 2. Spades are trumps.

Deal:

Thirteen cards are dealt to each player, one at a time.

Bidding:

The game consists of thirteen tricks. Starting with the dealer, and moving to the left, each player in turn bids the number of tricks he or she expects to win. His or her bid is added to that of his or her partner to form the contract bid by that partnership.

It is not necessary for the total of the contracts bid by the two sides to equal 13 tricks. The total can be more or less.

A player who does not expect to win any tricks may bid “nil” and discard three cards from his hand, face down, in the center of the table. If his partner has already bid, the partner gives him three cards from his hand and picks up the three discards. If partner has not yet bid, he must wait until after he has bid to make the exchange.

Before looking at his hand a player may bid “double nil” and bonuses or penalties are doubled (explained below). As in bidding “nil”, he discards three cards for his partner and receives three in return.

If both partners bid “nil” or “double nil” there is no exchange.

How to Play:

1. The player at the left of the dealer leads first and may play any suit **except** Spades, which may not be led until the suit is “broken” by a spade being discarded on a trick. A player must follow suit if he or she is able. If a player has no cards in the suit led he or she can play a spade or trump card.
2. A trick is won by the highest card of the suit led or by the highest trump played.

Scoring:

The object of the game is to take at least as many tricks as bid by the side (partnership). If one partner has bid “nil”, his contract and his partner’s are scored separately and then the scores are combined.

Each trick bid counts 10 points for a side if the contract is made, against a side if the contract is set (not met). A side may have a minus score.

Overtricks (more tricks than bid) count 1 each.

A bid of “nil” receives a bonus of 100 points if made (no tricks are taken) or a penalty of 100 points if set (player is forced to take a trick or tricks).

The bonus or penalty for “double nil” is 200 points.

If both partners bid “nil” or “double nil” the side receives 200 points if both make their contract, but there is no score if either or both are set.

Game consists of 500 points. If the two sides both go over 500 points in the same hand, the one with the larger score is the winner.

Two-Hand Spades

Number of Players: Two

Cards:

A pack of 52 cards. They rank A (high), K, Q, J, 10, down to 2. Spades are trumps.

Deal:

1. The deal alternates between the two players. The cards are shuffled by the dealer and the deck is placed face down in the center of the table to form the stock.
2. The non-dealer starts by taking the top card from the stock. If he wants to keep it in his hand he looks at the second card from the stock and discards it face down beside the stock to begin the discard pile. He may discard the first card and keep the second card drawn.
3. Both players in turn discard one card and keep one card until the entire stock has been drawn. Each player will then have a hand of 13 cards and bidding and play proceed as in Spades. The discard pile is not used in the play.

Decimal Game



What You Need

- player cards (in Teaching Aids)
- 2 sets of 10 small cards numbered from 0 to 9 placed in a lunch-sized paper bag
- pencils
- a partner

How to Play:

1. Take out a player card for each player.
2. Take turns drawing a numbered card from the paper bag.

3. After each turn, write the digit in a box in Row 1 on your playercard. Return the card to the bag.
4. Continue until all 3 boxes in Row 1 are full on both player cards.
5. Compare your numbers. The player with the lesser number wins a point.
6. Play four more rounds.
7. The player with the highest score wins.
8. Play the game again. This time the player with the larger number wins a point.

Common Fractions and Decimals Concentration

You can make a concentration game by printing decimal fractions on one set of flashcards and common fractions on another set of flashcards. Just make sure there are not cards with the same common fraction or decimal fraction with the same answer.

Mix the cards and lay them face down.

Take turns trying to match the common fractions to the decimal fraction.

Fractions and Decimals

Answer Key

Pre-Test—Fractions and Decimals Answer Key

Part A

Answer the following questions.

1. What is a fraction?

A fraction is a part of a whole number or the whole set or group.

2. In a fraction what does the numerator tell?

The numerator is the top number. It represents the part of the whole or a part of the set or group.

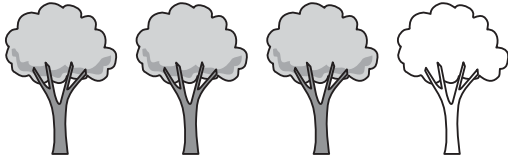
3. In a fraction what does the denominator tell?

The denominator is the bottom number. It represents the total number of equal parts.

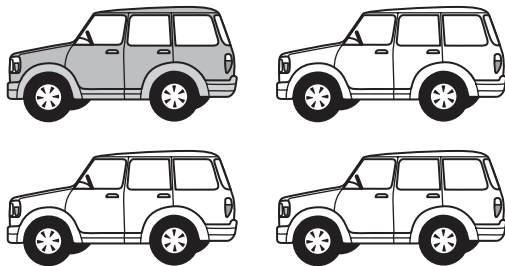
Part B

A. Shade each diagram so that each one shows the fraction below.

Example:



1.



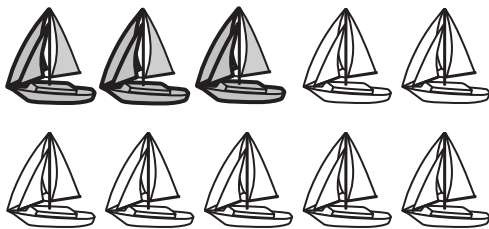
$\frac{1}{4}$ of the cars

2.



$\frac{4}{8}$ of the shoes

3.



three tenths of the boats

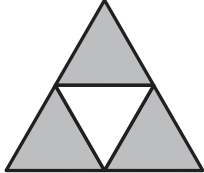
4.

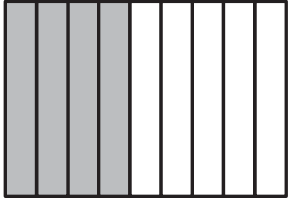


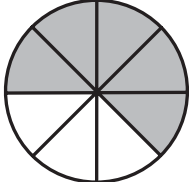
two fifths of the balls

B. Write a fraction for each of the shaded parts in each shape.

Example:  $\frac{5}{8}$

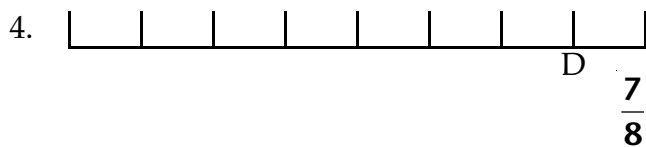
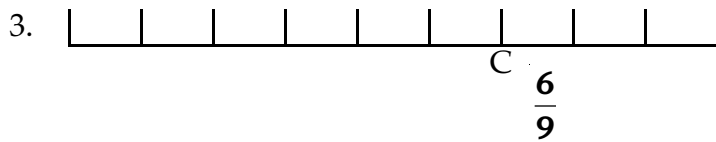
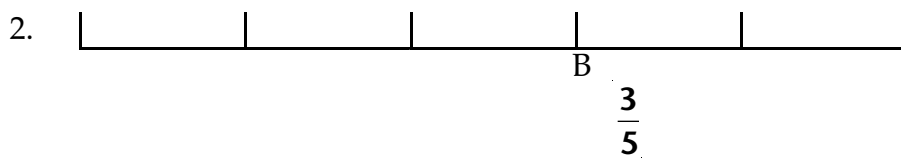
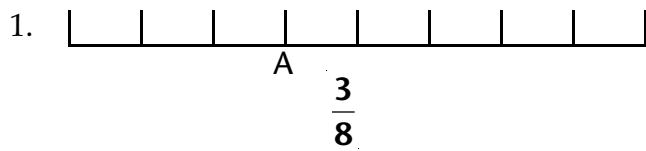
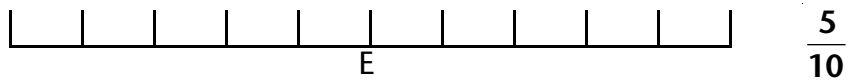
1.  $\frac{3}{4}$

2.  $\frac{4}{9}$

3.  $\frac{5}{8}$

C. Write the fraction that represents each of the lettered points on each number line.

Example:



These skills are covered in Lessons 1 and 2.

Part C

A. Write the fractions for the following.

Example: If the numerator is 3 and the denominator is 8: $\frac{3}{8}$

a. If the numerator is 2 and the denominator is 4. $\frac{2}{4}$

b. If the numerator is 1 and the denominator is 6. $\frac{1}{6}$

c. If the denominator is 9 and the numerator is 7. $\frac{7}{9}$

d. If the denominator is 7 and the numerator is 6. $\frac{6}{7}$

B. Order the fraction in each line from the least to the greatest.

Example: $\frac{11}{12}, \frac{8}{12}, \frac{9}{12}, \frac{10}{12}, \frac{3}{12}$

$\frac{3}{12}, \frac{8}{12}, \frac{9}{12}, \frac{10}{12}, \frac{11}{12}$

a. $\frac{7}{8}, \frac{2}{8}, \frac{4}{8}, \frac{8}{8}, \frac{6}{8}$ $\frac{2}{8}, \frac{4}{8}, \frac{6}{8}, \frac{7}{8}, \frac{8}{8}$

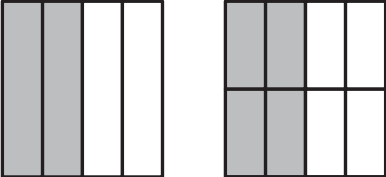
b. $\frac{6}{10}, \frac{10}{10}, \frac{4}{10}, \frac{8}{10}$ $\frac{2}{10}, \frac{4}{10}, \frac{6}{10}, \frac{8}{10}, \frac{10}{10}$

c. $\frac{5}{7}, \frac{2}{7}, \frac{6}{7}, \frac{1}{7}, \frac{7}{7}, \frac{4}{7}$ $\frac{1}{7}, \frac{2}{7}, \frac{4}{7}, \frac{5}{7}, \frac{6}{7}, \frac{7}{7}$

Part D

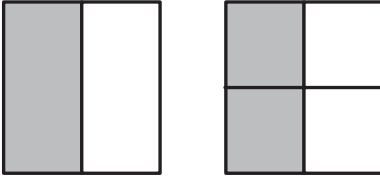
A. Complete the equivalent fractions by writing each fraction below the diagram.

