



# Getting to the Point with Decimal Fractions

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## Side-by-Side Comparison Chart

Minnesota Academic Standards	Common Core State Standards
<p><b>4.1.2.4</b> Read and write decimals with words and symbols; use place value to describe decimals in terms of thousands, hundreds, tens, ones, tenths, hundredths and thousandths.</p> <p><b>4.1.2.5</b> Compare and order decimals and whole numbers using place value, a number line and models such as grids and base 10 blocks.</p> <p><b>4.1.2.6</b> Read and write tenths and hundredths in decimal and fraction notations using words and symbols; know the fraction and decimal equivalents for halves and fourths.</p> <p><b>4.1.2.7</b> Round decimals to the nearest tenth. For example: The number 0.36 rounded to the nearest tenth is 0.4</p> <p><b>Minnesota Academic Standards:</b></p> <ul style="list-style-type: none"> <li>– Do not add or subtract decimal fractions.</li> <li>– Extend decimal fractions to thousandths.</li> <li>– Round decimal fractions with unequal places.</li> </ul>	<p><b>CCSS 4.NF.C.5</b> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.2 For example, express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</p> <p><b>CCSS 4.NF.C.6</b> Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as <math>\frac{62}{100}</math>; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</p> <p><b>CCSS 4.NF.C.7</b> Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual model.</p> <p><b>Common Core State Standards:</b></p> <ul style="list-style-type: none"> <li>– Add and subtract decimal fractions</li> <li>– Extend decimal fractions to hundredths only</li> <li>– Compare decimal fractions, but no rounding.</li> </ul>
<p><b>5.1.2.1</b> Read and write decimals using place value to describe decimals in terms of groups from millionths to millions.</p> <p><b>5.1.2.2</b> Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number.</p> <p><b>5.1.2.3</b> Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line.</p> <p><b>5.1.2.4</b> Recognize and generate equivalent decimals, fractions, mixed numbers and improper fractions in various contexts.</p> <p><b>5.1.2.5</b> Round numbers to the nearest 0.1, 0.01 and 0.001.</p> <p><b>5.1.3.1</b> Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.</p> <p><b>5.1.3.2</b> Model addition and subtraction of fractions and decimals using a variety of representations.</p>	<p><b>CCSS 5.NBT.A.1</b> Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and <math>\frac{1}{10}</math> of what it represents in the place to its left.</p> <p><b>CCSS 5.NBT.A.2</b> Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p> <p><b>CCSS 5.NBT.A.3</b> Read, write, and compare decimals to thousandths.</p> <p><b>CCSS 5.NBT.A.3.A</b> Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., <math>347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (\frac{1}{10}) + 9 \times (\frac{1}{100}) + 2 \times (\frac{1}{1000})</math>.</p> <p><b>CCSS 5.NBT.A.3.B</b> Compare two decimals to thousandths based on meanings of the digits in each place, using <math>&gt;</math>, <math>=</math>, and <math>&lt;</math> symbols to record the results of comparisons.</p> <p><b>CCSS 5.NBT.A.4</b> Use place value understanding to round decimals to any place.</p>

**5.1.3.3**

Estimate sums and differences of decimals and fractions to assess the reasonableness of results.

**5.1.3.4**

Solve real-world and mathematical problems requiring addition and subtraction of decimals, fractions and mixed numbers, including those involving measurement, geometry and data.

**Minnesota Academic Standards:**

- Do not multiply or divide decimal fractions.
- Extend decimal fractions to millionths.

**CCSS 5.NBT.B.7**

Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

**Common Core State Standards:**

- Multiply and divide decimal fractions
- Extend decimal fractions to thousandths only
- Use whole-number exponents to denote powers of 10.

# Target 10

Ones	Tenths	Total

Ones	Tenths	Total

Ones	Tenths	Total

# Target One



Tenths	Hundredths	Total

Tenths	Hundredths	Total

Tenths	Hundredths	Total

## Multiplication

1. Multiply the parts to figure out the total weight for each purchase.

<p><b>a.</b></p> <p style="text-align: center;">buy 5 bags</p> <div style="text-align: right; margin-right: 50px;">  <p><b>7.3 kg</b></p> </div> <p style="text-align: center;">(     ×     ) + (     ×     )</p> <p style="text-align: center;">_____ + _____ = _____ kg</p>	<p><b>b.</b></p> <p style="text-align: center;">buy 9 bags</p> <div style="text-align: right; margin-right: 50px;">  <p><b>4.2 kg</b></p> </div> <p style="text-align: center;">(     ×     ) + (     ×     )</p> <p style="text-align: center;">_____ + _____ = _____ kg</p>
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2. Write the products. Shade parts of the squares to match.

