GRADE 4 • MODULE 6
Decimal Fractions

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Name ___________________________________________ Date ________________

1. Shade the first 7 units of the tape diagram. Count by tenths to label the number line using a fraction and a decimal for each point. Circle the decimal that represents the shaded part.

0 0.1 __ __ __ __ __ __ __ __ __ __ 1

\[ \frac{1}{10} \]

2. Write the total amount of water in fraction form and decimal form. Shade the last bottle to show the correct amount.

\[ \frac{1}{10} \]

3. Write the total weight of the food on each scale in fraction form or decimal form.
4. Write the length of the bug in centimeters. (Drawing is not to scale.)

   Fraction form: __________ cm
   Decimal form: __________ cm

   How far does the bug need to walk before its nose is at the 1 cm mark? __________ cm

5. Fill in the blank to make the sentence true in both fraction form and decimal form.
   a. \( \frac{8}{10} \text{ cm} + \text{______ cm} = 1 \text{ cm} \) \( 0.8 \text{ cm} + \text{______ cm} = 1.0 \text{ cm} \)
   b. \( \frac{2}{10} \text{ cm} + \text{______ cm} = 1 \text{ cm} \) \( 0.2 \text{ cm} + \text{______ cm} = 1.0 \text{ cm} \)
   c. \( \frac{6}{10} \text{ cm} + \text{______ cm} = 1 \text{ cm} \) \( 0.6 \text{ cm} + \text{______ cm} = 1.0 \text{ cm} \)

6. Match each amount expressed in unit form to its equivalent fraction and decimal forms.

<table>
<thead>
<tr>
<th>2 tenths</th>
<th>5 tenths</th>
<th>6 tenths</th>
<th>9 tenths</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{6}{10} )</td>
<td>( \frac{9}{10} )</td>
<td>( \frac{2}{10} )</td>
<td>( \frac{3}{10} )</td>
</tr>
<tr>
<td>0.6</td>
<td>0.9</td>
<td>0.3</td>
<td>0.5</td>
</tr>
</tbody>
</table>
Lesson 1 Exit Ticket

1. Fill in the blank to make the sentence true in both fraction form and decimal form.
   a. \( \frac{9}{10} \text{ cm} + \text{________ cm} = 1 \text{ cm} \)  
      \( 0.9 \text{ cm} + \text{________ cm} = 1.0 \text{ cm} \)
   b. \( \frac{4}{10} \text{ cm} + \text{________ cm} = 1 \text{ cm} \)  
      \( 0.4 \text{ cm} + \text{________ cm} = 1.0 \text{ cm} \)

2. Match each amount expressed in unit form to its fraction form and decimal form.
   - 3 tenths: \( \frac{3}{10} \rightarrow 0.3 \)
   - 8 tenths: \( \frac{8}{10} \rightarrow 0.8 \)
   - 5 tenths: \( \frac{5}{10} \rightarrow 0.5 \)
Name ___________________________________ Date __________________________

1. Shade the first 4 units of the tape diagram. Count by tenths to label the number line using a fraction and a decimal for each point. Circle the decimal that represents the shaded part.

\[
\begin{array}{cccccccccc}
& & & & & & & & & \\
& & & & & & & & & \\
& & & & & & & & & \\
& & & & & & & & & \\
& & & & & & & & & \\
& & & & & & & & & \\
& & & & & & & & & \\
& & & & & & & & & \\
& & & & & & & & & 1 \\
\end{array}
\]

\[
0 \hspace{1cm} 0.1 \hspace{1cm} \boxed{} \hspace{1cm} \boxed{} \hspace{1cm} \boxed{} \hspace{1cm} \boxed{} \hspace{1cm} \boxed{} \hspace{1cm} \boxed{} \hspace{1cm} \boxed{} \\
\frac{1}{10}
\]

2. Write the total amount of water in fraction form and decimal form. Shade the last bottle to show the correct amount.

\[
\begin{array}{c}
1 \text{ L} \\
0.5 \text{ L} \\
0.5 \text{ L}
\end{array}
\]

\[
\begin{array}{c}
1 \text{ L} \\
0.5 \text{ L} \\
0.5 \text{ L}
\end{array}
\]

\[
\begin{array}{c}
1 \text{ L} \\
0.5 \text{ L} \\
0.5 \text{ L}
\end{array}
\]

L = 0.3 L

3. Write the total weight of the food on each scale in fraction form or decimal form.

\[
\begin{array}{c}
\text{BROCCOLI} \\
0.7 \text{ kg}
\end{array}
\]

\[
\begin{array}{c}
\text{lettuce} \\
\text{apple} \\
\text{banana} \\
\text{kg}
\end{array}
\]

\[
\begin{array}{c}
\text{apple} \\
\text{banana} \\
\frac{6}{10} \text{ kg}
\end{array}
\]
4. Write the length of the bug in centimeters. (Drawing is not to scale.)

[Image of a ladybug and a ruler]

Fraction form: _________ cm
Decimal form: _________ cm

If the bug walks 0.5 cm farther, where will its nose be? _________ cm

5. Fill in the blank to make the sentence true in both fraction and decimal form.

a. \(\frac{4}{10} \text{ cm} + \underline{\text{______ cm}} = 1 \text{ cm}\)  
   \(0.4 \text{ cm} + \underline{\text{______ cm}} = 1.0 \text{ cm}\)

b. \(\frac{3}{10} \text{ cm} + \underline{\text{______ cm}} = 1 \text{ cm}\)  
   \(0.3 \text{ cm} + \underline{\text{______ cm}} = 1.0 \text{ cm}\)

c. \(\frac{8}{10} \text{ cm} + \underline{\text{______ cm}} = 1 \text{ cm}\)  
   \(0.8 \text{ cm} + \underline{\text{______ cm}} = 1.0 \text{ cm}\)

6. Match each amount expressed in unit form to its equivalent fraction and decimal.

<table>
<thead>
<tr>
<th>Amount</th>
<th>Fraction</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 tenths</td>
<td>(\frac{4}{10})</td>
<td>0.4</td>
</tr>
<tr>
<td>4 tenths</td>
<td>(\frac{7}{10})</td>
<td>0.6</td>
</tr>
<tr>
<td>6 tenths</td>
<td>(\frac{5}{10})</td>
<td>0.2</td>
</tr>
<tr>
<td>7 tenths</td>
<td>(\frac{2}{10})</td>
<td>0.5</td>
</tr>
<tr>
<td>5 tenths</td>
<td>(\frac{6}{10})</td>
<td>0.7</td>
</tr>
</tbody>
</table>
Lesson 2 Problem Set

Name ____________________________ Date ________________

1. For each length given below, draw a line segment to match. Express each measurement as an equivalent mixed number.
   a. 2.6 cm
   b. 3.4 cm
   c. 3.7 cm
   d. 4.2 cm
   e. 2.5 cm

2. Write the following as equivalent decimals. Then, model and rename the number as shown below.
   a. 2 ones and 6 tenths = __________

   \[
   \frac{2\frac{6}{10}}{10} = 2 + \frac{6}{10} = 2 + 0.6 = 2.6
   \]
Lesson 2: Use metric measurement and area models to represent tenths as fractions greater than 1 and decimal numbers.

b. 4 ones and 2 tenths = __________

c. \(3 \frac{4}{10} = \) __________

d. \(2 \frac{6}{10} = \) __________

How much more is needed to get to 5? _________________

e. \(\frac{37}{10} = \) __________

How much more is needed to get to 5? _________________
1. For the length given below, draw a line segment to match. Express the measurement as an equivalent mixed number.
   a. 4.8 cm

2. Write the following in decimal form and as a mixed number. Shade the area model to match.
   a. 3 ones and 7 tenths = \[\frac{23}{10}\] = \[\frac{2}{1}\]

   How much more is needed to get to 5? \[\frac{2}{10}\]
1. For each length given below, draw a line segment to match. Express each measurement as an equivalent mixed number.
   a. 2.6 cm
   b. 3.5 cm
   c. 1.7 cm
   d. 4.3 cm
   e. 2.2 cm

2. Write the following in decimal form. Then, model and rename the number as shown below.
   a. 2 ones and 6 tenths = __________
Lesson 2 Homework

b. 3 ones and 8 tenths = __________

c. $4 \frac{1}{10} = __________$

d. $1 \frac{4}{10} = __________$

How much more is needed to get to 5? _________________

e. $\frac{33}{10} = __________$

How much more is needed to get to 5? _________________
Use metric measurement and area models to represent tenths as fractions greater than 1 and decimal numbers.