Example:



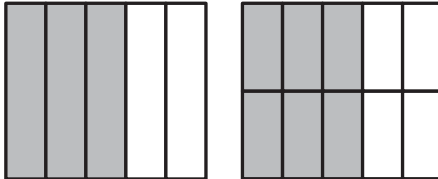
$$\frac{1}{2} = \frac{4}{8}$$

1.



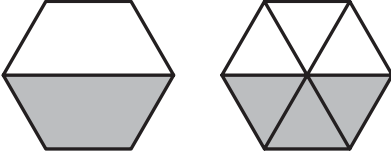
$$\frac{1}{2} = \frac{2}{4}$$

2.



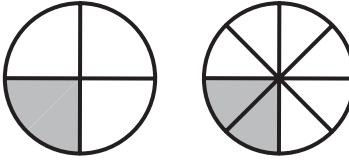
$$\frac{3}{5} = \frac{6}{10}$$

3.



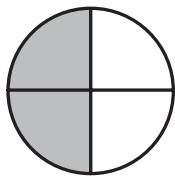
$$\frac{1}{2} = \frac{3}{6}$$

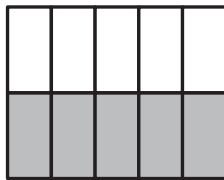
4.

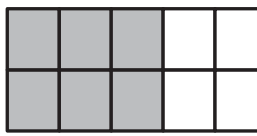


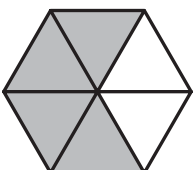
$$\frac{1}{4} = \frac{2}{8}$$

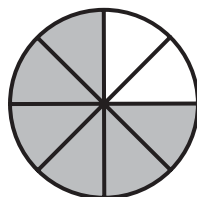
B. Write 2 equivalent fractions for the shaded parts of each diagram.

Example:  $\frac{2}{4} = \frac{1}{2}$

1. 
 $\frac{5}{10} = \frac{1}{2}$

2. 
 $\frac{6}{10} = \frac{3}{5}$

3. 
 $\frac{4}{6} = \frac{2}{3}$

4. 
 $\frac{6}{8} = \frac{3}{4}$

C. Using $<$, $>$, or $=$ compare each set of fractions.

Example: $\frac{3}{6} < \frac{5}{6}$ $\frac{9}{10} > \frac{4}{10}$ $\frac{3}{3} = \frac{3}{3}$

1. $\frac{7}{10} > \frac{5}{10}$

2. $\frac{1}{5} = \frac{1}{5}$

3. $\frac{1}{3} < \frac{2}{3}$

4. $\frac{6}{8} < \frac{7}{8}$

5. $\frac{3}{5} < \frac{4}{5}$

6. $\frac{2}{2} > \frac{1}{2}$

Part E

Solve the following problems.

1. John gave $\frac{3}{5}$ of his car collection to Jim. What fraction of the car collection did John still have?

$$\frac{2}{5}$$

2. Jill spent $\frac{4}{10}$ of a dollar. What fraction of the dollar did she have left?

$$\frac{6}{10} \text{ or } \frac{3}{5}$$

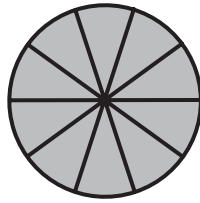
3. Three people ate $\frac{2}{3}$ of a pizza each? How many pizzas did they have altogether?

$$2$$

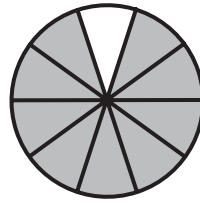
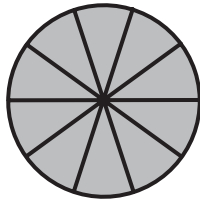
These skills are covered in Lessons 3 and 4.

Part F

A. Write a decimal fraction and a common fraction for each of the shaded parts.



2.9



$2\frac{9}{10}$

1.



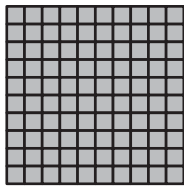
3.1



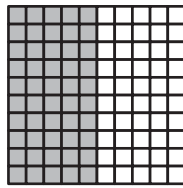
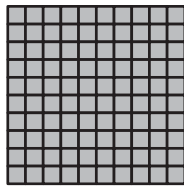
$3\frac{1}{10}$



2.

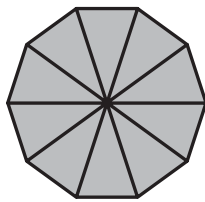


2.50

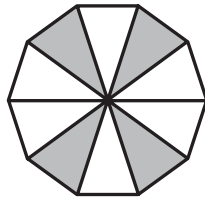


$2\frac{50}{100}$

3.



1.4



$1\frac{4}{10}$

B. Write equivalent decimal numbers for each of the following.

1. Show as tenths.

0.6

4.3

2. Show as hundredths.

47.60

0.80

3. Show as thousandths.

0.070

6.400

Part G

A. Count by tenths.

Example: From 1.7 to 2.5

1.7, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5

1. From 0.8 to 1.4: **0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4**

2. From 1.6 to 2.1: **1.6, 1.7, 1.8, 1.9, 2.0, 2.1**

3. From 2.7 to 3.4: **2.7, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3, 3.4**

B. Write each number as a decimal in standard form.

five and two tenths **5.2**

seven tenths **.7**

nine hundredths **.09**

C. Write the underlined digit as a decimal and as a fraction.

14.76 **0.06** $\frac{6}{100}$

5.35 **0.3** $\frac{3}{10}$

32.08 **0.0** $\frac{0}{0}$

D. Write the value of each underlined digit.

36.72 **6**

15.69 **0.6** $\frac{6}{10}$

8.07 **0.07** $\frac{7}{100}$

E. Use $>$, $<$, or $=$ to compare each pair of decimals.

1. $6.8 > 6.08$

2. $8.50 > 8.45$

3. $0.33 = 0.330$

4. $14.01 > 14.00$

5. $20.015 < 20.106$

F. Circle the number that has the greatest value.

2.904

2.9

2.899

2.90

2.09

These skills are covered in Lessons 9 and 10.

Part H

A. Round each decimal to the nearest tenth.

2.44

2.4

8.65

8.7

20.07

20.1

11.02

11.0 or 11

15.88

15.9

B. Round these numbers to the nearest one.

7.9

8

16.31

16

17.843

18

These skills are covered in Lesson 12.

Part J

A. Write each money amount using a dollar sign.

8¢ **\$0.08**

75¢ **\$0.75**

three dollars and 25 cents **\$3.25**

sixty dollars and five cents **\$60.05**

B. Counting decimals. Write the decimal fraction that comes **before**.

1. **15.59** 15.60

2. **7.399** 7.400

3. **0.029** 0.030

C. Counting decimals. Write the decimal fraction that come **after**.

1. 8.99 **9.00**

2. 46.099 **46.100**

3. 38.39 **38.40**

These skills are covered in Lesson 16.

Part I

A. Round each decimal number to the nearest whole number.

5.2	5
17.9	18
16.1	16
\$7.25	\$7
44.06	44
75.88	76
26.9	27
\$18.70	\$19

B. Estimate the sums by rounding each number to the nearest whole number then adding.

1.	19.5	\rightarrow	20	2.	123.8	\rightarrow	124
	$+18.6$	\rightarrow	$+19$		$+81.5$	\rightarrow	$+82$
			39				206

C. Estimate the differences by rounding each number to the nearest whole number and then subtracting.

1.	77.6	\rightarrow	78	2.	419.5	\rightarrow	420
	-2.9	\rightarrow	-3		-223.8	\rightarrow	-224
			75				196

These skills are covered in Lesson 13.

Part K

A. Add.

1. $0.7 + 0.4 = 1.1$

2. $0.6 + 0.9 = 1.5$

3.
$$\begin{array}{r} 8.7 \\ + 9.6 \\ \hline 18.3 \end{array}$$

4.
$$\begin{array}{r} 6.3 \\ + 14.5 \\ \hline 20.8 \end{array}$$

B. Line up the decimal points and then add.

1. $2.1 + 3.7 + 6.2 =$

2. $22.6 + 30.5 + 21.8 =$

3. $0.329 + 2.90 + 90.3 + 1.894 =$

4. $345 + 0.1 + 0.05 + 6.335 =$

1.	$\begin{array}{r} 2.1 \\ 3.7 \\ \underline{6.2} \\ 12.0 \end{array}$	2.	$\begin{array}{r} 22.6 \\ 30.5 \\ \underline{21.8} \\ 74.9 \end{array}$	3.	$\begin{array}{r} 0.329 \\ 2.90 \\ 90.3 \\ \underline{1.894} \\ 95.423 \end{array}$	4.	$\begin{array}{r} 345.0 \\ 0.1 \\ 0.05 \\ \underline{6.335} \\ 351.485 \end{array}$
----	--	----	---	----	---	----	---

These skills are covered in Lesson 14.

