TOPIC 3

Analyze and Solve Percent Problems

In this topic, students extend their understanding of proportional relationships to percents. They progress from writing percents as proportions to using the percent equation to solve real-world problems.

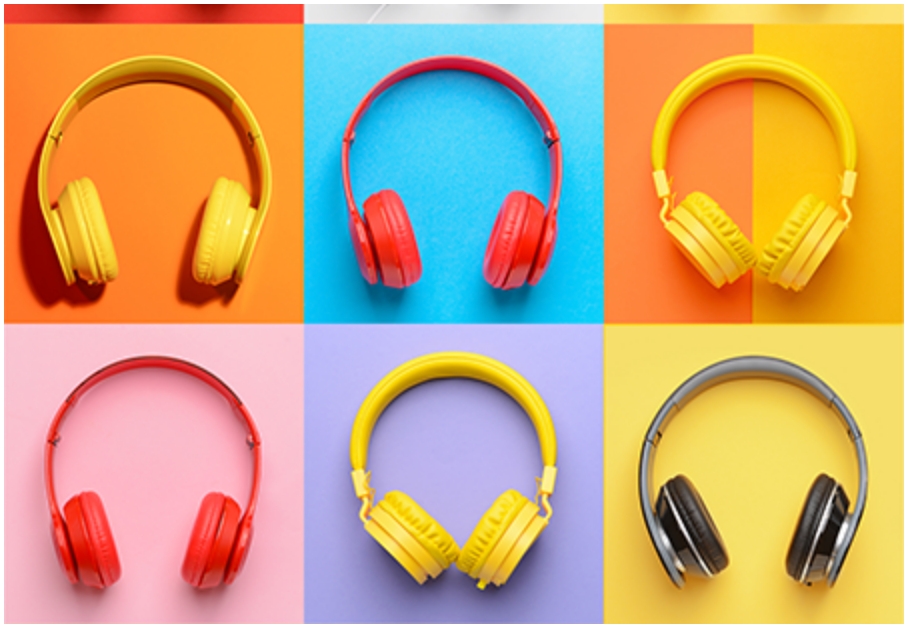
CONNECT THE MATH

People use percents in many ways, including coupons, tips, and commissions.

Retailers often use percents to advertise their prices, and sales circulars often include coupons for a certain percent off a price. Many stores will honor coupons on top of a sale price, which makes an understanding of percents a good skill to have.

A store is selling headphones for $20. During an end-of-year sale, everything in the store is 20% off, and there is an online coupon for a $5 rebate on a single item. The sale price of the headphones is $16 (80% of $20). After the rebate, the final cost is $11.

Look for situations that use percents, and discuss those situations with your family.



LESSON 3-1

Analyze Percents of Numbers

Equivalent ratios can be used to find the percent of a number. Percent is a ratio out of 100 that relates the ratio of two quantities.

LESSON OBJECTIVES

- Understand that equivalent ratios can be used to find percents.
- Analyze percents of numbers in real-world contexts.

HOW CAN YOU HELP WITH HOMEWORK

Review Lesson Content

Watch and share these video tutorials with your student:

- How Do You Use a Proportion to Find a Part of a Whole?
- How Do You Solve a Word Problem Using a Percent Proportion?

You can use these search terms and phrases to help your student find additional help

online:

- finding percents of numbers
- using percents greater than 100%
- using percents less than 1%

LESSON 3-2

Connect Percent and Proportion

Proportions can be used to solve a wide range of percent problems because there is a proportional relationship between the quantities.

LESSON OBJECTIVES

- Write a proportion to model a percent situation.
- Use a percent proportion to find an unknown part, whole, or percent.

HOW CAN YOU HELP WITH HOMEWORK

Review Lesson Content

Watch and share these video tutorials with your student:

- What's a Percent Proportion?
- How Do You Use a Proportion to Find a Part of a Whole?

You can use these search terms and phrases to help your student find additional help online:

- using a proportion to find a percent
- using a proportion to find part of a whole
- using a proportion to find a whole given a part and percent

LESSON 3-3

Represent and Use the Percent Equation

A percent can represent a proportional relationship, and the percent equation, $\text{part} = \text{percent} \bullet \text{whole}$, can be used to solve proportional relationship problems.

LESSON OBJECTIVES

- Use proportional reasoning to write the percent equation.
- Write and use the percent equation to solve problems involving proportional relationships.

HOW CAN YOU HELP WITH HOMEWORK

Review Lesson Content

Watch and share these video tutorials with your student:

- What Is the Percent Equation?

Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- percent equation

You can use these search terms and phrases to help your student find additional help online:

- using the percent equation
- finding a percent
- finding a part of a whole
- finding a whole given a part and a percent

LESSON 3-4

Solve Percent Change and Percent Error Problems

The percent equation can be manipulated to find the percent change ratio and percent error.

LESSON OBJECTIVES

- Calculate percent change and percent error.
- Understand the percent equation and how it leads to the percent change formula.

HOW CAN YOU HELP WITH HOMEWORK

Review Lesson Content

Watch and share these video tutorials with your student:

- What's a Percent of Change?
- How Do You Figure Out a Percent of Change?

Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- percent change
- percent error

You can use these search terms and phrases to help your student find additional help online:

- finding percent change as an increase
- finding percent change as a decrease
- finding percent error

LESSON 3-5

Solve Markup and Markdown Problems

A markup is a percent increase, and a markdown is a percent decrease. The methods used to calculate percent change can be used to calculate markups and markdowns.

LESSON OBJECTIVES

- Understand and calculate percent markups and markdowns.

HOW CAN YOU HELP WITH HOMEWORK

Review Lesson Content

Watch and share these video tutorials with your student:

- How Do You Figure Out the Price of a Marked-Up Item?
- How Do You Figure Out How Much Something Is Marked Down?

Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- markdown
- markup

You can use these search terms and phrases to help your student find additional help online:

- calculating percent markup
- calculating a selling price
- calculating markdown
- calculating sales tax

LESSON 3-6

Solve Simple Interest Problems

Simple interest is calculated by multiplying the interest rate by the principal, or initial amount. Each time period produces the same amount of interest if the principal does not change.

LESSON OBJECTIVES

- Understand what simple interest is and how it is calculated.
- Solve problems involving simple interest.

HOW CAN YOU HELP WITH HOMEWORK

Review Lesson Content

Watch and share these video tutorials with your student:

- What Is the Formula for Simple Interest?
- How Do You Use the Formula for Simple Interest?

Review Key Vocabulary

Review key vocabulary from this lesson in your student's glossary:

- interest rate
- principal
- simple interest

You can use these search terms and phrases to help your student find additional help online:

- simple interest formula
- calculating simple interest
- finding a percent of interest
- calculating the principal