Date: 1/28/14
1. Circle groups of tenths to make as many ones as possible.

   a. How many tenths in all? Write and draw the same number using ones and tenths. There are _________ tenths. Decimal Form: _________ How much more is needed to get to 3? _________

   b. How many tenths in all? Write and draw the same number using ones and tenths. There are _________ tenths. Decimal Form: _________ How much more is needed to get to 4? _________

2. Draw disks to represent each number using tens, ones, and tenths. Then, show the expanded form of the number in fraction form and decimal form as shown. The first one has been completed for you.

   a. 4 tens 2 ones 6 tenths
      Fraction Expanded Form
      \[ (4 \times 10) + (2 \times 1) + (6 \times \frac{1}{10}) = 2 \frac{6}{10} \]
      Decimal Expanded Form
      \[ (4 \times 10) + (2 \times 1) + (6 \times 0.1) = 2.6 \]

   b. 1 ten 7 ones 5 tenths
Lesson 3: Represent mixed numbers with units of tens, ones, and tenths with number disks, on the number line, and in expanded form.

Date: 1/28/14

<table>
<thead>
<tr>
<th>Point</th>
<th>Number Line</th>
<th>Decimal Form</th>
<th>Mixed Number (ones and fraction form)</th>
<th>Expanded Form (fraction or decimal form)</th>
<th>How much to get to the next one?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td>3 (\frac{9}{10})</td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td>b.</td>
<td>17</td>
<td>18</td>
<td>(7 \times 10) + (4 \times 1) + (7 \times \frac{1}{10})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td>22 (\frac{2}{10})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td>(8 \times 10) + (8 \times 0.1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Complete the chart.
Lesson 3 Exit Ticket

Name ________________________________ Date ____________________

1. Circle groups of tenths to make as many ones as possible.

   a. How many tenths in all?

      There are ________ tenths.

      Write and draw the same number using ones and tenths.

      Decimal Form: ________

      How much more is needed to get to 2? ________

2. Complete the chart.

<table>
<thead>
<tr>
<th>Point</th>
<th>Number Line</th>
<th>Decimal Form</th>
<th>Mixed Number (ones and fraction form)</th>
<th>Expanded Form (fraction or decimal form)</th>
<th>How much to get to the next one?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td>12 $\frac{9}{10}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td>70.7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lesson 3 Homework

1. Circle groups of tenths to make as many ones as possible.
   
   a. How many tenths in all?
   
   There are _________ tenths.
   
   Write and draw the same number using ones and tenths.
   
   Decimal Form: _________
   
   How much more is needed to get to 2? _________
   
   b. How many tenths in all?
   
   There are _________ tenths.
   
   Write and draw the same number using ones and tenths.
   
   Decimal Form: _________
   
   How much more is needed to get to 3? _________

2. Draw disks to represent each number using tens, ones, and tenths. Then, show the expanded form of the number in fraction form and decimal form as shown. The first one has been completed for you.
   
   a. 3 tens 4 ones 3 tenths
   
   Fraction Expanded Form
   
   \[(3 \times 10) + (4 \times 1) + (3 \times \frac{1}{10}) = 34 \frac{3}{10}\]
   
   Decimal Expanded Form
   
   \[(3 \times 10) + (4 \times 1) + (3 \times 0.1) = 34.3\]
   
   b. 5 tens 3 ones 7 tenths
c. 3 tens 2 ones 3 tenths  

<table>
<thead>
<tr>
<th>Point</th>
<th>Number Line</th>
<th>Decimal Form</th>
<th>Mixed Number (ones and fraction form)</th>
<th>Expanded Form (fraction or decimal form)</th>
<th>How much to get to the next one?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td>$\frac{6}{10}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td>$0.5$</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td>$6 + 3 \times 1 + 6 \times \frac{3}{10}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td>$71\frac{3}{10}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td></td>
<td></td>
<td>$(9 \times 10) + (9 \times 0.1)$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Lesson 3 Template

**Number Line and Chart Template**

<table>
<thead>
<tr>
<th>Point</th>
<th>Number Line</th>
<th>Decimal Form</th>
<th>Mixed Number (ones and fraction form)</th>
<th>Expanded Form (fraction or decimal form)</th>
<th>How much more is needed to get to the next one?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lesson 4 Problem Set

Name ______________________________________________________________________________ Date ______________________

1. a. What is the length of the shaded part of the meter stick in centimeters?

[Diagram of a meter stick with shaded parts]

b. What fraction of a meter is 1 centimeter?

c. In fraction form, express the length of the shaded portion of the meter stick.

[Diagram of a meter stick with shaded parts]

d. In decimal form, express the length of the shaded portion of the meter stick.

e. What fraction of a meter is 10 centimeters?

2. Fill in the blanks.

a. 1 tenth = ____ hundredths

b. \( \frac{1}{10} \text{ m} = \frac{\text{____}}{100} \text{ m} \)

c. \( \frac{2}{10} \text{ m} = \frac{\text{____}}{\text{____}} \text{ m} \)

3. Use the model to add the shaded parts as shown. Write a number bond with the total written in decimal form and the parts written as fractions. The first one has been done for you.

[Diagram of a meter stick with shaded parts]

\( \frac{1}{10} \text{ m} + \frac{3}{100} \text{ m} = \frac{13}{100} \text{ m} = 0.13 \text{ m} \)
Lesson 4 Problem Set

4. On each meter stick, shade in the amount shown. Then, write the equivalent decimal.

   a. \(\frac{8}{10}\) m
   
   b. \(\frac{7}{100}\) m
   
   c. \(\frac{19}{100}\) m

5. Draw a number bond pulling out the tenths from the hundredths as in Problem 3. Write the total as the equivalent decimal.

   a. \(\frac{19}{100}\) m
   
   b. \(\frac{28}{100}\) m
   
   c. \(\frac{77}{100}\)
   
   d. \(\frac{94}{100}\)
Lesson 4 Exit Ticket

1. Shade in the amount shown. Then, write the equivalent decimal.

\[
\frac{6}{10} \text{ m}
\]

2. Draw a number bond with the tenths and hundredths as the two parts. Write the total as the equivalent decimal.

a. \[\frac{62}{100} \text{ m}\]

b. \[\frac{27}{100}\]
1. a. What is the length of the shaded part of the meter stick in centimeters?

b. What fraction of a meter is 3 centimeters?

c. In fraction form, express the length of the shaded portion of the meter stick.

d. In decimal form, express the length of the shaded portion of the meter stick.

e. What fraction of a meter is 30 centimeters?

2. Fill in the blanks.
   a. $5$ tenths = ____ hundredths
   b. $\frac{5}{10}$ m = ____ m
   c. $\frac{4}{10}$ m = ____ m

3. Use the model to add the shaded parts as shown. Write a number bond with the total written in decimal form and the parts written as fractions. The first one has been done for you.

   \[
   \frac{1}{10} \text{ m} + \frac{3}{100} \text{ m} = \frac{13}{100} \text{ m} = 0.13 \text{ m}
   \]
Lesson 4 Homework

4. On each meter stick, shade in the amount shown. Then, write the equivalent decimal.
   
   a. \( \frac{9}{10} \) m
   
   b. \( \frac{15}{100} \) m
   
   c. \( \frac{41}{100} \) m

5. Draw a number bond, pulling out the tenths from the hundredths, as in Problem 3 of the Homework. Write the total as the equivalent decimal.
   
   a. \( \frac{23}{100} \) m
   
   b. \( \frac{38}{100} \) m
   
   c. \( \frac{82}{100} \) m
   
   d. \( \frac{76}{100} \) m
Lesson 4: Use meters to model the decomposition of one into hundredths.
Represent and count hundredths.