Part L

A. Subtract these questions.

$$\begin{array}{r} 1. \quad 3.5 \\ \quad \underline{-1.6} \\ \quad \quad 1.9 \end{array}$$

$$\begin{array}{r} 2. \quad 2.3 \\ \quad \underline{-1.9} \\ \quad \quad 0.4 \end{array}$$

$$\begin{array}{r} 3. \quad 7.2 \\ \quad \underline{-6.9} \\ \quad \quad 0.3 \end{array}$$

$$\begin{array}{r} 4. \quad 75.6 \\ \quad \underline{-66.4} \\ \quad \quad 9.2 \end{array}$$

$$\begin{array}{r} 5. \quad 300.5 \\ \quad \underline{-172.6} \\ \quad \quad 127.9 \end{array}$$

B. Line up the decimal points and then subtract.

$$1. \quad 224.5 - 77.2 =$$

$$2. \quad 111.1 - 44.4 =$$

$$3. \quad 83.19 - 44 =$$

$$4. \quad 6.763 - 5.29 =$$

$$\begin{array}{r} 1. \quad 224.5 \\ \quad \underline{-77.2} \\ \quad 147.3 \end{array}$$

$$\begin{array}{r} 2. \quad 111.1 \\ \quad \underline{-44.4} \\ \quad 66.7 \end{array}$$

$$\begin{array}{r} 3. \quad 83.19 \\ \quad \underline{-44.00} \\ \quad 39.19 \end{array}$$

$$\begin{array}{r} 4. \quad 6.763 \\ \quad \underline{-5.290} \\ \quad 1.473 \end{array}$$

These skills are covered in Lesson 15.

Part M

A. Estimate the sums by rounding each number to the nearest dollar and add.

$$\begin{array}{r} 1. \quad \$9.05 \quad \rightarrow \quad \$9 \\ \quad \underline{+89.90} \quad \rightarrow \quad \underline{+90} \\ \quad \quad \quad \rightarrow \quad \$99 \end{array} \qquad \begin{array}{r} 2. \quad \$16.99 \quad \rightarrow \quad \$17 \\ \quad \underline{+22.95} \quad \rightarrow \quad \underline{+23} \\ \quad \quad \quad \rightarrow \quad \$40 \end{array}$$

$$\begin{array}{r} 3. \quad \$87.50 \quad \rightarrow \quad \$88 \\ \quad \quad 67.90 \quad \rightarrow \quad 68 \\ \quad \underline{+94.20} \quad \rightarrow \quad 94 \\ \quad \quad \quad \rightarrow \quad \$250 \end{array}$$

B. Estimate the differences by rounding each number to the nearest dollar and subtract.

$$\begin{array}{r} 1. \quad \$65.50 \quad \rightarrow \quad \$66 \\ \quad \underline{-49.20} \quad \rightarrow \quad \underline{-49} \\ \quad \quad \quad \rightarrow \quad \$17 \end{array} \qquad \begin{array}{r} 2. \quad \$20.10 \quad \rightarrow \quad \$20 \\ \quad \underline{-9.75} \quad \rightarrow \quad \underline{-10} \\ \quad \quad \quad \rightarrow \quad \$10 \end{array}$$

$$\begin{array}{r} 3. \quad \$52.40 \quad \rightarrow \quad 52 \\ \quad \underline{-21.80} \quad \rightarrow \quad \underline{-22} \\ \quad \quad \quad \rightarrow \quad \$30 \end{array}$$

C. Add the following sums of money.

$$\begin{array}{r} 1. \quad \$415.45 \\ \quad \underline{+284.55} \\ \quad \$700.00 \end{array} \qquad \begin{array}{r} 2. \quad \$248.15 \\ \quad \quad \underline{+ 6.20} \\ \quad \$254.35 \end{array} \qquad \begin{array}{r} 3. \quad \$470.22 \\ \quad \quad \underline{+16.79} \\ \quad \$487.01 \end{array}$$

D. Subtract.

$$\begin{array}{r} 1. \quad \$85.50 \\ \quad \underline{-4.90} \\ \quad \$80.60 \end{array}$$

$$\begin{array}{r} 2. \quad \$107.80 \\ \quad \underline{-19.95} \\ \quad \$87.85 \end{array}$$

$$\begin{array}{r} 3. \quad \$15.50 \\ \quad \underline{-9.99} \\ \quad \$5.51 \end{array}$$

$$\begin{array}{r} 4. \quad \$20.00 \\ \quad \underline{-16.95} \\ \quad \$3.05 \end{array}$$

E. Write these decimal fractions as common fractions.

$$1. \quad 0.24 = \frac{24}{100}$$

$$2. \quad 0.3 = \frac{3}{10}$$

$$3. \quad 0.113 = \frac{113}{1000}$$

$$4. \quad 0.45 = \frac{45}{100}$$

$$5. \quad 0.008 = \frac{8}{1000}$$

$$6. \quad 0.12 = \frac{12}{100}$$

These skills are covered in Lessons 17–20.

Answer Key

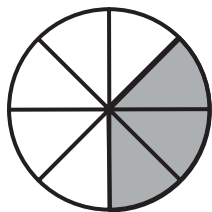


Lesson 1 Representing Fractions—Parts of a Whole

It's Your Turn

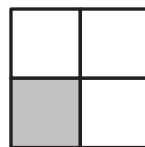
A.

1.



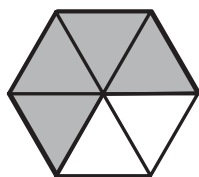
$$\frac{3}{8}$$

2.



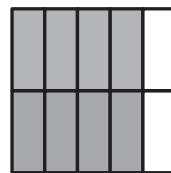
$$\frac{1}{4}$$

3.



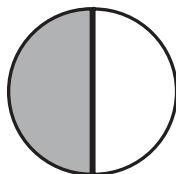
$$\frac{4}{6}$$

4.



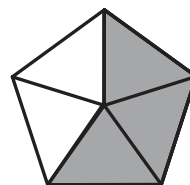
$$\frac{8}{10}$$

5.



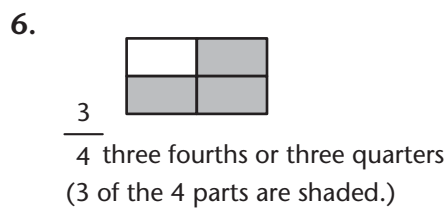
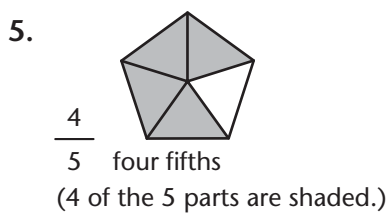
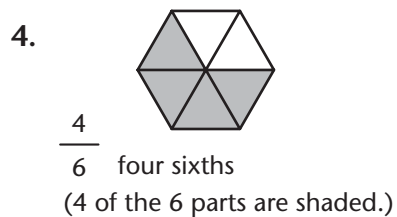
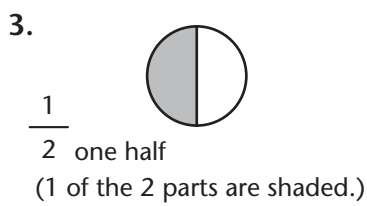
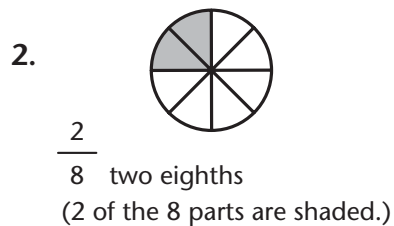
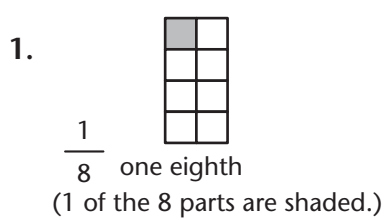
$$\frac{1}{2}$$

6.



$$\frac{3}{5}$$

B.



C.

1. $\frac{3}{4}$ three fourths
or three quarters

2. $\frac{2}{3}$ two thirds

3. $\frac{1}{2}$ one half

4. $\frac{5}{8}$ five eighths

5. $\frac{2}{5}$ two fifths

6. $\frac{9}{10}$ nine tenths

D.

1. $\frac{1}{4}$

2. $\frac{3}{8}$

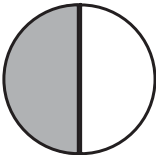
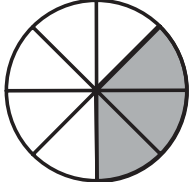
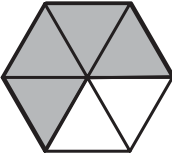

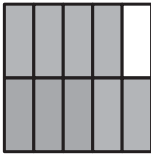
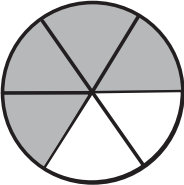
3. $\frac{5}{6}$

4. $\frac{1}{3}$

5. $\frac{1}{2}$

6. $\frac{6}{10}$






Challenge Yourself

- A.
1. 
 2. 
 3. 
 4. 
 5. 
 6. 
- B.
1. $\frac{1}{4}$ one fourth
or one quarter
 2. $\frac{7}{10}$ seven tenths
 3. $\frac{2}{5}$ two fifths
 4. $\frac{3}{6}$ three sixths
or one half



Lesson 2 Fractions of a Set

Warm- Up

- A.
1. $\frac{1}{4}$
 2. $\frac{3}{5}$
 3. $\frac{3}{8}$
 4. $\frac{3}{4}$
- B.
1. 
 2. 
 3. 
 4. 
 5. 

