

Packet 12: Percent

Dear Parents/Guardians,

In Packet 12, students explore real world problems involving percent. Students use different strategies and representations to solve percent problems, including arithmetic and mental strategies, tape diagrams, tables, proportions and equations. Students learn about simple interest and solve problems involving interests and loans (see videos for additional support).

Percent of a Number

A percent of a number is the product of the percent (expressed as a quantity out of 100) and the number.

Example: Find 40% of 25. $\frac{40}{100} \times 25 = \frac{2}{5} \times 25 = 10$

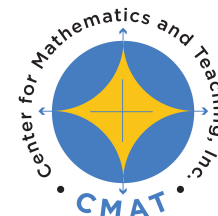
In grade 6, students learned how to find the percent of a number using strategies such as double number lines, chunking, equivalent fractions, and equations. See Resource Guide, Part 2, pages 32-34 for more information.

Percent Increase

Percent increases occur often as tips, taxes, and price mark-ups.

Example: Jake's lunch bill was \$30. What would his total amount be if he would like to leave a 25% tip?

Strategy 1: Traditional Step 1: Find the amount of the percent increase. $25\% \text{ of } \$30 \rightarrow 0.25(\$30) = \$7.50$ Step 2: Add the amount of the increase to the original quantity. $\$30 + \$7.50 = \$37.50$	
Strategy 2: Make a Tape Diagram Represents the cost of lunch. Represents the tip. <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> To find the value of one section, divide 30 by 4. $\frac{30}{4} = 7.50 \text{ or } 7.5$ </div> <div style="text-align: center;"> </div> </div> <p>The total cost with tip: $\\$30 + \\$7.50 = \\$37.50$</p>	
Strategy 3: Set up a Proportion $\frac{\text{before tip}}{\text{after tip}} \rightarrow \frac{100\%}{125\%} \rightarrow \frac{1}{1.25} = \frac{30}{x}$ $x = 30(1.25)$ $x = 37.50$	Strategy 4: Write an Equation $125\% \text{ of } 30 = 1.25(30)$ $= 37.50$



Mathlinks7

By the end of the packet, your student should know...

How to find percent increases and decreases

Lessons 12.1 and 12.3

How to solve problems involving simple interest

Lesson 12.2

How to solve percent problems involving tax, tip, discount, and commissions

Lessons 12.1 and 12.3

Additional Resources

Resource Guide (RG)
Part 2, pages 32-39

Simple Interest:

http://youtu.be/m_KUITA1BHK

<http://youtu.be/RzgpUZOpE9M>

Percent Decrease

Percent decreases occur often as discounts or markdowns.

Example: A dress costs \$30. How much would you pay if it is 25% off?

Strategy 1: Traditional Step 1: Find the amount of the percent decrease. $25\% \text{ of } \$30 \rightarrow 0.25(\$30) = \$7.50$ Step 2: Subtract the amount of the decrease from the original quantity. $\$30 - \$7.50 = \$22.50$	
Strategy 2: Make a Tape Diagram Represents the original price of dress. <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> To find the value of one section, divide 30 by 4. $\frac{30}{4} = 7.50 \text{ or } 7.5$ </div> <div style="text-align: center;"> </div> </div> <p>The price of dress with discount: $\\$30 - \\$7.50 = \\$22.50$ OR $3(\\$7.50) = \\22.50</p>	
Strategy 3: Set up a Proportion $\frac{\text{before discount}}{\text{after discount}} \rightarrow \frac{100\%}{75\%} \rightarrow \frac{1}{0.75} = \frac{30}{x}$ $x = \$30(0.75)$ $x = \$22.50$	Strategy 4: Write an Equation $75\% \text{ of } \$30 = 0.75(\$30)$ $= \$22.50$