Date: 1/28/14

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1. Find the equivalent fraction using multiplication or division. Shade the area models to show the equivalency. Record it as a decimal.

   a. \[
   \frac{3 \times 10}{100} = \_
   \]

   b. \[
   \frac{50 \div 10}{100} = \_
   \]

2. Complete the number sentences. Shade the equivalent amount on the area model, drawing horizontal lines to make hundredths.

   a. 37 hundredths = _____ tenths + ____ hundredths

      Fraction form: ______

      Decimal form: ______

   b. 75 hundredths = ____ tenths + ____ hundredths

      Fraction form: ______

      Decimal form: ______

3. Circle hundredths to compose as many tenths as you can. Complete the number sentences. Represent each with a number bond as shown.

   a. _____ hundredths = _____ tenth + _____ hundredths
Lesson 5: Model the equivalence of tenths and hundredths using the area model and number disks.

Date: 1/28/14

4. Use both tenths and hundredths number disks to represent each number. Write the equivalent number in decimal, fraction, and unit form.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>( \frac{3}{100} = 0. _____ )</td>
<td>( \frac{15}{100} = 0. _____ )</td>
</tr>
<tr>
<td>_____ hundredths</td>
<td>_____ tenth _____ hundredths</td>
</tr>
<tr>
<td>c.</td>
<td>d.</td>
</tr>
<tr>
<td>_____ = 0.72</td>
<td>_____ = 0.80</td>
</tr>
<tr>
<td>_____ hundredths</td>
<td>_____ tenths</td>
</tr>
<tr>
<td>e.</td>
<td>f.</td>
</tr>
<tr>
<td>_____ = 0. _____</td>
<td>_____ = 0. _____</td>
</tr>
<tr>
<td>7 tenths 2 hundredths</td>
<td>80 hundredths</td>
</tr>
</tbody>
</table>
Lesson 5 Exit Ticket

NYS COMMON CORE MATHEMATICS CURRICULUM

4•6

Name ___________________________ Date __________________

1. Use both tenths and hundredths number disks to represent each fraction. Write the equivalent decimal and fill in the blanks to represent each in unit form.

<table>
<thead>
<tr>
<th>a. (\frac{7}{100} = 0.)___</th>
<th>b. (\frac{34}{100} = 0.)___</th>
</tr>
</thead>
<tbody>
<tr>
<td>___ hundredths</td>
<td>___ tenths ___ hundredths</td>
</tr>
</tbody>
</table>

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Name ___________________________ Date ______________________

1. Find the equivalent fraction using multiplication or division. Shade the area models to show the equivalency. Record it as a decimal.

   a. \( \frac{4 \times \_}{10 \times \_} = \frac{\_}{100} \)  

   b. \( \frac{60 \div \_}{100 \div \_} = \frac{\_}{10} \)

   a. [Area model showing \( \frac{4}{10} \) and equivalent fraction]
   
   b. [Area model showing \( \frac{6}{10} \) and equivalent fraction]

2. Complete the number sentences. Shade the equivalent amount on the area model, drawing horizontal lines to make hundredths.

   a. 36 hundredths = _____ tenths + ____ hundredths  
      Decimal form: _________  
      Fraction form: _________

   b. 82 hundredths = ____ tenths + ____ hundredths  
      Decimal form: _________  
      Fraction form: _________

3. Circle hundredths to compose as many tenths as you can. Complete the number sentences. Represent each with a number bond as shown.

   a. [Diagram of hundredths and tenths]
      ____ hundredths = _____ tenth + _____ hundredths
Lesson 5 Homework

b. 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 

### hundredths = _____ tenths + _____ hundredths

4. Use both tenths and hundredths number disks to represent each number. Write the equivalent number in decimal, fraction, and unit form.

<table>
<thead>
<tr>
<th>a. (\frac{4}{100}) = 0. _____</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ hundredths</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b. (\frac{13}{100}) = 0. _____</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ tenth _____ hundredths</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c. _____ = 0.41</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ hundredths</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d. _____ = 0.90</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ tenths</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>e. _____ = 0. _____</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 tenths 3 hundredths</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>f. _____ = 0. _____</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 hundredths</td>
</tr>
</tbody>
</table>
Area Model Template

Model the equivalence of tenths and hundredths using the area model and number disks.

Date: 1/28/14
Lesson 6 Problem Set

Name ________________________________ Date ______________________

1. Shade the area models to represent the number, drawing horizontal lines to make hundredths as needed. Locate the corresponding point on the number line. Label with a point and record the mixed number as a decimal.

   a. \(1 \frac{15}{100} = \quad \) 

   b. \(2 \frac{47}{100} = \quad \)

2. Estimate to locate the points on the number lines.

   a. \(2 \frac{95}{100} \)

   b. \(7 \frac{52}{100} \)
3. Write the equivalent fraction and decimal for each of the following numbers.

<table>
<thead>
<tr>
<th>a. 1 one 2 hundredths</th>
<th>b. 1 one 17 hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. 2 ones 8 hundredths</td>
<td>d. 2 ones 27 hundredths</td>
</tr>
<tr>
<td>e. 4 ones 58 hundredths</td>
<td>f. 7 ones 70 hundredths</td>
</tr>
</tbody>
</table>

4. Draw lines from dot to dot to match the decimal form to both the unit form and fraction form. All unit forms and fractions have at least one match, and some have more than one match.

- 7 ones 13 hundredths
- 7 ones 3 hundredths
- 7 ones 3 tenths
- 7 tens 3 ones
- 7.30
- 7.3
- 7.03
- 7.13
- 73
- 73
- $7\frac{3}{100}$
- $7\frac{13}{100}$
- $7\frac{30}{100}$
Lesson 6 Exit Ticket

Name ___________________________ Date ________________

1. Estimate to locate the points on the number lines. Mark the point and label it as a decimal.

   a. \(7 \frac{20}{100}\)  
      
   b. \(1 \frac{75}{100}\)

2. Write the equivalent fraction and decimal for each number.

   a. 8 ones 24 hundredths  
   b. 2 ones 6 hundredths
Lesson 6 Homework

1. Shade the area models to represent the number, drawing horizontal lines to make hundredths as needed. Locate the corresponding point on the number line. Label with a point and record the mixed number as a decimal.
   a. \(2 \frac{35}{100} = \underline{.\underline{3}5}\)
   b. \(3 \frac{17}{100} = \underline{.\underline{1}7}\)

2. Estimate to locate the points on the number lines.
   a. \(5 \frac{90}{100}\)
   b. \(3 \frac{25}{100}\)
3. Write the equivalent fraction and decimal for each of the following numbers.

<table>
<thead>
<tr>
<th>a. 2 ones 2 tenths</th>
<th>b. 2 ones 16 hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. 3 ones 7 hundredths</td>
<td>d. 1 one 18 hundredths</td>
</tr>
<tr>
<td>e. 9 ones 62 hundredths</td>
<td>f. 6 ones 20 hundredths</td>
</tr>
</tbody>
</table>

4. Draw lines from dot to dot to match the decimal form to both the unit form and fraction form. All unit forms and fractions have at least one match, and some have more than one match.

- 4 ones 18 hundredths
- 4 ones 8 hundredths
- 4 ones 8 tenths
- 4 tens 8 ones
Lesson 6: Use the area model and number line to represent mixed numbers with units of ones, tenths, and hundredths in fraction and decimal forms.

Date: 1/28/14
Name ________________________________ Date __________________

1. Write a decimal number sentence to identify the total value of the number disks.
   a. 
   
   2 tens 5 tenths 3 hundredths

   ______ + ______ + ______ = ______

   b. 

   5 hundreds 4 hundredths

   ______ + ______ = ______

2. Use the place value chart to answer the following questions. Express the value of the digit in unit form.

<table>
<thead>
<tr>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
<th>.</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>6</td>
<td>.</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>

   a. The digit _____ is in the hundreds place. It has a value of ____________________________.

   b. The digit _____ is in the tens place. It has a value of ____________________________.

   c. The digit _____ is in the tenths place. It has a value of ____________________________.

   d. The digit _____ is in the hundredths place. It has a value of ________________________.