It's Your Turn**Part A**

1. a. $\frac{6}{10}$ b. $\frac{8}{10}$ c. $\frac{2}{10}$

2. a. $\frac{7}{8}$ b. $\frac{2}{8}$ c. $\frac{4}{8}$

Part B

1. $\frac{4}{10}$ 2. $\frac{2}{10}$ 3. $\frac{1}{10}$ 4. $\frac{3}{10}$ 5. $\frac{4}{10}$

Challenge Yourself

1. $\frac{6}{10}$ 2. $\frac{4}{10}$ 3. N; $\frac{3}{10}$ 4. $\frac{4}{10}$ 5. $\frac{7}{10}$

**Lesson 3**
Equivalent Fractions**Warm-Up**

1. $\frac{7}{20}$ 2. $\frac{12}{20}$ 3. $\frac{4}{15}$ 4. $\frac{5}{10}$ 5. $\frac{3}{8}$

It's Your Turn

A. 1. $\frac{2}{4} = \frac{4}{8}$ 2. $\frac{4}{5} = \frac{8}{10}$
3. $\frac{3}{6} = \frac{1}{2}$ 4. $\frac{1}{4} = \frac{2}{8}$

B. 1. $\frac{5}{10} = \frac{1}{2}$ 2. $\frac{3}{4} = \frac{6}{8}$
3. $\frac{1}{2} = \frac{2}{4}$ 4. $\frac{2}{3} = \frac{4}{6}$

Challenge Yourself

1. $\frac{4}{5} = \frac{8}{10}$

2. $\frac{2}{4} = \frac{4}{8}$

3. $\frac{6}{10} = \frac{3}{5}$

4. $\frac{3}{6} = \frac{1}{2}$

5. $\frac{6}{12} = \frac{2}{4}$

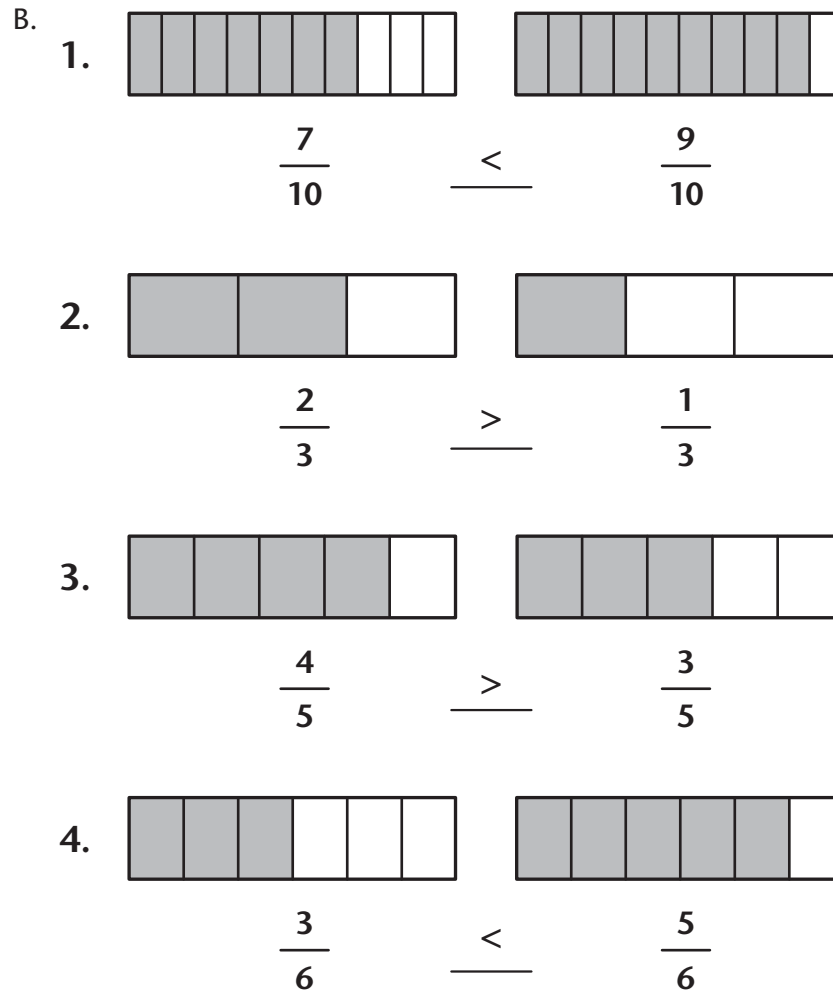
**Lesson 4**
Comparing Fractions

Warm-Up

1. >
2. <
3. <
4. =
5. >

It's Your Turn

- | | | | | |
|----|----|---|----|---|
| A. | 1. | > | 2. | > |
| | 3. | < | 4. | < |
| | 5. | > | 6. | > |
| | 7. | < | 8. | > |



Challenge Yourself

1. $\frac{4}{4} - \frac{3}{4} = \frac{1}{4}$
2. $\frac{10}{10} - \frac{3}{10} = \frac{7}{10}$
3. $\frac{10}{10} - \frac{8}{10} = \frac{2}{10}$, 20¢
4. $\frac{2}{2} - \frac{1}{2} = \frac{1}{2}$



Lesson 5 Review

It's Your Turn



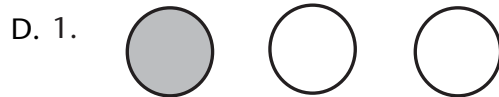
B. 1. one half

2. three quarters

3. eight tenths

4. six eighths

C. 1. $\frac{1}{8}$ 2. $\frac{2}{3}$ 3. $\frac{5}{6}$ 4. $\frac{3}{4}$



E. 1. $\frac{6}{8} = \frac{3}{4}$

2. $\frac{4}{8} = \frac{1}{2}$

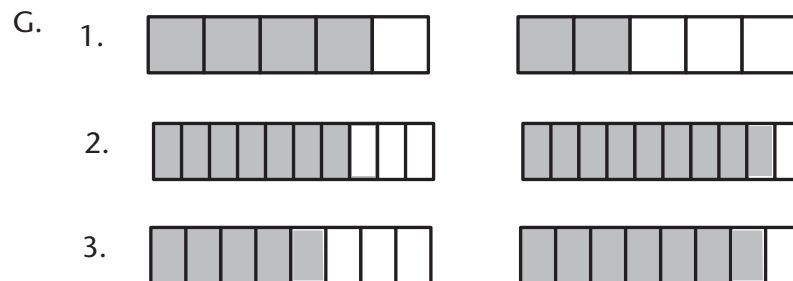
3. $\frac{2}{6} = \frac{1}{3}$

4. $\frac{4}{6} = \frac{2}{3}$

5. $\frac{6}{12} = \frac{1}{2}$

6. $\frac{2}{10} = \frac{1}{5}$

- F.
- | | |
|---------------------------------|--------------------------------|
| 1. $\frac{3}{5} = \frac{6}{10}$ | 2. $\frac{1}{2} = \frac{4}{8}$ |
| 3. $\frac{4}{6} = \frac{2}{3}$ | 4. $\frac{1}{4} = \frac{2}{8}$ |
| 5. $\frac{8}{10} = \frac{4}{5}$ | 6. $\frac{3}{6} = \frac{1}{2}$ |



- H.
- | | |
|----------------------------------|--------------------------------|
| 1. $\frac{7}{10} < \frac{9}{10}$ | 2. $\frac{6}{8} > \frac{4}{8}$ |
| 3. $\frac{0}{4} < \frac{3}{4}$ | 4. $\frac{9}{9} > \frac{1}{9}$ |



Lesson 6 Introducing Decimals

Warm- Up

- | | |
|---------------------|-------------------|
| 1. $\frac{3}{5}$ | 2. $\frac{1}{2}$ |
| 3. $\frac{9}{10}$ | 4. $\frac{1}{8}$ |
| 5. $\frac{5}{10}$ | 6. $\frac{1}{5}$ |
| 7. $\frac{2}{3}$ | 8. $\frac{2}{6}$ |
| 9. $\frac{70}{100}$ | 10. $\frac{7}{8}$ |

It's Your Turn

- A.
- | | | | |
|----|---------------------|----|---------------------|
| 1. | $\frac{7}{10}, 0.7$ | 2. | $\frac{8}{10}, 0.8$ |
| 3. | $\frac{7}{10}, 0.7$ | 4. | $\frac{3}{10}, 0.3$ |
| 5. | $\frac{6}{10}, 0.6$ | 6. | $\frac{9}{10}, 0.9$ |
- B.
- | | | | |
|----|----------------|----|----------------|
| 1. | $\frac{1}{10}$ | 2. | $\frac{1}{10}$ |
| 3. | $\frac{7}{10}$ | 4. | $\frac{5}{10}$ |
| 5. | $\frac{9}{10}$ | 6. | $\frac{8}{10}$ |
- C.
- 0.8
 - 0.2
 - 0.3
 - 0.9
 - 0.6
 - 0.5

Challenge Yourself

- 0.3 cm
- 0.5 cm
- 0.8 cm
- 0.9 cm
- 1.0 cm or $\frac{10}{10}$ cm



Lesson 7

More About Decimals

Warm Up

- A.
1. 7605
 2. 40 200
 3. 923
 4. 8001
 5. 68 000
- B.
1. forty-two hundred or four thousand two hundred
 2. sixty-nine thousand
 3. five hundred seven
 4. thirty thousand
 5. four hundred and six thousand

It's Your Turn

- A.
1. 0.47
 2. 1.03
 3. 0.304
 4. 0.006
- B.
1. **tenths**—The number of parts is written on the first place to the right of the decimal point.
 2. **hundredths**—The number of parts is written on the *second* place to the right of the decimal point.
 3. **thousandths**—The number of parts is written on the third place to the right of the decimal point.
- C.
1. 0.8
 2. 600.09
 3. 0.002
 4. 7.51
 5. 0.044
 6. 500.007

- D.
1. eight tenths
 2. three hundredths
 3. four thousandths
 4. five and thirty-six hundredths
 5. two thousands and one hundred and fifty thousandths or fifteen hundredths



Lesson 8 Making Equivalent Decimals

Warm Up

- | | |
|------------|-----------|
| 1. 30 | 2. 70 000 |
| 3. 90 000 | 4. 8000 |
| 5. 61 000 | 6. 20 000 |
| 7. 191 000 | 8. 39 100 |

It's Your Turn

- A.
1. 0.3
 2. 0.2
 3. 5.6
 4. 0.9
 5. 3498.0
 6. 679.0
- B.
1. 0.30
 2. 0.90
 3. 0.89
 4. 67.80
 5. 19.20
 6. 3891.00
- C.
1. 0.030
 2. 0.900
 3. 0.070
 4. 43.100
 5. 391.000
 6. 4.200

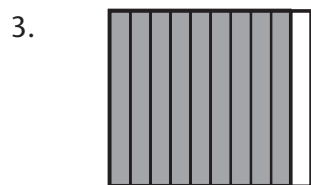
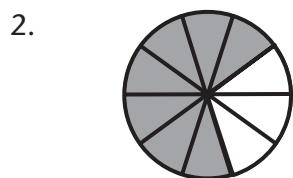
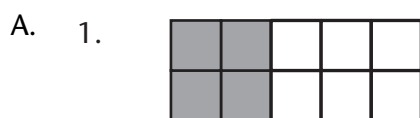
Challenge Yourself

- A. 1. 0.46 4. 2.70
 2. 4.02 5. 0.22
 3. 0.72 6. 7.60
- B. No – appropriate picture to show they are the same.



