

Relate Fractions, Decimals, and Percents

Lesson 4-2

Name: _____

Date: _____

Class: _____

Key Vocabulary Level 1 support

Picture first, then the word, then a plain-language meaning. Say each word out loud.

25% means 25 out of 100

Percent

A way to compare a number to 100, shown with the % sign.

0.75 means seventy-five hundredths

Decimal

A number with a dot, like 0.5, that shows a part.

$1/2 = 0.5 = 50%$

Equivalent

Having the same value, just written a different way.

Common benchmarks: 25%, 50%, 75%

Benchmark

A familiar number you use to guess, like 50% or $1/2$.

\$40 shirt at 25% off: discount = \$10

Discount

Money taken off the first price to make it cheaper.

Key Ideas & Notes

- You're designing the scoring system for a new arcade game.
- Players earn points as fractions of the total possible score.
- The leaderboard shows scores as percentages, but the game engine uses decimals.
- You need to convert between all three forms to build the display!
- Complete the conversion table. Each row shows the same value in three forms.

Think About It

- What are three different ways to write the same number?
- If a player scored $\frac{3}{4}$ of the points, what percent is that?
- Are some fractions easier to convert than others?

My Notes

Guided Examples

Example 1

Convert $\frac{3}{5}$ to a percent.

Solution: $3 \div 5 = 0.6 = 60\%$.

Answer: A. 60%

Example 2

Convert $\frac{7}{20}$ to a percent.

Solution: $7 \div 20 = 0.35 = 35\%$.

Answer: A. 35%

Example 3

Which decimal is equivalent to 45%?

Solution: To convert a percent to a decimal, divide by 100: $45 \div 100 = 0.45$.

Answer: A. 0.45

Write About the Math

The Writing Revolution

I can explain my conversions using the words percent, decimal, equivalent, and benchmark.

1. Kernel Sentence subject + verb

Model: Percent is a way to compare a number to 100, shown with the % sign.

Porcentaje es una manera de comparar un número con 100, con el signo %.

Write a kernel sentence about percent. Use a subject and a verb.

Escribe una oración base sobre porcentaje. Usa un sujeto y un verbo.

2. Sentence Expansion because · but · so

Kernel: Percent matters in math

Porcentaje importa en matemáticas

Expand the kernel three ways. Add a reason, a contrast, and a result.

because
porque

Percent matters in math because ____.

Porcentaje importa en matemáticas porque ____.

but
pero

Percent matters in math, but ____.

Porcentaje importa en matemáticas, pero ____.

so
entonces

Percent matters in math, so ____.

Porcentaje importa en matemáticas, entonces ____.

3. Sentence Types 4 ways to write a math idea

Statement
Afirmación

Tell one true fact about percent.
Di un hecho verdadero sobre percent.

Percent ____.

Question
Pregunta

Ask a question about percent.
Haz una pregunta sobre percent.

How does ____ ?

¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about percent.
Muestra entusiasmo sobre percent.

Wow, ____ !

¡Guau, ____ !

Command
Mandato

Tell a partner what to do with percent.
Dile a un compañero qué hacer con percent.

First, ____ .

Primero, ____ .

4. Explain Your Reasoning use a sentence starter

____ as a percent is ____.

____ como porcentaje es ____.

They are equal because ____.

Son iguales porque ____.

I see this when ____.

Veo esto cuando ____.

Try It

Solve on your own. Check the answer key when you are done.

1. What fraction is equal to 0.75?

- A. $\frac{3}{4}$
- B. $\frac{7}{5}$
- C. $\frac{3}{5}$
- D. $\frac{7}{10}$

Show your work:

2. A game shows your score as $\frac{7}{8}$ complete. What percent is that?

- A. 87.5%
- B. 78%
- C. 75%
- D. 88%

Show your work:

Stretch Your Thinking Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A student says $\frac{3}{8}$ is greater than 40% because 3 and 8 are bigger numbers than 4 and 0. Is the student correct? Convert both values to the same form and explain.

Sentence starter: The student is ___ because $\frac{3}{8} = \underline{\quad} = \underline{\quad}\%$, which is ___ than 40%.

Show your work:

Reflect — Exit Ticket

Which shows 0.45 as a fraction and a percent?

- A. $\frac{9}{20}$ and 45%
- B. $\frac{45}{10}$ and 4.5%
- C. $\frac{4}{5}$ and 45%
- D. $\frac{9}{20}$ and 4.5%

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. $\frac{3}{4} - 0.75 = \frac{75}{100}$. Simplify by dividing both by 25: $75 \div 25 = 3$ and $100 \div 25 = 4$. So $0.75 = \frac{3}{4}$.
2. **Try It 2:** A. $87.5\% - 7 \div 8 = 0.875$, and $0.875 \times 100 = 87.5\%$.
3. **Exit Ticket:** A. $\frac{9}{20}$ and $45\% - 0.45 = \frac{45}{100} = \frac{9}{20}$ (simplified). $0.45 \times 100 = 45\%$.

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Percent is a way to compare a number to 100, shown with the % sign.
- **Expansion:** *because* gives a reason, *but* shows a contrast or exception, *so* shows a result. Answers vary; each must keep the kernel idea and add the correct kind of detail.
- **Sentence types:** Statement ends with a period, question with "?", exclamation with "!", and a command starts with an action verb (a "bossy" verb).