<table>
<thead>
<tr>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
<th>.</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3</td>
<td>2</td>
<td>.</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

   e. The digit _____ is in the hundreds place. It has a value of ____________________________.

   f. The digit _____ is in the tens place. It has a value of ____________________________.

   g. The digit _____ is in the tenths place. It has a value of ____________________________.

   h. The digit _____ is in the hundredths place. It has a value of ________________________.
3. Write each number in expanded form, using both decimal and fraction notation. The first one has been done for you.

<table>
<thead>
<tr>
<th>Decimal and Fraction Form</th>
<th>Expanded Form</th>
<th>Fraction Notation</th>
<th>Decimal Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.43 = 15 \frac{43}{100}</td>
<td>(1 \times 10) + (5 \times 1) + (4 \times \frac{1}{10}) + (3 \times \frac{1}{100})</td>
<td>(1 \times 10) + (5 \times 1) + (4 \times 0.1) + (3 \times 0.01)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 + 5 + \frac{4}{10} + \frac{3}{100}</td>
<td>10 + 5 + 0.4 + 0.03</td>
<td></td>
</tr>
<tr>
<td>21.4 = ______</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38.09 = ______</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50.2 = ______</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>301.07 = _____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>620.80 = _____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800.08 = _____</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Use the place value chart to answer the following questions. Express the value of the digit in unit form.

<table>
<thead>
<tr>
<th>hundreds</th>
<th>tens</th>
<th>ones</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

a. The digit ______ is in the hundreds place. It has a value of ____________________________.

b. The digit ______ is in the tens place. It has a value of ____________________________.

c. The digit ______ is in the tenths place. It has a value of ____________________________.

d. The digit ______ is in the hundredths place. It has a value of ________________________.

2. Complete the following chart.

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Expanded Form</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fraction Notation</td>
<td>Decimal Notation</td>
</tr>
<tr>
<td>422 (\frac{8}{100})</td>
<td>(300 + \frac{9}{10} + \frac{2}{100})</td>
<td></td>
</tr>
</tbody>
</table>
Lesson 7 Homework

1. Write a decimal number sentence to identify the total value of the number disks.
   a. 
      \[
      \begin{array}{c|c|c|c|c}
      & 10 & 10 & 10 & 0.1 & 0.1 & 0.1 & 0.01 & 0.01 \\
      \hline
      3 & & & & 4 & & & & 2
      \end{array}
      \]
      3 tens + 4 tenths + 2 hundredths

   b. 
      \[
      \begin{array}{c|c|c|c|c|c|c|c|c}
      & 100 & 100 & 100 & 100 & 0.01 & 0.01 & 0.01 \\
      \hline
      4 & & & & & & & & 3
      \end{array}
      \]
      4 hundreds + 3 hundredths

2. Use the place value chart to answer the following questions. Express the value of the digit in unit form.

   **Place Value Chart**
   | hundreds | tens | ones | . | tenths | hundredths |
   |----------|------|------| |--------|------------|
   | 8        | 2    | 7    | | 6      | 4          |

   a. The digit _____ is in the hundreds place. It has a value of ____________________________.
   b. The digit _____ is in the tens place. It has a value of ____________________________.
   c. The digit _____ is in the tenths place. It has a value of ____________________________.
   d. The digit _____ is in the hundredths place. It has a value of ________________________.

   **Place Value Chart**
   | hundreds | tens | ones | . | tenths | hundredths |
   |----------|------|------| |--------|------------|
   | 3        | 4    | 5    | | 1      | 9          |

   e. The digit _____ is in the hundreds place. It has a value of ____________________________.
   f. The digit _____ is in the tens place. It has a value of ____________________________.
   g. The digit _____ is in the tenths place. It has a value of ____________________________.
   h. The digit _____ is in the hundredths place. It has a value of ________________________.
3. Write each number in expanded form, using both decimal and fraction notation. The first one has been done for you.

<table>
<thead>
<tr>
<th>Decimal and Fraction Form</th>
<th>Expanded Form</th>
<th>Fraction Notation</th>
<th>Decimal Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.23 = $14 \frac{23}{100}$</td>
<td>$(1 \times 10) + (4 \times 1) + (2 \times \frac{1}{10}) + (3 \times \frac{1}{100})$</td>
<td>$(1 \times 10) + (4 \times 1) + (2 \times 0.1) + (3 \times 0.01)$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$10 + 4 + \frac{2}{10} + \frac{3}{100}$</td>
<td>$10 + 4 + 0.2 + 0.03$</td>
<td></td>
</tr>
<tr>
<td>25.3 = ________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39.07 = ________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.6 = ________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>208.90 = ________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>510.07 = ________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>900.09 = ________</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Use the area model to represent $\frac{250}{100}$. Complete the number sentence.
   a. $\frac{250}{100} = \underline{\hspace{1cm}}$ tenths = $\underline{\hspace{1cm}}$ ones $\underline{\hspace{1cm}}$ tenths = __.__

   b. In the space below, explain how you determined your answer to (a).

2. Draw number disks to represent the following decompositions:
   
   2 ones = $\underline{\hspace{1cm}}$ tenths
   
   2 tenths = $\underline{\hspace{1cm}}$ hundredths
   
   1 one 3 tenths = $\underline{\hspace{1cm}}$ tenths
   
   2 tenths 3 hundredths = $\underline{\hspace{1cm}}$ hundredths
3. Decompose the units to represent each number as tenths.

   a. $1 = \underline{\hspace{1cm}}$ tenths
   b. $2 = \underline{\hspace{1cm}}$ tenths
   c. $1.7 = \underline{\hspace{1cm}}$ tenths
   d. $2.9 = \underline{\hspace{1cm}}$ tenths
   e. $10.7 = \underline{\hspace{1cm}}$ tenths
   f. $20.9 = \underline{\hspace{1cm}}$ tenths

4. Decompose the units to represent each number as hundredths.

   a. $1 = \underline{\hspace{1cm}}$ hundredths
   b. $2 = \underline{\hspace{1cm}}$ hundredths
   c. $1.7 = \underline{\hspace{1cm}}$ hundredths
   d. $2.9 = \underline{\hspace{1cm}}$ hundredths
   e. $10.7 = \underline{\hspace{1cm}}$ hundredths
   f. $20.9 = \underline{\hspace{1cm}}$ hundredths

5. Complete the chart. The first one has been done for you.

<table>
<thead>
<tr>
<th>Decimal</th>
<th>Mixed Number</th>
<th>Tenths</th>
<th>Hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>$2 \frac{1}{10}$</td>
<td>$\frac{21}{10}$ tenths</td>
<td>$\frac{210}{100}$ hundredths</td>
</tr>
<tr>
<td>4.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. a. Draw number disks to represent the following decomposition:

3 ones 2 tenths = _______ tenths

<table>
<thead>
<tr>
<th>ones</th>
<th>.</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. 3 ones 2 tenths = _______ hundredths

2. Decompose the units.
   a. 2.6 = ____ tenths
   b. 6.1 = ____ hundredths
Name __________________________________________ Date ______________________

1. Use the area model to represent $\frac{220}{100}$. Complete the number sentence.
   
   a. $\frac{220}{100} = \underline{\hspace{1cm}}$ tenths $= \underline{\hspace{1cm}}$ ones $\underline{\hspace{1cm}}$ tenths $= \underline{\hspace{1cm}}.$

   b. In the space below, explain how you determined your answer to (a).

2. Draw number disks to represent the following decompositions:

   5 ones $= \underline{\hspace{1cm}}$ tenths  

   7 tenths $= \underline{\hspace{1cm}}$ hundredths

   

   2 ones 4 tenths $= \underline{\hspace{1cm}}$ tenths

   8 tenths 3 hundredths $= \underline{\hspace{1cm}}$ hundredths
3. Decompose the units to represent each number as tenths.

   a. \(1 = \underline{\ }\) tenths
   b. \(2 = \underline{\ }\) tenths

   c. \(1.3 = \underline{\ }\) tenths
   d. \(2.6 = \underline{\ }\) tenths

   e. \(10.3 = \underline{\ }\) tenths
   f. \(20.6 = \underline{\ }\) tenths

4. Decompose the units to represent each number as hundredths.

   a. \(1 = \underline{\ }\) hundredths
   b. \(2 = \underline{\ }\) hundredths

   c. \(1.3 = \underline{\ }\) hundredths
   d. \(2.6 = \underline{\ }\) hundredths

   e. \(10.3 = \underline{\ }\) hundredths
   f. \(20.6 = \underline{\ }\) hundredths

5. Complete the chart. The first one has been done for you.

<table>
<thead>
<tr>
<th>Decimal</th>
<th>Mixed Number</th>
<th>Tenths</th>
<th>Hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>(4 \frac{1}{10})</td>
<td>41 tenths (\frac{41}{10})</td>
<td>410 hundredths (\frac{410}{100})</td>
</tr>
<tr>
<td>5.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>68.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lesson 8: Use understanding of fraction equivalence to investigate decimal numbers on the place value chart expressed in different units.