Lesson 9 Fractions and Decimals Greater than 1

Warm-Up



- B. 1. 0.6
 2. 0.8
 3. 0.3
 4. 0.4
 5. 0.1
 6. 0.7
 7. 0.0 or 0
 8. 0.9

It's Your Turn

Part A

- A. 1. 1.7 $1\frac{7}{10}$ 2. 2.4 $2\frac{4}{10}$
 3. 5.3 $5\frac{3}{10}$ 4. 1.2 $1\frac{2}{10}$

Part B

- A. 1. four and one tenth
2. eleven and nine tenths
3. ten and two tenths
4. one and five tenths
5. five and eight tenths
- B. 1. 1 ones and 7 tenths
2. 2 ones and 1 tenth
3. 3 ones and 2 tenths
- C. 1. 0.4, 0.5, 0.6, 0.7, 0.8, 0.9
2. 0.9, 1.0, 1.1, 1.2, 1.3, 1.4
3. 1.9, 2.0, 2.1, 2.2, 2.3



Lesson 10 Comparing Decimal Fractions Using Place Value

Warm Up

1. $3 = 30$
2. $3 = 300$
3. $4 = 4000$
4. $7 = 7000$
5. $1 = 100\ 000$
6. $5 = 50\ 000$
7. $0 = 0$
8. $2 = 2\ 000\ 000$

It's Your Turn

- A. 1. 4.7
2. 11.42
3. 0.07
4. 0.9

- B. 1. $6 = 0.06$ and $\frac{6}{100}$
 2. $2 = 0.2$ and $\frac{2}{10}$
 3. $5 = 0.5$ and $\frac{5}{100}$
 4. $0 = 0$

C. 1.

Tens	Ones	Tenths	Hundredths
	8	.	4
			5

2.

Tens	Ones	Tenths	Hundredths
1	2	.	0
			7

3.

Tens	Ones	Tenths	Hundredths
	9	.	6
			0

- D. 1. 7
 2. $\frac{7}{10}$ or 0.7
 3. $\frac{9}{100}$ or 0.09
 4. 4
 5. 0
 6. 40

- E. 1. $0.21 > 0.12$
 2. $3.16 < 4.99$
 3. $17.21 > 7.89$
 4. $13.01 > 13.00$
 5. $619.444 < 691.444$
 6. $99.002 > 98.763$
 7. $11.310 > 11.301$
 8. $5.005 < 5.050$
 9. $783.90 < 784.90$
 10. $20.016 < 20.106$

Challenge Yourself

- A. 1. 7.7 2. 3.40
 3. 17.80 4. 2.30
 5. 19.9 6. 25.6
- B. 1. 0.034 0.039 0.043 0.304 0.344
 2. 390.99 391.02 391.22 392.01 392.21
- C. 1. 178.41 79.41 79.14 79.07 77.04
 2. 0.200 0.120 0.012 0.002 0.001



Lesson 11 Ordering Decimals

Warm Up

Number Common Fraction Decimal Fraction

1. $\frac{12}{10}$ $1\frac{2}{10}$ 1.2
2. $\frac{23}{10}$ $2\frac{3}{10}$ 2.3
3. $\frac{38}{10}$ $3\frac{8}{10}$ 3.8
4. $\frac{26}{10}$ $2\frac{6}{10}$ 2.6
5. $\frac{17}{10}$ $1\frac{7}{10}$ 1.7
6. $\frac{10}{10}$ 17 1.0

It's Your Turn



- B. 1. 0.4, 2.1, 4.2 2. 7.1, 7.9, 8.2
3. 5.3, 5.5, 6, 6.1 4. 6.8, 7, 7.1, 7.3
5. 0.7, 1.0, 1.6, 1.9, 2.3 6. 3.0, 3.9, 4.0, 4.1

Challenge Yourself

1. 0.7, 2.7, 7.1, 7.2, 7.8
2. 0.9, 9.0, 9.1, 9.6, 9.9
3. 10, 10.1, 10.6, 10.9, 11.2
4. 0.9, 3.7, 4.8, 5.1, 7.3, 8.3



Lesson 12

Rounding Decimals to the Nearest Tenth and Nearest One

Warm Up

1. 700
2. 1100
3. 11 300
4. 4100
5. 17 600
6. 101 600
7. 145 100
8. 77 800

It's Your Turn

- A. 1. 5 and 6
2. 13 and 14
3. 15 and 16
4. 0 and 1
5. 9 and 10
- B. 1. The hundredths place
2. The tenths place

Answer Key

- C. 1. 2 and 6 tenths
2. 4 and 1 tenth
3. 7 and 7 tenths
4. 9 and 6 tenths
5. 10

- D. 1. 6.4
2. 17.2
3. 123.9
4. 441.0

- E. 1. 4
2. 18

F. Race 1	12.6	12.5
Race 2	8.6	8.6
Race 3	9.7	9.8
Race 4	10.1	10.0

Race 2 could be called a tie but Brock was the actual winner based on hundredths of seconds.



Lesson 13

Rounding to the Nearest Whole Number Estimating Sums and Differences With Decimals

Warm Up

- $30 + 40 = 70$
- $30 + 30 + 10 = 70$
- $40 + 30 + 20 = 90$
- $70 + 30 + 50 = 150$
- $20 + 20 + 20 + 40 = 100$

It's Your Turn

- A. 1. Actual: 4.2 cm Rounded: 4 cm
 2. Actual: 7.9 cm Rounded: 8 cm
 3. Actual: 0.8 cm Rounded: 1 cm
 4. Actual: 10.1 cm Rounded: 10 cm

- B. 1. \$8
 2. \$0 or 0
 3. \$5
 4. \$3

C. 1.
$$\begin{array}{r} 7.6 \rightarrow 8 \\ + 9.1 \\ \hline 17 \end{array}$$
 2.
$$\begin{array}{r} 12.8 \rightarrow 13 \\ + 21.9 \\ \hline 35 \end{array}$$

3.
$$\begin{array}{r} 7.2 \rightarrow 7 \\ + 16.1 \\ \hline 23 \end{array}$$
 4.
$$\begin{array}{r} 48.7 \rightarrow 49 \\ + 73.2 \\ \hline 122 \end{array}$$

D. 1.
$$\begin{array}{r} 12.3 \rightarrow 12 \\ - 8.2 \\ \hline 4 \end{array}$$
 2.
$$\begin{array}{r} 15.7 \rightarrow 16 \\ - 11.2 \\ \hline 5 \end{array}$$

3.
$$\begin{array}{r} 51.4 \rightarrow 51 \\ - 7.9 \\ \hline 43 \end{array}$$
 4.
$$\begin{array}{r} 127.5 \rightarrow 128 \\ - 64.4 \\ \hline 64 \end{array}$$

It's Your Turn

- A. 1. 0.6 2. 1.0
 3. 1.1 4. 1.7
- B. 1. $\begin{array}{r} 0.2 \\ +0.7 \\ \hline 0.9 \end{array}$ 2. $\begin{array}{r} 2.9 \\ +3.5 \\ \hline 6.4 \end{array}$ 3. $\begin{array}{r} 27.2 \\ +47.9 \\ \hline 75.1 \end{array}$ 4. $\begin{array}{r} 21.6 \\ 75.2 \\ +49.2 \\ \hline 145.0 \end{array}$

- C. 1. $\begin{array}{r} 14.5 \\ +5.3 \\ \hline 19.8 \end{array}$ 2. $\begin{array}{r} \$12.38 \\ 1.89 \\ \hline 43.98 \\ \$58.25 \end{array}$ 3. $\begin{array}{r} 6.2 \\ \underline{14.6} \\ 20.8 \end{array}$

4. $\begin{array}{r} 8.403 \\ 12.000 \\ \hline 3.980 \\ 24.383 \end{array}$ 5. $\begin{array}{r} 33.9 \\ \underline{41.2} \\ 75.1 \end{array}$

- D. 1. $\begin{array}{r} 6.2 \\ + 4.8 \\ \hline 11.0 \end{array}$
 Jenny jogged 11.0 km.

2. $\begin{array}{r} 1.7 \\ 1.6 \\ + 1.6 \\ \hline 4.9 \end{array}$
 Laurie's combined score was 4.9 m.

