Rates and Percents

Lesson 11 Finding the Percent Rate

Standards 6.RP.A.3c

Learning target I can find the percent that one quantity is of another.

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 finding the percent rate. Use a quick model or estimate to make their starting ideas visible.

5–17 Teach and model. Divide the part by the whole, then multiply by 100. Keep the same units in part and whole. The percent can be above 100 if the part is larger than the reference whole. 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: 225 is what percent of 180? State which quantity is the reference whole. 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 _____

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Learning target I can find the percent that one quantity is of another.

Learn and Discuss

Divide the part by the whole, then multiply by 100. Keep the same units in part and whole. The percent can be above 100 if the part is larger than the reference whole.

Example 1 40 is what percent of 200?
Solution 20%. 40 ÷ 200 × 100 = 20%; the reference whole is 200.
Example 2 200 is what percent of 160? State which quantity is the reference whole.
Solution 125%. 200 ÷ 160 × 100 = 125%; the reference whole is 160.

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 11 Finding the Percent Rate

Name _____ Show calculations, models, and units.

1. 8 is what percent of 80?

2. 22 is what percent of 220?

3. 20 is what percent of 100?

4. 88 is what percent of 220?

5. 24 is what percent of 60?

6. 6 is what percent of 40?

7. 40 is what percent of 200? State which quantity is the reference whole.

8. 165 is what percent of 220? State which quantity is the reference whole.

9. 20 is what percent of 80? State which quantity is the reference whole.

10. 225 is what percent of 180? State which quantity is the reference whole.

Finding the Percent Rate

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1. 10%
Reasoning 8 ÷ 80 × 100 = 10%; the reference whole is 80.

2. 10%
Reasoning 22 ÷ 220 × 100 = 10%; the reference whole is 220.

3. 20%
Reasoning 20 ÷ 100 × 100 = 20%; the reference whole is 100.

4. 40%
Reasoning 88 ÷ 220 × 100 = 40%; the reference whole is 220.

5. 40%
Reasoning 24 ÷ 60 × 100 = 40%; the reference whole is 60.

6. 15%
Reasoning 6 ÷ 40 × 100 = 15%; the reference whole is 40.

7. 20%
Reasoning 40 ÷ 200 × 100 = 20%; the reference whole is 200.

8. 75%
Reasoning 165 ÷ 220 × 100 = 75%; the reference whole is 220.

9. 25%
Reasoning 20 ÷ 80 × 100 = 25%; the reference whole is 80.

10. 125%
Reasoning 225 ÷ 180 × 100 = 125%; the reference whole is 180.