Date: 1/28/14

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1. Express the lengths of the shaded parts in decimal form. Write a sentence that compares the two lengths. Use the expression shorter than or longer than in your sentence.
   a. 
   b. 
   c. List all four lengths from least to greatest.

2. Examine the mass of each item as shown below on the 1 kilogram scales. Put an X over the items that are heavier than the avocado.

   0.2 kg   0.12 kg   0.6 kg   0.61 kg
b. Express the mass of each item on the place value chart.

<table>
<thead>
<tr>
<th>ones (kilograms)</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>avocado</td>
<td></td>
<td></td>
</tr>
<tr>
<td>apple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bananas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>potato</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A. Express the mass of each item on the place value chart.

<table>
<thead>
<tr>
<th>ones (kilograms)</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>avocado</td>
<td></td>
<td></td>
</tr>
<tr>
<td>apple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bananas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>potato</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Record the volume of water in each cylinder on the place value chart below.

<table>
<thead>
<tr>
<th>Cylinders</th>
<th>ones (Liters)</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.6 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>0.3 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>0.9 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>0.97 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>0.19 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0.48 liter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compare the values using >, <, or =.

a. 0.9 L ______ 0.6 L
b. 0.48 L ______ 0.6 L
c. 0.3 L ______ 0.19 L
d. Write the volume of water in each beaker in order from least to greatest.
Lesson 9 Exit Ticket

Name __________________________ Date ____________________

1. 
   a. Doug measures the lengths of three strings and shades tape diagrams to represent the length of each string, as shown below. Express, in decimal form, the length of each string.

   String 1
   1 meter

   String 2
   1 meter

   String 3
   1 meter

   b. List the lengths of the strings in order from greatest to least.

2. Compare the values below using >, <, or =.
   a. 0.8 kg _____ 0.6 kg
   b. 0.36 kg _____ 0.5 kg
   c. 0.4 kg _____ 0.47 kg
Lesson 9 Homework

Name ________________________________ Date __________________

1. Express the lengths of the shaded parts in decimal form. Write a sentence that compares the two lengths. Use the expression shorter than or longer than in your sentence.
   a. 
   ![Image of a meter stick with shaded parts]

   b. 
   ![Image of a meter stick with shaded parts]

   c. List all four lengths from least to greatest.

2. Examine the mass of each item as shown below on the 1 kilogram scales. Put an X over the items that are heavier than the volleyball.
   a. 
   ![Images of scales with masses]
   
   0.15 kg  0.62 kg  0.43 kg  0.25 kg
b. Express the mass of each item on the place value chart.

<table>
<thead>
<tr>
<th>ones (kilograms)</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>baseball</td>
<td></td>
<td></td>
</tr>
<tr>
<td>volleyball</td>
<td></td>
<td></td>
</tr>
<tr>
<td>basketball</td>
<td></td>
<td></td>
</tr>
<tr>
<td>soccer ball</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c. Complete the statements below using the words heavier than or lighter than in your statements.

The soccer ball is _________________________ the baseball.

The volleyball is __________________________ the basketball.

3. Record the volume of water in each cylinder on the place value chart below.

A

<table>
<thead>
<tr>
<th>Cylinder</th>
<th>ones (liters)</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.7 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>0.62 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>0.28 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>0.4 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>0.85 liter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0.2 liter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compare the values using >, <, or =.

a. 0.4 L _____ 0.2 L
b. 0.62 L _____ 0.7 L
c. 0.2 L _____ 0.28 L
d. Write the volume of water in each beaker in order from least to greatest.
Lesson 9: Use the place value chart and metric measurement to compare decimals and answer comparison questions.

Date: 1/28/14

Rice Bag | ones (kilograms) | . | tenths | hundredths
---|---|---|---|---
A | | | |
B | | | |
C | | | |
D | | | |

Cylinder | ones (liters) | . | tenths | hundredths
---|---|---|---|---
A | | | |
B | | | |
C | | | |
D | | | |
Lesson 10 Problem Set

1. Shade the area models below, decomposing tenths as needed, to represent the pairs of decimal numbers. Fill in the blank with <, >, or = to compare the decimal numbers.

   a. 0.23 ________ 0.4
   b. 0.6 ________ 0.38
   c. 0.09 ________ 0.9
   d. 0.70 ________ 0.7

2. Locate and label the points for each of the decimal numbers on the number line. Fill in the blank with <, >, or = to compare the decimal numbers.

   a. 10.03 ________ 10.3
   b. 12.68 ________ 12.8
3. Use the symbols <, >, or = to compare.
   a. 3.42 _____ 3.75          b. 4.21 _____ 4.12
   c. 2.15 _____ 3.15          d. 4.04 _____ 6.02
   e. 12.7 _____ 12.70         f. 1.9 _____ 1.21

4. Use the symbols <, >, or = to compare. Use pictures as needed to solve.
   a. 23 tenths _____ 2.3        b. 1.04 _____ 1 one and 4 tenths
   c. 6.07 _______ $\frac{7}{10}$        d. 0.45 _______ $\frac{45}{10}$
   e. $\frac{127}{100}$ _____ 1.72      f. 6 tenths _______ 66 hundredths
Lesson 10 Exit Ticket

Name ____________________________________________ Date _______________________

1. Ryan says that 0.6 is less than 0.60 because it has fewer digits. Jessie says that 0.6 is greater than 0.60. Who is right? Why? Use the area models below to help explain your answer.

   0.6 _______ 0.60

2. Use the symbols <, >, or = to compare.
   a. 3.9 _____ 3.09
   b. 2.4 _____ 2 ones and 4 hundredths
   c. 7.84 _____ 78 tenths and 4 hundredths
1. Shade the parts of the area models below, decomposing tenths as needed, to represent the pairs of decimal numbers. Fill in the blank with <, >, or = to compare the decimal numbers.

   a. 0.19 ________ 0.3  
   b. 0.6 ________ 0.06
   c. 1.8 ________ 1.53  
   d. 0.38 ________ 0.7

2. Locate and label the points for each of the decimal numbers on the number line. Fill in the blank with <, >, or = to compare the decimal numbers.

   a. 7.2 ________ 7.02
   b. 18.19 ________ 18.3
3. Use the symbols <, >, or = to compare.
   a. 2.68 ______ 2.54  
   b. 6.37 _____ 6.73  
   c. 9.28 _____ 7.28  
   d. 3.02 _____ 3.2  
   e. 13.1 _____ 13.10  
   f. 5.8 _____ 5.92  

4. Use the symbols <, >, or = to compare. Use pictures as needed to solve.
   a. 57 tenths ______ 5.7  
   b. 6.2 _____ 6 ones and 2 hundredths  
   c. 33 tenths ______ 33 hundredths  
   d. 8.39 _____ 8 39/10  
   e. 236/100 _____ 2.36  
   f. 3 tenths _____ 22 hundredths
Lesson 10: Use area models and the number line to compare decimal numbers and record comparisons using <, >, and =.

Date: 1/28/14
Lesson 10: Use area models and the number line to compare decimal numbers and record comparisons using <, >, and =.