Challenge Yourself

1. 27.995
 2. 100.84
 3. 191.713
 4. $\begin{array}{r} 115.427 \\ 13.512 \\ +9.7 \\ \hline 23.212 \text{ kg} \end{array}$



Lesson 15

Subtracting Decimal Fractions

Warm Up

- A.
- | | | | |
|-------|-------|-------|-------|
| 1. 3 | 2. 6 | 3. 0 | 4. 6 |
| 5. 4 | 6. 6 | 7. 4 | 8. 7 |
| 9. 8 | 10. 8 | 11. 6 | 12. 3 |
| 13. 8 | 14. 3 | 15. 5 | 16. 5 |
| 17. 9 | 18. 5 | 19. 7 | 20. 9 |
| 21. 9 | | | |

- B.
- | | | | | |
|--|--|--|--|--|
| 1. $\begin{array}{r} 31 \\ 459 \\ -389 \\ \hline 70 \end{array}$ | 2. $\begin{array}{r} 81 \\ 3964 \\ -1892 \\ \hline 2072 \end{array}$ | 3. $\begin{array}{r} 8121 \\ 9733 \\ -4819 \\ \hline 4914 \end{array}$ | 4. $\begin{array}{r} 5141 \\ 6051 \\ -3944 \\ \hline 2107 \end{array}$ | 5. $\begin{array}{r} 8191 \\ 9205 \\ -3856 \\ \hline 5349 \end{array}$ |
|--|--|--|--|--|

It's Your Turn

- A.
- | | |
|--------|--------|
| 1. 0.3 | 2. 0.2 |
| 3. 0.7 | 4. 0.5 |
| 5. 0.5 | 6. 0.1 |
- B.
- | | | |
|--|--|--|
| 1. $\begin{array}{r} 459 \\ -389 \\ \hline 70 \end{array}$ | 2. $\begin{array}{r} 3964 \\ -1892 \\ \hline 2072 \end{array}$ | 3. $\begin{array}{r} 9733 \\ -4819 \\ \hline 4914 \end{array}$ |
| 4. $\begin{array}{r} 6051 \\ -3944 \\ \hline 2107 \end{array}$ | 5. $\begin{array}{r} 9205 \\ -3856 \\ \hline 5349 \end{array}$ | |
- C.
- | | | |
|--|--|---|
| 1. $\begin{array}{r} \$284.16 \\ -\$103.79 \\ \hline \$180.37 \end{array}$ | 2. $\begin{array}{r} 423.1 \\ -16.5 \\ \hline 406.6 \end{array}$ | 3. $\begin{array}{r} 18.00 \\ -9.37 \\ \hline 8.63 \end{array}$ |
|--|--|---|
- D.
- | | | | |
|--|--|---|---|
| 1. $\begin{array}{r} 34.5 \\ -23.6 \\ \hline 10.9 \end{array}$ | 35 $\begin{array}{r} -24 \\ \hline 11 \end{array}$ | 2. $\begin{array}{r} 17.4 \\ -10.7 \\ \hline 6.7 \end{array}$ | 17 $\begin{array}{r} -11 \\ \hline 6 \end{array}$ |
|--|--|---|---|

$$\begin{array}{r}
 3. \quad 23.50 \quad 24 \\
 \quad -19.78 \quad -20 \\
 \hline
 \quad \quad 3.72 \quad 4
 \end{array}
 \qquad
 \begin{array}{r}
 4. \quad 431.25 \quad 431 \\
 \quad -330.55 \quad -331 \\
 \hline
 \quad \quad 100.70 \quad 100
 \end{array}$$

Challenge Yourself

- A. 1. 2.402
 2. 0.086
 3. \$822.44
 4. 98.246

B. 1.
$$\begin{array}{r}
 45.61 \\
 -43.19 \\
 \hline
 2.42
 \end{array}$$

Chris won the race by 2.42 minutes.

2.
$$\begin{array}{r}
 \$37.89 \quad \$31.11 \\
 -6.78 \quad +1.87 \\
 \hline
 \$31.11 \quad \$32.98
 \end{array}$$

She paid \$32.98.



Lesson 16 Decimal Dollars

Warm Up

1. \$5.60
2. \$9.99
3. \$9.10
4. \$28.40
5. \$7.85
6. \$8.25

It's Your Turn

- A. 1. \$0.58 2. \$0.72
3. \$0.91 4. \$1.31
5. \$3.04 6. \$2.10

- B. 1. \$0.52
2. \$1.16
3. \$0.12
4. \$8.06
5. \$12.19
6. \$0.17
7. \$7.20
8. \$0.02

- C. 1. > 2. >
3. < 4. <

- D. 1. 77¢ \$0.77
2. 50¢ \$0.50
3. \$1.76

Challenge Yourself

- A. 1. 14.69
2. 2.299
3. 0.049
4. 0.599

- B. 1. 7.00
2. 21.100
3. 1.000
4. 35.20

- C. 1. 1.40 1.41 1.42 1.43
2. 26.00 26.01 26.02 26.03

- D. 1. 10.000 10.001 10.002 10.003
2. 0.350 0.351 0.352 0.353



Lesson 17

Estimating Dollar Sums and Differences

Warm Up

- A.
- | | | | |
|----|----|-----|-----|
| 1. | 7 | 2. | 4 |
| 3. | 6 | 4. | 19 |
| 5. | 77 | 6. | 99 |
| 7. | 6 | 8. | 30 |
| 9. | 28 | 10. | 200 |
- B.
- | | | | |
|----|-----|----|-----|
| 1. | 20 | 2. | 70 |
| 3. | 170 | 4. | 200 |
| 5. | 70 | 6. | 10 |
| 7. | 180 | 8. | 240 |

It's Your Turn

- A.
- | | | | | | | | |
|----|---------------|---|------------|----|---------------|---|-----------|
| 1. | \$25.25 | → | \$25 | 2. | \$99.95 | → | \$100 |
| | <u>+49.95</u> | → | <u>+50</u> | | <u>+15.95</u> | → | <u>16</u> |
| | | | \$75 | | | | \$116 |
-
- | | | | | | | | |
|----|---------------|---|------------|----|----------------|---|------------|
| 3. | \$24.95 | → | \$25 | 4. | \$149.00 | → | \$149 |
| | <u>+24.15</u> | → | <u>+24</u> | | <u>+199.95</u> | → | <u>200</u> |
| | | | \$49 | | | | \$349 |
-
- B.
- | | | | | | | | |
|----|--------------|---|-----------|----|--------------|---|-----------|
| 1. | \$6.50 | → | \$7 | 2. | \$10.95 | → | \$11 |
| | <u>-2.10</u> | → | <u>-2</u> | | <u>-5.15</u> | → | <u>-5</u> |
| | | → | \$5 | | | → | \$6 |
-
- | | | | | | | | |
|----|---------------|---|------------|----|---------------|---|------------|
| 3. | \$28.30 | → | \$28 | 4. | \$11.65 | → | \$12 |
| | <u>-13.80</u> | → | <u>-14</u> | | <u>-10.95</u> | → | <u>-11</u> |
| | | → | \$14 | | | → | \$1 |
-
- | | | | | | | | |
|----|--------------|---|-----------|----|----------------|---|-------------|
| 5. | \$8.62 | → | \$9 | 6. | \$145.10 | → | \$145 |
| | <u>-7.31</u> | → | <u>-7</u> | | <u>-144.95</u> | → | <u>-145</u> |
| | | → | \$2 | | | → | \$0 |

Answer Key

C. 1.
$$\begin{array}{r} \$72.95 \rightarrow 70 \\ 16.95 \rightarrow 20 \\ \underline{+32.95} \rightarrow \underline{+30} \\ \$120 \end{array}$$

2.
$$\begin{array}{r} \$11.95 \rightarrow 10 \\ 42.25 \rightarrow 40 \\ \underline{+67.15} \rightarrow \underline{+70} \\ \$120 \end{array}$$

3.
$$\begin{array}{r} \$80.95 + \$62.40 + \$74.60 = \$80 \\ 60 \\ \underline{+70} \\ \$210 \end{array}$$

4.
$$\begin{array}{r} \$103.45 + \$37.95 + \$128.50 = \$100 \\ 40 \\ \underline{+130} \\ \$270 \end{array}$$

D. 1. Rounded to the nearest \$10.

$\$39.99 \rightarrow \40 About \$10 is saved on the sale price.

$$\begin{array}{r} -27.90 \\ \underline{-30} \\ \$10 \end{array}$$

OR

Rounded to the nearest \$1.

$\$39.99 \rightarrow \40 About \$12 is saved on the sale price.

$$\begin{array}{r} -27.90 \\ \underline{-28} \\ \$12 \end{array}$$

2. Rounded to the nearest \$10.

$\$299.95 \rightarrow \300 She needs about \$180 more.

$$\begin{array}{r} -121.15 \\ \underline{-120} \\ \$180 \end{array}$$

OR

Rounded to the nearest \$1.

$\$299.95 \rightarrow \300 She needs about \$179 more.

$$\begin{array}{r} -121.15 \\ \underline{-121} \\ \$179 \end{array}$$

Challenge Yourself

Answers will vary.

Examples:

1. $2.6 + 4.4$ (sum approximately 7)
 2. $0.7 + 0.6$ (sum closer to 1 than 2)
 3. $7.4 - 2.9$ (difference approximately 4)
 4. $6.2 - 3.1$ (difference between 2 and 3 but closer to 3)
- accept any answer that works

**Lesson 18**
Adding and Subtracting Dollars and Cents

Warm Up

- A.
1. 9.8
 2. 16.7
 3. 16.4
 4. 19.4
 5. 16.6
 6. 101.7
- B.
- | | |
|--------|--------|
| 1. 2.1 | 2. 2.6 |
| 3. 4.2 | 4. 2.4 |
| 5. 5.8 | 6. 8.1 |

It's Your Turn

- A.
- | | | |
|-------------|------------|------------|
| 1. \$3.67 | 2. \$4.44 | 3. \$7.50 |
| 4. \$102.35 | 5. \$76.40 | 6. \$86.00 |
- B.
1. \$10.35
 2. \$19.80
 3. \$12.00
 4. \$141.61
 5. \$15.05
 6. \$114.80

Answer Key

- C. 1. \$3.25 2. \$6.80
3. \$4.01 4. \$5.50
- D. 1. \$3.05
2. \$3.70

Challenge Yourself

1. \$ 5.50 —a tape
8.15 —a t-shirt
+ 9.00 —a book
\$22.65

The 3 cheapest items cost \$22.65.

2. \$ 6.99
6.99 OR $3 \times \$7 = \21
+ 6.99
\$20.97

Myrna needed more money to buy 3 pairs of socks.

3.

