Rates and Percents

Lesson 12 Choosing a Percent Strategy

Standards 6.RP.A.3c

Learning target I can identify the unknown in a percent problem and select a strategy.

Materials Ratio tables, price labels, pencils, optional double number lines.

Lesson Flow 50 Minutes

0–5 Activate prior knowledge. Read the learning target. Ask students what they already know about choosing a percent strategy. Use a quick model or estimate to make their starting ideas visible.

5–17 Teach and model. Read the requested quantity first and identify the relevant model. Use part = (percent/100) × whole. You may also find 10%, 5%, or 1% and combine equal pieces. Label the part in the same units as the whole. Explain why the units and the final value fit the situation. Work through the two examples on the attached instruction page. Have students name the first step before showing it.

17–22 Guided practice. Revisit worked Example 2 with its solution covered. Students propose the next step and explain why it is valid; uncover and compare with the worked solution.

22–45 Independent classwork. Assign the attached 10 questions in order. Check items 1–3 for entry-level understanding, 4–6 for connected procedures, 7–8 for representation and explanation, and 9–10 for application or justification. Ask students to use the instruction-page notes area or extra grids for longer work.

45–50 Check understanding. Use classwork question 10 as an exit discussion: Find 30% of 60. Then explain a mental-math or fraction strategy that checks your answer. Compare the result with the answer key and ask a student to defend the method.

Support and Extension

Support Model item 1 together with the listed tools, then have students attempt item 2 independently. Watch rate units, reference wholes, and confusing percent with its decimal form.

Extension Ask students to solve a final item another way, draw a second representation, or create a related problem with a checked answer.

Next step Record which students can explain the target independently. Begin the next teaching session with a brief correction for any recurring error.

Name _____ Date _____

Rates and Percents

Lesson 12 Choosing a Percent Strategy

Standards 6.RP.A.3c

Learning target I can identify the unknown in a percent problem and select a strategy.

Learn and Discuss

Read the requested quantity first and identify the relevant model. Use part = (percent/100) × whole. You may also find 10%, 5%, or 1% and combine equal pieces. Label the part in the same units as the whole. Explain why the units and the final value fit the situation.

Example 1 50% of a number is 90. Find the number and check.
Solution 180. Whole = 90 ÷ 1/2 = 180. Check 50% × 180 = 90.
Example 2 30 students are 75% of a school’s enrollment. Find the enrollment.
Solution 40. Whole = 30 ÷ 3/4 = 40. Check 75% × 40 = 30.

Classwork Show Your Work

Complete the 10 problems on the following page. Refer to the examples, draw models, and check your results.

My Notes or Second Method

Lesson 12 Choosing a Percent Strategy

Name _____ Show calculations, models, and units.

1. Find 20% of 180.

2. 10% of a number is 12. Find the number and check.

3. 16 is what percent of 160?

4. Find 75% of 200.

5. 125% of a number is 200. Find the number and check.

6. 48/5 is what percent of 80?

7. Find 30% of 180. Then explain a mental-math or fraction strategy that checks your answer.

8. 9 students are 5% of a school’s enrollment. Find the enrollment.

9. 200 is what percent of 160? State which quantity is the reference whole.

10. Find 30% of 60. Then explain a mental-math or fraction strategy that checks your answer.

Choosing a Percent Strategy

Rates and Percents

1. 36
Reasoning 20/100 × 180 = 36.

2. 120
Reasoning Whole = 12 ÷ 1/10 = 120. Check 10% × 120 = 12.

3. 10%
Reasoning 16 ÷ 160 × 100 = 10%; the reference whole is 160.

4. 150
Reasoning 75/100 × 200 = 150.

5. 160
Reasoning Whole = 200 ÷ 5/4 = 160. Check 125% × 160 = 200.

6. 12%
Reasoning 48/5 ÷ 80 × 100 = 12%; the reference whole is 80.

7. 54
Reasoning 30/100 × 180 = 54.

8. 180
Reasoning Whole = 9 ÷ 1/20 = 180. Check 5% × 180 = 9.

9. 125%
Reasoning 200 ÷ 160 × 100 = 125%; the reference whole is 160.

10. 18
Reasoning 30/100 × 60 = 18.