Date: 1/28/14
1. Plot the following points on the number line.

   a. $0.2, \frac{1}{10}, 0.33, \frac{12}{100}, 0.21, \frac{32}{100}$

   b. $3.62, 3.7, 3\frac{85}{100}, 3\frac{38}{100}, 3\frac{364}{100}$

   c. $6\frac{3}{10}, 6.31, \frac{628}{100}, \frac{62}{10}, 6.43, 6.40$
2. Arrange the following numbers in order from greatest to least using decimal form. Use the > symbol between each number.
   a. \( \frac{27}{100}, 2.07, \frac{71}{100}, 2\frac{27}{100}, 2.72 \)

   b. \( 12\frac{3}{10}, 13.2, \frac{134}{100}, 13.02, 12\frac{20}{100} \)

   c. \( 7\frac{34}{100}, 7\frac{4}{10}, 7\frac{3}{10}, \frac{750}{100}, 75, 7.2 \)

3. In the long jump event, Rhonda jumped 1.64 meters. Mary jumped 1 \( \frac{6}{10} \) meters. Kerri jumped \( \frac{94}{100} \) meter. Michelle jumped 1.06 meters. Who jumped the farthest?

4. It snowed 2 \( \frac{3}{10} \) feet in December, 2.14 feet in January, 2 \( \frac{19}{100} \) feet in February, and 1 \( \frac{1}{10} \) feet in March. During which month did it snow the most? During which month did it snow the least?
1. Plot the following points on the number line using decimal form.

1 one and 1 tenth, \( \frac{13}{10} \), 1 one and 20 hundredths, \( \frac{129}{100} \), 1.11, \( \frac{102}{100} \)

\[ \begin{array}{cccc}
1.0 & 1.1 & 1.2 & 1.3 \\
\end{array} \]

2. Arrange the following numbers in order from greatest to least using decimal form. Use the > symbol between each number.

5.6, \( \frac{605}{100} \), 6.15, 6 \( \frac{56}{100} \), \( \frac{516}{100} \), 6 ones and 5 tenths
1. Plot the following points on the number line using decimal form.

   a. \(0.6, \frac{5}{10}, 0.76, \frac{79}{100}, 0.53, \frac{67}{100}\)

   b. 8 ones and 15 hundredths, \(\frac{832}{100}, \frac{27}{100}, \frac{82}{100}, 8.1\)

   c. \(13 \frac{12}{100}, \frac{130}{10}, 13\) ones and 3 tenths, 13.21, 13 \(\frac{3}{100}\)
2. Arrange the following numbers in order from greatest to least using decimal form. Use the > symbol between each number.
   a. 4.03, 4 ones and 33 hundredths, $\frac{34}{100}$, $\frac{43}{100}$, $\frac{430}{1000}$, 4.31
   b. $17\frac{5}{10}$, 17.55, $\frac{157}{10}$, 17 ones and 5 hundredths, 15.71, $\frac{75}{100}$
   c. 8 ones and 19 hundredths, $9\frac{8}{10}$, $\frac{809}{100}$, 8.9, $\frac{1}{10}$

3. In a paper airplane contest, Matt’s airplane flew 9.14 meters. Jenna’s airplane flew $9\frac{4}{10}$ meters. Ben’s airplane flew $9\frac{04}{100}$ meters. Leah’s airplane flew 9.1 meters. Whose airplane flew the farthest?

4. Becky drank $1\frac{41}{100}$ liters of water on Monday, 1.14 liters on Tuesday, 1.04 liters on Wednesday, $\frac{11}{10}$ liters on Thursday, and $1\frac{40}{100}$ liters on Friday. Which day did Becky drink the most? Which day did Becky drink the least?
Decimal Number Flash Cards

3 tenths

0.2

0.17

34 hundredths

13 hundredths

4
Number Line Template
1. Complete the number sentence by expressing each part using hundredths. Model using the place value chart, as shown in Part (a).

   a. 1 tenth + 5 hundredths = ______ hundredths

   b. 2 tenths + 1 hundredth = ______ hundredths

   c. 1 tenth + 12 hundredths = ______ hundredths

2. Solve by converting all addends to hundredths before solving.

   a. 1 tenth + 3 hundredths = ______ hundredths + 3 hundredths = ______ hundredths

   b. 5 tenths + 12 hundredths = ______ hundredths + ______ hundredths = ______ hundredths

   c. 7 tenths + 27 hundredths = ______ hundredths + ______ hundredths = ______ hundredths

   d. 37 hundredths + 7 tenths = ______ hundredths + ______ hundredths = ______ hundredths
Lesson 12 Problem Set

3. Find the sum. Convert tenths to hundredths as needed. Write your answer as a decimal.
   a. \( \frac{2}{10} + \frac{8}{100} \)
   b. \( \frac{13}{100} + \frac{4}{10} \)
   c. \( \frac{6}{10} + \frac{39}{100} \)
   d. \( \frac{70}{100} + \frac{3}{10} \)

4. Solve. Write your answer as a decimal.
   a. \( \frac{9}{10} + \frac{42}{100} \)
   b. \( \frac{70}{100} + \frac{5}{10} \)
   c. \( \frac{68}{100} + \frac{8}{10} \)
   d. \( \frac{7}{10} + \frac{87}{100} \)

5. Beaker A has \( \frac{63}{100} \) liter of iodine. It is filled the rest of the way with water up to 1 liter. Beaker B has \( \frac{4}{10} \) liter of iodine. It is filled the rest of the way with water up to 1 liter. If both beakers are emptied into a large beaker, how much iodine will be in the large beaker?
Lesson 12 Exit Ticket

Name ________________________________ Date _______________

1. Complete the number sentence by expressing each part using hundredths. Use the place value chart to model.

<table>
<thead>
<tr>
<th>ones</th>
<th>tenths</th>
<th>hundredths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 tenth + 9 hundredths = ______ hundredths

2. Find the sum. Write your answer as a decimal.

\[
\begin{array}{c c c c}
4 & 73 \\
10 & 100 \\
\end{array}
\]
Lesson 12 Homework

Name ________________________________ Date ________________

1. Complete the number sentence by expressing each part using hundredths. Model using the place value chart, as shown in Part (a).

   a. 1 tenth + 5 hundredths = _____ hundredths

   b. 2 tenths + 3 hundredths = _____ hundredths

   c. 1 tenth + 14 hundredths = _____ hundredths

2. Solve by converting all addends to hundredths before solving.

   a. 1 tenth + 2 hundredths = _____ hundredths + 2 hundredths = _____ hundredths

   b. 4 tenths + 11 hundredths = _____ hundredths + _____ hundredths = _____ hundredths

   c. 8 tenths + 25 hundredths = _____ hundredths + _____ hundredths = _____ hundredths

   d. 43 hundredths + 6 tenths = _____ hundredths + _____ hundredths = _____ hundredths

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3. Find the sum. Convert tenths to hundredths as needed. Write your answer as a decimal.
   a. \( \frac{3}{10} + \frac{7}{100} \)  
   b. \( \frac{16}{100} + \frac{5}{10} \)  
   c. \( \frac{5}{10} + \frac{40}{100} \)  
   d. \( \frac{20}{100} + \frac{8}{10} \)

4. Solve. Write your answer as a decimal.
   a. \( \frac{5}{10} + \frac{53}{100} \)  
   b. \( \frac{27}{100} + \frac{8}{10} \)  
   c. \( \frac{4}{10} + \frac{78}{100} \)  
   d. \( \frac{98}{100} + \frac{7}{10} \)

5. Cameron measured \( \frac{65}{100} \) inches of rain water on the first day of April. On the second day of April, he measured \( \frac{83}{100} \) inches of rain water. How many inches of rain fell on the first two days of April?
Lesson 12:

Apply understanding of fraction equivalence to add tenths and hundredths.