Number of dimes	Value	Number of quarters	Value	Total
5	50¢	5	\$1.25	\$1.75
6	60¢	4	\$1.00	\$1.60
7	70¢	3	75¢	\$1.45
8	80¢	2	50¢	\$1.30
9	90¢	1	25¢	\$1.15

Jill has 9 dimes.



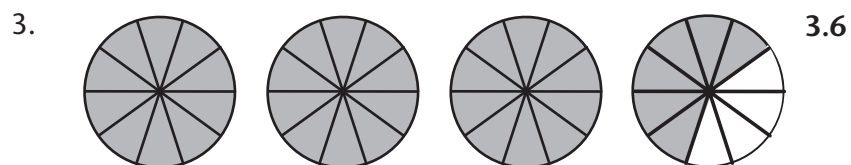
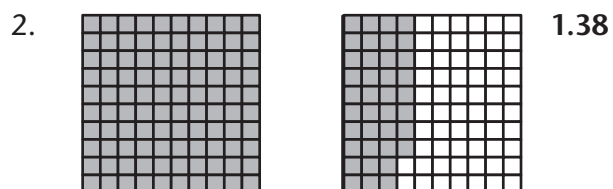
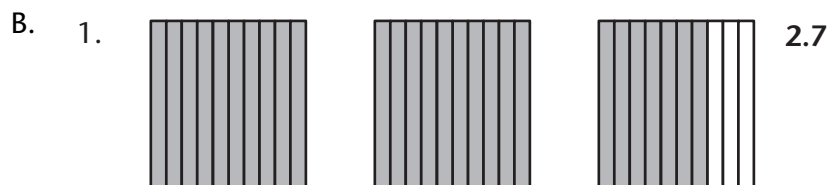
Lesson 19 Mixed Numbers—Ones, Tenths, Hundreds

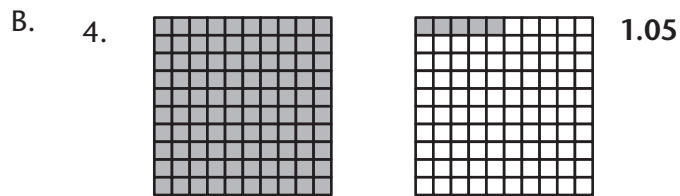
Warm-Up

1. <
2. <
3. <
4. >
5. =
6. >
7. <
8. >

It's Your Turn

- A.
1. 10.8
 2. 5.13
 3. 3.60
 4. 7.35
 5. 8.93
 6. 5.77





- C. 1. two and four tenths
 2. five and seven tenths
 3. six and nineteen hundredths
 4. twenty-two hundredths
 5. eight and six hundredths
 6. two and nine hundredths

Challenge Yourself

- A. 1. >
 2. <
 3. =
 4. >
 5. <
- B. 1. 6.8, 6.9, 7.0, 7.1, 7.2, 7.3
 2. 19.6, 19.7, 19.8, 19.9, 20.0, 20.1
 3. 0.8, 0.9, 1.0, 1.1, 1.2



Lesson 20 Renaming a Decimal Fraction as a Common Fraction

Warm Up

1. $\frac{2}{10}$ 2. $\frac{5}{10}$
 3. $\frac{7}{10}$ 4. $\frac{1}{10}$

It's Your Turn

- | | |
|-----------------------|------------------------|
| 1. $\frac{5}{10}$ | 2. $\frac{3}{100}$ |
| 3. $\frac{21}{100}$ | 4. $\frac{4}{100}$ |
| 5. $\frac{135}{1000}$ | 6. $\frac{52}{1000}$ |
| 7. $\frac{3}{1000}$ | 8. $\frac{156}{1000}$ |
| 9. $\frac{2}{10}$ | 10. $\frac{349}{1000}$ |
| 11. $\frac{3}{10}$ | 12. $\frac{12}{100}$ |
| 13. $\frac{2}{100}$ | 14. $\frac{7}{10}$ |
| 15. $\frac{1}{1000}$ | 16. $\frac{123}{1000}$ |
| 17. $\frac{75}{1000}$ | 18. $\frac{335}{1000}$ |

Challenge Yourself

1. Answer given

$$2. \frac{8}{10} = \frac{4}{5} \quad \frac{\text{O O O O}}{\text{O O O O O}} - \frac{\text{O O O O}}{\text{O O O O O}}$$

$$3. \frac{4}{10} = \frac{2}{5} \quad \frac{\text{O O}}{\text{O O O O O}} - \frac{\text{O O}}{\text{O O O O O}}$$

$$4. \frac{5}{10} = \frac{1}{2} \quad \frac{\text{O}}{\text{O O}} - \frac{\text{O}}{\text{O O}} - \frac{\text{O}}{\text{O O}} - \frac{\text{O}}{\text{O O}} - \frac{\text{O}}{\text{O O}}$$

Mastery Test—Fractions and Decimals

Answer Key

Part A

A. Colour the correct number of parts to show each fraction.



four tenths



$\frac{5}{9}$



three fourths



$\frac{3}{5}$

B. Write each fraction in words. Remember to spell the words correctly.

1. $\frac{7}{8}$ seven eighths

2. $\frac{3}{4}$ three fourths or three quarters

3. $\frac{7}{10}$ seven tenths

4. $\frac{4}{6}$ four sixths

C. Write the number for each fraction.

1. two thirds $\frac{2}{3}$

2. three eighths $\frac{3}{8}$

3. one quarter $\frac{1}{4}$

4. four fifths $\frac{4}{5}$

D. Here are the names of six towns in British Columbia. Remember to write your answer as a common fraction.

HOPE NANAIMO CRANBROOK CRESTON
VANCOUVER MERRIT

1. What fraction of the towns has the letter "l" in their names?

$$\frac{2}{6} \text{ or } \frac{1}{3}$$

2. What fraction of the towns has more than 6 letters in their name?

$$\frac{2}{6} \text{ or } \frac{1}{3}$$

3. What fraction of the towns have the letter "r" in them?

$$\frac{3}{6} \text{ or } \frac{1}{2}$$

4. What fraction of the towns has a 4-letter name?

$$\frac{1}{6}$$

Part B

Use < or > to complete each statement.

1. $\frac{0}{3} < \frac{1}{3}$

2. $\frac{10}{11} > \frac{4}{11}$

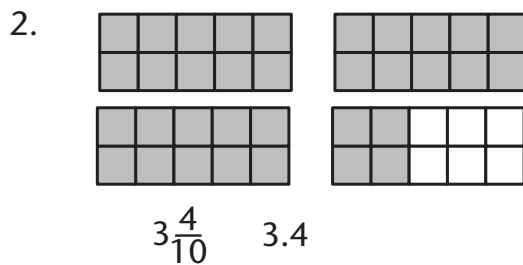
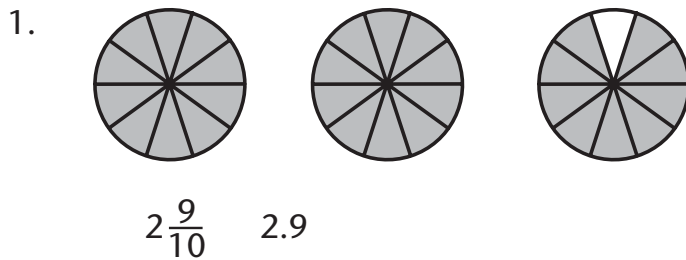
3. $\frac{8}{9} > \frac{2}{9}$

4. $\frac{1}{10} > \frac{0}{10}$

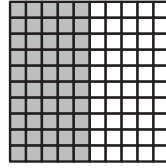
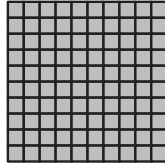
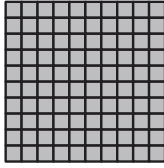
5. $\frac{9}{9} > \frac{1}{9}$

Part C

A. Express the shaded parts of each shape as a common fraction and a decimal.



3.



$$2\frac{50}{100} \quad 2.5$$

B. Write each of the fractions as a common fraction.

1. two tenths $\frac{2}{10}$ 2. 0.6 $\frac{6}{10}$

3. 9 tenths $\frac{9}{10}$ 4. 0.5 $\frac{5}{10}$

5. 0.3 $\frac{3}{10}$

C. Write each fraction as a decimal fraction.

1. eight tenths **0.8**

2. sixteen tenths **1.6**

3. thirty-two tenths **3.2**

4. eleven tenths **1.1**

5. 10 tenths **1.0**

D. Write these decimals in words.

1. 7.2 **seven and two tenths**

2. 5.8 **five and eight tenths**

3. 12.7 **twelve and seven tenths**

4. 18.9 **eighteen and nine tenths**

5. 23.2 **twenty-three and two tenths**

Part D

A. How many ones and tenths are in each of the fractions.

1. $\frac{21}{10}$ **2 ones and 1 tenth**

2. $\frac{45}{10}$ **4 ones and 5 tenths**

3. $\frac{19}{10}$ **1 one and 9 tenths**

4. twenty-two tenths **2 ones and 2 tenths**

5. seventeen tenths **1 one and 2 tenths**

B. Write each fraction as a decimal number.

1. Thirty-nine hundredths **0.39**

2. Seventeen hundredths **0.17**

3. $\frac{73}{100}$ **0.73**

4. fifteen and eight hundredths **15.08**

5. $7\frac{8}{10}$ **7.8**

Part E

A. Write < (less than) or > (greater than) to complete each number statement.

1. 0.12 < 0.21 2. 21.7 > 7.87

3. 14.01 > 14.00 3. 70.04 < 74.07

5. 16.44 < 44.16

B. Order the numbers from least to greatest.

1. 30.2, 32.9, 29.3, 23.9

23.9, 29.3, 30.2, 32.9

2. 8.2, 8, 8.8, 9, 8.1

8.1, 8.2, 8.8, 8.9

C. Count by tenths.

1. From 29.6 to 30.4

29.6, 29.7, 29.8, 29.9, 30.0, 30.1, 30.2, 30.3, 30.4

2. From 16.8 to 17.7

16.8, 16.9, 17.0, 17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.7

3. From 35.6 to 36.5

35.6, 35.7, 35.8, 35.9, 36.0, 36.1, 36.2, 36.3, 36.4, 36.5

Part F

A. Write an equivalent decimal number for each of the following.

a. 75.1 as thousandths **75.001**

b. 0.09 as thousandths **0.090**

c. 615.990 as hundredths **615.99**

d. 4519 as thousandths **4519.000**

B. Use the place-value chart for each number. Put each number in the correct position on the chart.

1. 15.75

Tens	Ones	Tenths	Hundredths
1	5	.	7
			5

2. 20.08

Tens	Ones	Tenths	Hundredths
2	0	.	0
			8

C. Central Heights High School had five top long distance runners in the City Track Meet. Their fastest times were:

1. Jim **43.01**
2. Sam **44.52**
3. Paul **43.10**
4. Karl **45.01**
5. Hayne **44.66**

Arrange the runners' names in order from first place to fifth place.

