

Solve Percent Problems

Family Letter

Dear Family,

In this module, *Solve Percent Problems*, students will use their prior knowledge of proportional relationships to develop understanding of solving percent problems. Becoming fluent in solving percent problems empowers students to use percents easily and confidently in everyday life.

What Did Students Learn Previously?

In a previous grade, students used rate reasoning to find the percent of a number, and to find the whole, given the part and the percent.

For example, suppose there are 450 students in the sixth grade and 28% of them ride their bike to school. In this situation, 450 is the whole and 28% is the percent. Using ratio reasoning, students determined that 126 sixth graders ride their bike to school.

What Will Students Learn in This Module?

Solving Percent Problems

- Students will apply and extend their understanding of percents to develop fluency in solving percent problems.
- Students will use various methods, such as ratio reasoning or properties of operations, to find **tax**, **tips**, **discounts**, **commission**, and **fees**.
- For example, suppose a smart TV is discounted 15% during a sale. If the original price of the TV is \$499, students will write and solve a proportion to find the sale price.

$$\begin{aligned}\frac{x}{499} &= \frac{15}{100} \\ \frac{x}{499} &= 0.15 \\ 499\left(\frac{x}{499}\right) &= (0.15)499 \\ x &= 74.85\end{aligned}$$

So, the amount of the discount is \$74.85, and the sale price of the TV is \$499 - \$74.85, or \$424.15.

- **Simple interest** can be found using the simple interest formula, $I = prt$. I represents the **interest**, p represents the **principal**, r represents the interest rate as a decimal, and t represents the time in years.

What Vocabulary Terms Will Students Use?

Term	Definition
commission	Payment made to an employee that is a percent of the amount sold.
discount	Amount by which the regular price of an item is reduced.
fee	Payment for a service.
gratuity	Additional amount of money paid in return for a service.
interest	Amount paid or earned for the use of the principal.
percent error	A ratio, written as a percent, that compares the inaccuracy of an estimate to the actual amount.
sales tax	State or local tax added to the price of an item or service.
simple interest	Interest calculated using specific periods of time.
wholesale cost	Amount a store pays for an item.

How You Can Provide Support

- Support your child's understanding of percent problems by asking them to explain how they can solve percent problems in everyday life.
 - Shopping:* Find the sales tax (a rate per dollar) for items, recognizing that the sales tax is based on the total cost of the items.
 - Dining Out:* Find the amount of the tip at a restaurant based on the total cost of the food.
 - Savings:* Find the amount of interest earned in a savings account over 3 years versus 10 years with the same interest rate and principal.
- Encourage your child to have a positive, growth-oriented attitude towards mathematics and their learning.
 - Encourage them to ask questions – both at home and in class. Sometimes, an answer to a question will generate more questions. That's how you know they are learning!
 - Encourage your child to embrace challenges and remind them that every challenge is an opportunity to learn something new.
 - Celebrate successes – both small and large.
- Contact me to arrange a time to discuss the specifics of your child's performance and how we can work together to help them succeed in this module.

Sincerely,

(Teacher's Name)

(Email/Phone)