Date: 1/28/14
1. Solve. Convert tenths to hundredths before finding the sum. Rewrite the complete number sentence in decimal form. Problems 1(a) and 1(b) are partially completed for you.

   a. \( \frac{3}{10} + \frac{3}{100} = \frac{10}{100} + \frac{3}{100} = \) ______

   2.1 + 0.03 = ______

   b. \( \frac{1}{10} + 5\frac{3}{100} = \frac{2}{100} + 5\frac{3}{100} = \) ______

   c. \( 3\frac{24}{100} + \frac{7}{10} \)

   d. \( 3\frac{24}{100} + 8\frac{7}{10} \)

2. Solve. Then, rewrite the complete number sentence in decimal form.

   a. \( \frac{9}{10} + \frac{40}{100} \)

   b. \( \frac{9}{10} + 2\frac{45}{100} \)

   c. \( 2\frac{4}{10} + 8\frac{90}{100} \)

   d. \( 6\frac{37}{100} + 7\frac{7}{10} \)
Lesson 13 Problem Set

3. Solve by rewriting the number sentence in fraction form. After solving, rewrite the complete number sentence in decimal form.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>6.4 + 5.3</td>
</tr>
<tr>
<td>b.</td>
<td>6.62 + 2.98</td>
</tr>
<tr>
<td>c.</td>
<td>2.1 + 0.94</td>
</tr>
<tr>
<td>d.</td>
<td>2.1 + 5.94</td>
</tr>
<tr>
<td>e.</td>
<td>5.7 + 4.92</td>
</tr>
<tr>
<td>f.</td>
<td>5.68 + 4.9</td>
</tr>
<tr>
<td>g.</td>
<td>4.8 + 3.27</td>
</tr>
<tr>
<td>h.</td>
<td>17.6 + 3.59</td>
</tr>
</tbody>
</table>
Name ________________________________ Date __________________

1. Solve by rewriting the number sentence in fraction form. After solving, rewrite the complete number sentence in decimal form.
   
   a. 7.3 + 0.95     
   b. 8.29 + 5.9
1. Solve. Convert tenths to hundredths before finding the sum. Rewrite the complete number sentence in decimal form. Problems 1(a) and 1(b) are partially completed for you.

<table>
<thead>
<tr>
<th></th>
<th>a. ( \frac{5}{10} + \frac{7}{100} = \frac{20}{100} + \frac{7}{100} = ) ______</th>
<th>b. ( \frac{5}{10} + \frac{3}{100} = \frac{20}{100} + \frac{7}{100} = ) ______</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.2 + 0.07 = ______</td>
<td></td>
</tr>
<tr>
<td>c. ( \frac{6}{10} + \frac{1}{100} )</td>
<td>d. ( \frac{6}{10} + \frac{7}{100} )</td>
<td></td>
</tr>
</tbody>
</table>

2. Solve. Then rewrite the complete number sentence in decimal form.

<table>
<thead>
<tr>
<th></th>
<th>a. ( \frac{9}{10} + \frac{10}{100} )</th>
<th>b. ( \frac{7}{10} + 2\frac{65}{100} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. ( \frac{3}{10} + \frac{87}{100} )</td>
<td>d. ( \frac{48}{100} + \frac{3}{10} )</td>
<td></td>
</tr>
</tbody>
</table>
3. Solve by rewriting the number sentence in fraction form. After solving, rewrite the complete number sentence in decimal form.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $2.1 + 0.87 = 2 \frac{1}{10} + \frac{87}{100}$</td>
<td>b. $7.2 + 2.67$</td>
</tr>
<tr>
<td>c. $7.3 + 1.8$</td>
<td>d. $7.3 + 1.86$</td>
</tr>
<tr>
<td>e. $6.07 + 3.93$</td>
<td>f. $6.87 + 3.9$</td>
</tr>
<tr>
<td>g. $8.6 + 4.67$</td>
<td>h. $18.62 + 14.7$</td>
</tr>
</tbody>
</table>
1. Barrel A contains 2.7 liters of water. Barrel B contains 3.09 liters of water. Together, how much water do the two barrels contain?

2. Alissa ran a distance of 15.8 kilometers one week and 17.34 kilometers the following week. How far did she run in the two weeks?
3. An apple orchard sold 140.5 kilograms of apples in the morning and 15.85 kilograms more apples in the afternoon than in the morning. How many total kilograms of apples were sold that day?

4. A team of three ran a relay race. The final runner’s time was the fastest, measuring 29.2 seconds. The middle runner’s time was 1.89 seconds slower than the final runner’s. The starting runner’s time was 0.9 seconds slower than the middle runner’s. What was the team’s total time for the race?
Lesson 14: Solve word problems involving the addition of measurements in decimal form.

Date: 1/28/14

Elise ran 6.43 kilometers on Saturday and 5.6 kilometers on Sunday. How many total kilometers did she run on Saturday and Sunday?
Name ________________________________  Date __________________

1. The snowfall in Year 1 was 2.03 meters. The snowfall in Year 2 was 1.6 meters. How many total meters of snow fell in Years 1 and 2?

2. A deli sliced 22.6 kilograms of roast beef one week and 13.54 kilograms the next. How many total kilograms of roast beef did the deli slice in the two weeks?
3. The school cafeteria served 125.6 liters of milk on Monday and 5.34 more liters of milk on Tuesday than on Monday. How many total liters of milk were served on Monday and Tuesday?

4. Max, Maria, and Armen were a team in a relay race. Max ran his part in 17.3 seconds. Maria was 0.7 seconds slower than Max. Armen was 1.5 seconds slower than Maria. What was the total time for the team?
Lesson 15: Express money amounts given in various forms as decimal numbers.

Date: 1/28/14

1. 100 pennies = $__.______
   100¢ = ___ dollar
2. 1 penny = $__.______
   1¢ = ___ dollar
3. 6 pennies = $__.______
   6¢ = ___ dollar
4. 10 pennies = $__.______
   10¢ = ___ dollar
5. 26 pennies = $__.______
   26¢ = ___ dollar

6. 10 dimes = $__.______
   100¢ = ___ dollar
7. 1 dime = $__.______
   10¢ = ___ dollar
8. 3 dimes = $__.______
   30¢ = ___ dollar
9. 5 dimes = $__.______
   50¢ = ___ dollar
10. 6 dimes = $__.______
    60¢ = ___ dollar

11. 4 quarters = $__.______
    100¢ = ___ dollar
12. 1 quarter = $__.______
    25¢ = ___ dollar
13. 2 quarters = $__.______
    50¢ = ___ dollar
14. 3 quarters = $__.______
    75¢ = ___ dollar

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Lesson 15 Problem Set

Solve. Give the total amount of money in fraction and decimal form.

15. 3 dimes and 8 pennies

16. 8 dimes and 23 pennies

17. 3 quarters, 3 dimes, and 5 pennies

18. 236 cents is what fraction of a dollar?

Solve. Express the answer as a decimal.

19. 2 dollars 17 pennies + 4 dollars 2 quarters

20. 3 dollars 8 dimes + 1 dollar 2 quarters 5 pennies

21. 9 dollars 9 dimes + 4 dollars 3 quarters 16 pennies
Lesson 15: Express money amounts given in various forms as decimal numbers.

Solve. Give the total amount of money in fraction and decimal form.

1. 2 quarters and 3 dimes

2. 1 quarter, 7 dimes, and 23 pennies

Solve. Express the answer as a decimal.

3. 2 dollars 1 quarter 14 pennies + 3 dollars 2 quarter 3 dimes
Lesson 15: Express money amounts given in various forms as decimal numbers.

Date: 1/28/14

1. 100 pennies = $___.____  100¢ = ___ dollar
2. 1 penny = $___.____  1¢ = ___ dollar
3. 3 pennies = $___.____  3¢ = ___ dollar
4. 20 pennies = $___.____  20¢ = ___ dollar
5. 37 pennies = $___.____  37¢ = ___ dollar
6. 10 dimes = $___.____  100¢ = ___ dollar
7. 2 dimes = $___.____  20¢ = ___ dollar
8. 4 dimes = $___.____  40¢ = ___ dollar
9. 6 dimes = $___.____  60¢ = ___ dollar
10. 9 dimes = $___.____  90¢ = ___ dollar
11. 3 quarters = $___.____  75¢ = ___ dollar
12. 2 quarters = $___.____  50¢ = ___ dollar
13. 4 quarters = $___.____  100¢ = ___ dollar
14. 1 quarter = $___.____  25¢ = ___ dollar
Solve. Give the total amount of money in fraction and decimal form.

15. 5 dimes and 8 pennies

16. 3 quarters and 13 pennies

17. 3 quarters, 7 dimes, and 16 pennies

18. 187 cents is what fraction of a dollar?

Solve. Express the answer in decimal form.

19. 1 dollar 2 dimes 13 pennies + 2 dollars 3 quarters

20. 2 dollars 6 dimes + 2 dollars 2 quarters 16 pennies

21. 8 dollars 8 dimes + 7 dollars 1 quarter 8 dimes
Lesson 16: Solve word problems involving money.