<p><b>a.</b></p> <p><math>0.5 \times 0.3 =</math> <input style="width: 100px; height: 20px;" type="text"/></p> <div style="border: 1px solid black; width: 100%; height: 100%; background-image: linear-gradient(to right, dashed 1px, transparent 1px), linear-gradient(to bottom, dashed 1px, transparent 1px); background-size: 20px 20px; background-position: 0 0;"></div>	<p><b>b.</b></p> <p><math>0.4 \times 0.5 =</math> <input style="width: 100px; height: 20px;" type="text"/></p> <div style="border: 1px solid black; width: 100%; height: 100%; background-image: linear-gradient(to right, dashed 1px, transparent 1px), linear-gradient(to bottom, dashed 1px, transparent 1px); background-size: 20px 20px; background-position: 0 0;"></div>	<p><b>c.</b></p> <p><math>0.6 \times 0.8 =</math> <input style="width: 100px; height: 20px;" type="text"/></p> <div style="border: 1px solid black; width: 100%; height: 100%; background-image: linear-gradient(to right, dashed 1px, transparent 1px), linear-gradient(to bottom, dashed 1px, transparent 1px); background-size: 20px 20px; background-position: 0 0;"></div>
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3. Write the common fractions that you could multiply to figure out each product. Then complete the equations.

<p><b>a.</b></p> <p><math>0.7 \times 0.05 =</math> <input style="width: 100px; height: 20px;" type="text"/></p> <div style="display: flex; justify-content: center; gap: 20px; margin-top: 10px;"> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> <span>×</span> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> <span>=</span> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> </div>	<p><b>b.</b></p> <p><math>0.4 \times 0.09 =</math> <input style="width: 100px; height: 20px;" type="text"/></p> <div style="display: flex; justify-content: center; gap: 20px; margin-top: 10px;"> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> <span>×</span> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> <span>=</span> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> </div>
<p><b>c.</b></p> <p><math>0.8 \times 0.03 =</math> <input style="width: 100px; height: 20px;" type="text"/></p> <div style="display: flex; justify-content: center; gap: 20px; margin-top: 10px;"> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> <span>×</span> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> <span>=</span> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> </div>	<p><b>d.</b></p> <p><math>0.6 \times 0.07 =</math> <input style="width: 100px; height: 20px;" type="text"/></p> <div style="display: flex; justify-content: center; gap: 20px; margin-top: 10px;"> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> <span>×</span> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> <span>=</span> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;">—</div> </div>

## Division

1. Complete the parts and then write the answer.

a. $\$8.60 \div 4$ is the same as	$\$ \underline{\hspace{1cm}}$	$\div 4$ plus	$\underline{\hspace{1cm}} \text{¢} \div 4 =$	$\$ \underline{\hspace{1cm}}$
b. $\$15.50 \div 5$ is the same as	$\$ \underline{\hspace{1cm}}$	$\div 5$ plus	$\underline{\hspace{1cm}} \text{¢} \div 5 =$	$\$ \underline{\hspace{1cm}}$
c. $\$12.90 \div 6$ is the same as	$\$ \underline{\hspace{1cm}}$	$\div 6$ plus	$\underline{\hspace{1cm}} \text{¢} \div 6 =$	$\$ \underline{\hspace{1cm}}$

2. Each large square represents one whole. Shade or outline parts to help you figure out the quotients. Then complete the equations.

a.	$2 \div 0.2 = \underline{\hspace{1cm}}$
b.	$2 \div 0.4 = \underline{\hspace{1cm}}$

3. Read the equation. Then complete the picture to help you write the answer.

a.	$8 \div 0.2 = \underline{\hspace{1cm}}$
b.	$4 \div 0.05 = \underline{\hspace{1cm}}$

4. Write the missing numbers so the statements are true.

a.	$0.9 \div 0.3$	$\underline{\hspace{1cm}}$ tenths $\div$ $\underline{\hspace{1cm}}$ tenths	$\underline{\hspace{1cm}} \div \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
b.	$0.6 \div 0.2$	$\underline{\hspace{1cm}}$ tenths $\div$ $\underline{\hspace{1cm}}$ tenths	$\underline{\hspace{1cm}} \div \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

# Deci-strips