Jim - first

Paul – second

Sam – third

Hayne – fourth

Karl – fifth

D. Order the following set of numbers from least to greatest.

845.051 845.115 845.50 840.500

840.500 845.051 845.115 845.500

E. Count by thousandths.

6.996 6.997 **6.998 6.999 7.000 7.001**

F. Circle the number in each group with the least value.

1. 16.12

16.0

15.999

16.001

16.90

2. 7.925

7.91

7.999

7.099

7.9

G. Write $>$, $<$, or $=$ to complete each number statement.

1. $94 \text{ ___} > \text{ ___} 93.889$

2. $34.01 \text{ ___} = \text{ ___} 34.010$

3. $765.19 \text{ ___} > \text{ ___} 756.995$

4. $1.384 \text{ ___} < \text{ ___} 1.39$

5. $75.67 \text{ ___} > \text{ ___} 75.629$

Part G

A. Round each money amount to the nearest dollar. Write your answers in standard form (with dollar signs).

1. 4 dollars and eight cents **\$4**
2. \$12.78 **\$13**
3. eleven and one half dollars **\$12**

B. Round each decimal number to the nearest whole number.

1. 20.50 **21**
2. 481.4 **481**
3. 17.4 **17**
4. 88.5 **89**
5. 11.44 **11**
6. 12.635 **13**

C. Round to the nearest tenth.

1. 0.45 **0.5**
2. 8.26 **8.3**
3. 24.37 **24.4**
4. 65.384 **65.4**
5. 450.986 **451.0**

D. Round each decimal number to the nearest whole number and add or subtract.

$$\begin{array}{r} 1. \quad 55.6 \quad \rightarrow \quad 56 \\ \quad \underline{-31.8} \quad \rightarrow \quad \underline{-32} \\ \quad \quad \quad \quad \quad 24 \end{array}$$

$$\begin{array}{r} 2. \quad 17.5 \quad \rightarrow \quad 18 \\ \quad \quad \quad \quad \quad \underline{+8.5} \quad \rightarrow \quad \underline{+9} \\ \quad \quad \quad \quad \quad \quad \quad \quad 27 \end{array}$$

$$\begin{array}{r} 3. \quad 86.2 \quad \rightarrow \quad 86 \\ \quad \quad \quad \quad \quad \underline{+69.6} \quad \rightarrow \quad \underline{+70} \\ \quad \quad \quad \quad \quad \quad \quad \quad 156 \end{array}$$

$$\begin{array}{r} 4. \quad 66.3 \quad \rightarrow \quad 66 \\ \quad \quad \quad \quad \quad \underline{-59.7} \quad \rightarrow \quad \underline{-60} \\ \quad \quad \quad \quad \quad \quad \quad \quad 6 \end{array}$$

Part H

A. Line up the decimal fractions and add. Show all your work.

$$\begin{array}{r} 1. \quad 15.6 \\ \quad \underline{+22.4} \\ \quad 38.0 \end{array}$$

$$\begin{array}{r} 2. \quad 102.6 \\ \quad \underline{+23.8} \\ \quad 126.4 \end{array}$$

$$\begin{array}{r} 3. \quad 4.13 \\ \quad 21. \\ \quad 6.5 \\ \quad \underline{+6.25} \\ \quad 37.88 \end{array}$$

$$\begin{array}{r} 4. \quad \$7.98 \\ \quad 19.25 \\ \quad \underline{+303.19} \\ \quad \$330.42 \end{array}$$

$$\begin{array}{r} 5. \quad 0.635 \\ \quad 4.5 \\ \quad 0.80 \\ \quad \underline{+16.0} \\ \quad 21.935 \end{array}$$

B. Align these numbers and find the differences. Show your work.

$$\begin{array}{r} 1. \quad 81.4 \\ \quad \underline{-37.2} \\ \quad 44.2 \end{array}$$

$$\begin{array}{r} 2. \quad 47.6 \\ \quad \underline{-23.8} \\ \quad 23.8 \end{array}$$

$$\begin{array}{r} 3. \quad 0.836 \\ \quad \underline{-0.199} \\ \quad 0.637 \end{array}$$

$$\begin{array}{r} 4. \quad 8.23 \\ \quad \underline{-1.15} \\ \quad 7.08 \end{array}$$

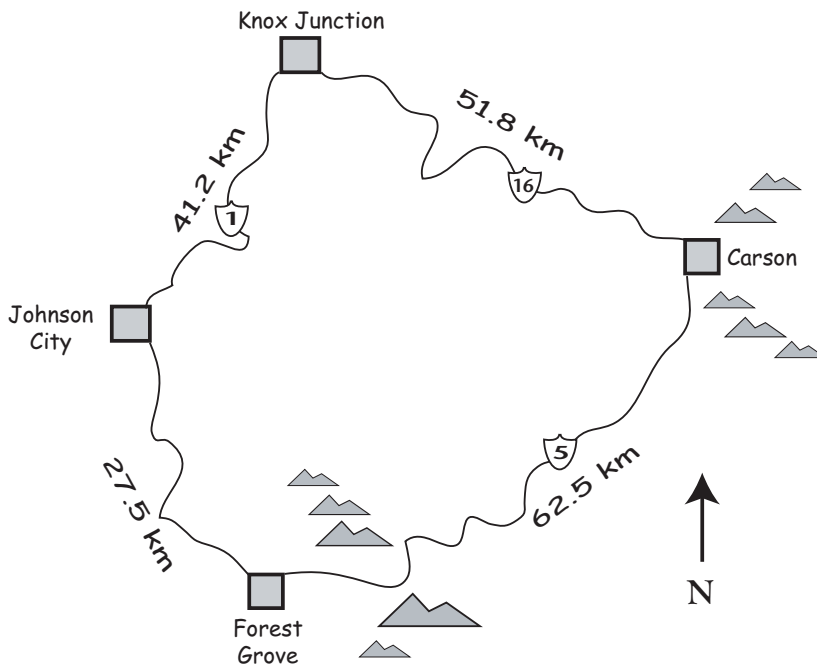
$$\begin{array}{r} 5. \quad 93.50 \\ \quad \underline{-18.29} \\ \quad 75.21 \end{array}$$

$$\begin{array}{r} 6. \quad \$482.16 \\ \quad \underline{-195.42} \\ \quad \$286.74 \end{array}$$

Part I

- A. Solve each problem. Show all your work and write a statement to answer each question.

Use the road map to answer problems 1, 2, and 3.



1. How far is it from Carson to Johnson City if you go through Forest Grove?

$$\begin{array}{r} 62.5 \\ +27.5 \\ \hline 90.0 \end{array}$$

Statement: **The distance is 90 km.**

2. How far is it from Carson to Johnson City if you go through Knox Junction?

$$\begin{array}{r} 51.8 \\ +41.2 \\ \hline 93.0 \end{array}$$

Statement: **The distance is 93 km.**

3. What is the total distance if you started at Knox Junction and visited all the other cities before returning to Knox Junction?

$$\begin{array}{r} 41.2 \\ 27.5 \\ 62.5 \\ +51.8 \\ \hline 183.0 \end{array}$$

Statement: **The total distance is 183 km.**

Use the menu below to answer problems 4 and 5.

Hamburger				\$ 1.80
Chicken Burger				\$ 2.40
Hot Dog				\$ 1.35
French Fries				\$ 1.15
Ice Cream				65¢
Cola	small 75¢	med. 95¢	large	\$1.15
Milk	small 90¢	med. \$1.10	large	\$1.35

4. Frankie ordered a chicken burger, fries, and a large milk. How much did she spend?

\$2.40
1.15
+1.35
\$4.90

Statement: **Frankie spent \$4.90.**

5. How much would 2 hot dogs, a medium cola, and 2 ice cream cost?

\$1.35
1.35
.95
.65
+.65
\$4.95

Statement: **The food would cost \$4.95.**

6. Rewrite the decimal fractions as common fractions.

1. $\frac{25}{1000}$

4. $\frac{8}{100}$

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

5. $\frac{90}{1000}$

3. $\frac{501}{1000}$

6. $\frac{90}{100}$

Glossary

You may find these definitions useful when you are explaining common fractions and decimal concepts to your child.

Fraction: parts of a whole

Example: $\frac{1}{2}$

Numerator: the number above the fraction bar—it indicates the number of parts of the whole

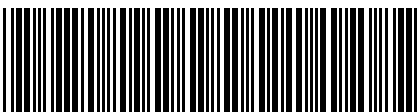
Example: $\frac{1}{2}$

Denominator: the number below the fraction bar—it indicates how many parts the whole is divided into

Example: $\frac{1}{2}$

Decimal: a fraction where the denominator is a power of ten and is therefore expressed using a decimal point

Example: 0.37 is the decimal equivalent of $\frac{37}{100}$



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