Use the RDW process to solve. Write your answer as a decimal.

1. Miguel had 1 dollar bill, 2 dimes, and 7 pennies. John had 2 dollar bills, 3 quarters, and 9 pennies. How much money did the two boys have in all?

2. Suilin needed 7 dollars 13 cents to buy a book. In her wallet, she found 3 dollar bills, 4 dimes, and 14 pennies. How much more money does Suilin need to buy the book?

3. Vanessa has 6 dimes and 2 pennies. Joachim has 1 dollar, 3 dimes, and 5 pennies. Jimmy has 5 dollars and 7 pennies. They want to put their money together to buy a game that cost $8.00. Do they have enough money to buy the game? If not, how much more money do they need?
4. A pen costs $2.29. A calculator costs 3 times as much as a pen. How much do a pen and a calculator cost together?

5. Krista has 7 dollars and 32 cents. Malory has 2 dollars and 4 cents. How much money does Krista need to give Malory so that each of them has the same amount of money?
Name ____________________________ Date ________________

Use the RDW process to solve. Write your answer as a decimal.

1. David’s mother told him that he could keep all the money he found under the sofa cushions in their house. David found 6 quarters, 4 dimes, and 26 pennies. How much money did David find altogether?
Use the RDW process to solve. Write your answer as a decimal.

1. Maria had 2 dollars, 3 dimes, and 4 pennies. Lisa had 1 dollar and 5 quarters. How much money did the two girls have in all?

2. Meiling needed 5 dollars 35 cents to buy a ticket to a show. In her wallet, she found 2 dollar bills, 11 dimes, and 5 pennies. How much more money does Meiling need to buy the ticket?

3. Joe had 5 dimes and 4 pennies. Jamal had 2 dollars, 4 dimes, and 5 pennies. Jimmy had 6 dollars and 4 dimes. They wanted to put their money together to buy a book that costs $10.00. Did they have enough? If not, how much more did they need?

5. Carlos has 8 dollars and 48 cents. Alissa has 4 dollars and 14 cents. How much money does Carlos need to give Alissa so that each of them has the same amount of money?
1. Write the following fractions as equivalent decimals. Then model each decimal with the given representation.

   a. \( \frac{2}{10} = \) 

   b. \( \frac{3}{100} = \) 

   c. \( \frac{4}{10} = \) 

   d. \( \frac{46}{100} = \) 

   e. \( \frac{76}{10} = \) 

   f. \( \frac{364}{100} = \) 

   g. \( \frac{47}{10} = \) 

   h. \( \frac{572}{100} = \)
2. Decompose tenths into hundredths using the area model. Express the equivalence of tenths and hundredths with fractions and with decimals.

   a. 3 tenths
      
      ![Diagram of 3 tenths]

   b. 1 and 7 tenths
      
      ![Diagram of 1 and 7 tenths]

3. Use number bonds to complete Parts (a) and (b) below:
   a. Decompose 3.24 by units.
   b. Compose 0.03, 0.5, and 2 as one decimal number.
4. Model the following equivalence on the place value chart using number disks.

20 hundredths = 2 tenths

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

5. Complete the following chart.

<table>
<thead>
<tr>
<th>Unit Form</th>
<th>Fraction</th>
<th>Fraction Expanded Form</th>
<th>Decimal Expanded Form</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 1 tenth 6 hundredths</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. 27/10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
<td>6.34</td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td>(1 × 10) + (6 × 1) + (5 × 0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td></td>
<td>(2 × 10) + (3 × 1) + (7 × 1/10) + (8 × 1/100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. Maya puts groceries into bags. The items and their weights in kilograms are given below.

<table>
<thead>
<tr>
<th>Bread</th>
<th>Bananas</th>
<th>Cheese</th>
<th>Carrots</th>
<th>Grapes</th>
<th>Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>0.34</td>
<td>0.56</td>
<td>25/100</td>
<td>56/100</td>
<td>34/100</td>
</tr>
</tbody>
</table>

a. Plot the weight of each item on the number line below.

b. Write a number sentence using decimals to record the weight of the bananas in expanded form.

c. Write a number sentence using fractions to record the weight of the grapes in expanded form.
Maya packs the eggs and cheese into one of the bags. Both items weigh $\frac{90}{100}$ kilogram.

d. Use the area model to show that $\frac{90}{100}$ can be renamed as tenths.

e. Use division to show how $\frac{90}{100}$ can be renamed as tenths.

Maya places the bread into the bag with the eggs and cheese. Together, all three items weigh 1 and 15 hundredths kilograms.

f. Use a model and words to explain how 1 and 15 hundredths can be written as a decimal and as a fraction.

The items in both bags weigh a total of $2 \frac{30}{100}$ kilograms.

g. Explain using a model and words how many tenths are in $2 \frac{30}{100}$. 
Name ____________________________ Date ______________

1. Decompose each fraction into hundredths using area models. Then write the equivalent number sentence using decimals.
   a. \( \frac{8}{10} = \) ___

   Decompose each fraction into hundredths. Then write the equivalent statement for each part using decimals.
   b. \( \frac{18}{10} = \) ___

   c. \( \frac{2}{10} = \) ___

   d. \( \frac{5}{10} = \) ___

2. Several points are plotted on the number lines below. Identify the decimal number associated with each point.

   A. _____  B. _____  C. _____

   D. _____  E. _____  F. _____
3. Use the symbols $>$, $=$, $<$ to compare the following. Justify your conclusions using pictures, numbers, or words.

a. $0.02 \, \bigcirc \, 0.22$

b. $0.6 \, \bigcirc \, 0.60$

c. $17$ tenths $\bigcirc \, 1.7$

d. $1.04 \, \bigcirc \, 1\frac{4}{10}$

e. $0.38 \, \bigcirc \, \frac{38}{10}$

f. $4.05 \, \bigcirc \, 4\frac{5}{100}$

g. $3$ tenths + $2$ hundredths $\bigcirc \, 1$ tenth + $13$ hundredths

h. $8$ hundredths + $7$ tenths $\bigcirc \, 6$ tenths + $17$ hundredths
4. Solve.
   a. Express your solution as a fraction of a meter. \(0.3 \text{ m} + 1.45 \text{ m}\)
   b. Express your solution as a fraction of a liter. \(1.7 \text{ L} + 0.82 \text{ L}\)
   c. Express your solution as a fraction of a dollar. \(4\ \text{ dimes } 1\ \text{ penny} + 77\ \text{ pennies}\)

5. Solve.
   a. \(\frac{7}{10} + \frac{8}{100}\)
   b. \(\frac{4}{10} + \frac{51}{100}\)
   c. \(\frac{5}{10} + \frac{68}{100}\)
   d. \(\frac{98}{100} + \frac{2}{10}\)
   e. \(\frac{12}{100} + \frac{12}{10}\)
   f. \(\frac{1}{10} + \frac{13}{100} + \frac{8}{10}\)
6. Answer the following questions about a track meet.
   a. Jim and Joe ran in a relay race. Jim had a time of 9.8 seconds. Joe had a time of 10.32 seconds. Together, how long did it take them to complete the race? Record your answer as a decimal.

   b. The times of the 5 fastest runners were 7.11 seconds, 7.06 seconds, 7.6 seconds, 7.90 seconds, and 7.75 seconds. Locate these times on the number line. Record the times as decimals and fractions. One has been completed for you.

   ![Number Line]

   c. Natalie threw a discus 32.04 meters. She threw 3.8 meters farther on her next throw. Write a statement to compare the two distances that Natalie threw the discus using >, <, or =.
d. At the concession stand, Marta spent 89 cents on a bottle of water and 5 dimes on a bag of chips. Shade the area models to represent the cost of each item.

![Area Model 1](image1)

![Area Model 2](image2)

e. Write a number sentence in fraction form to find the total cost of a water bottle and a bag of chips. After solving, write the complete number sentence in decimal form.

f. Brian and Sonya each have a cup. They mark their cups to show tenths. Brian and Sonya each fill their cups with 0.7 units of juice. However, Brian has more juice in his container. Explain how this is possible.
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