Fractions, Decimals, and Percents Family Letter

Dear Family,

In this module, ***Fractions, Decimals, and Percents***, students will use their prior knowledge of fractions, decimals, ratios, and rates to develop understanding of percent and find the percent of a number. Having a solid understanding of percents will prepare students for their future as they calculate tips, understand taxes, and compare sale prices while shopping.

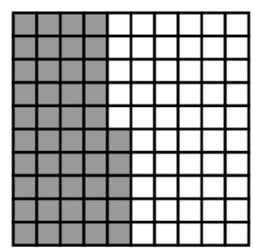
What Did Students Learn Previously?

In elementary grades, students understood that a fraction with a denominator of 10 can be written as an equivalent fraction with a denominator of 100.

For example, the fraction $\frac{4}{10}$ can be written as the equivalent fraction $\frac{40}{100}$ by multiplying both the numerator and denominator of $\frac{4}{10}$ by the same number, 10.

What Will Students Learn in This Module?

Percent as a Ratio



- Using models, such as bar diagrams and 10 by 10 grids, students will learn that a **percent** is a ratio that compares a number to 100. The 10 by 10 grid models the percent 45%. As a ratio, 45% means 45 per 100, or 45 : 100.
- Percents can be greater than 100% or less than 1%.

Relating Fractions, Decimals, and Percents

- Students will understand the relationship between fractions, decimals, and percents and build fluency with conversions between them. The percent 45% can be written as the fraction $\frac{45}{100}$, or $\frac{9}{20}$. As a decimal, this is 0.45.

Relating the Part, Percent, and Whole

- To solve problems involving percents, it is often necessary to find the **percent of a number** or to **find the whole given the part and the percent**.
- Sometimes, mental math can be used. For example, 45% of 300 can be thought of as a rate of 45 for every 100. Because there are three 100s in 300, there are three 45s in 45% of 300. So, 45% of 300 is 45 + 45 + 45, or 135.
- In cases where mental math is not advantageous, students can use bar diagrams, double number lines, ratio tables, and scaling with equivalent ratios to find the percent of a number.

- Estimation using **benchmark percents** is also a valuable tool when estimating the percent of a number. For example 48% of 292 is close to 50% of 300, or 150.

What Vocabulary Terms Will Students Use?

Term	Definition
percent	A ratio, or rate, that compares a number to 100.
benchmark percents	Common percents, such as 10%, 20%, 25%, and their multiples.

How You Can Provide Support

1. Support your child's understanding of percents by asking them to explain how percents are used in everyday life.
   - *News Articles or Media:* Find a news article or other form of media that includes a percent. Sometimes, information involving percents may be provided as a circle graph. Ask your child to explain what that percent means.
   - *Shopping:* Find an advertisement indicating a sale, where a percent is included. For example, a sale may be advertised as 20% off. Ask your child to explain what this means.
   - *Percents Greater than 100%:* It may be challenging to grasp that a percent can be greater than 100%. Place a dollar bill on your kitchen table and ask these questions.

Question	Response
What is 50% of this dollar bill?	*50 cents or $0.50*
What is 100% of this dollar bill?	*100 cents, or $1*
Place two dollar bills on the table. What percent of the original dollar bill is represented by these two dollars?	*200%*

2. 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.
3. 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,

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(Teacher's Name) (Email/Phone)