Rates and Percents

Lesson 7 Percents Fractions and Decimals

Standards 6.RP.A.3c

Learning target I can connect a percent with a fraction out of 100 and a decimal.

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 percents fractions and decimals. Use a quick model or estimate to make their starting ideas visible.

5–17 Teach and model. Percent means per 100. Write p% as p/100, simplify the fraction, and divide by 100 to write a decimal. To turn a decimal into a percent, multiply by 100. 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: Write 5% as a simplified fraction and decimal. 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 connect a percent with a fraction out of 100 and a decimal.

Learn and Discuss

Percent means per 100. Write p% as p/100, simplify the fraction, and divide by 100 to write a decimal. To turn a decimal into a percent, multiply by 100.

Example 1 Write 50% as a simplified fraction and decimal.
Solution 1/2; 0.5. 50% = 50/100 = 1/2; divide by 100 for 0.5.
Example 2 Write 125% as a simplified fraction and decimal. Explain why the decimal can be greater than 1.
Solution 5/4; 1.25. 125% = 125/100 = 5/4; divide by 100 for 1.25.

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

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Name _____ Show calculations, models, and units.

1. Write 10% as a simplified fraction and decimal.

2. Write 25% as a simplified fraction and decimal.

3. Write 50% as a simplified fraction and decimal.

4. Write 20% as a simplified fraction and decimal.

5. Write 12% as a simplified fraction and decimal.

6. Write 60% as a simplified fraction and decimal.

7. Write 40% as a simplified fraction and decimal.

8. Write 125% as a simplified fraction and decimal. Explain why the decimal can be greater than 1.

9. Write 75% as a simplified fraction and decimal.

10. Write 5% as a simplified fraction and decimal.

Percents Fractions and Decimals

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1. 1/10; 0.1
Reasoning 10% = 10/100 = 1/10; divide by 100 for 0.1.

2. 1/4; 0.25
Reasoning 25% = 25/100 = 1/4; divide by 100 for 0.25.

3. 1/2; 0.5
Reasoning 50% = 50/100 = 1/2; divide by 100 for 0.5.

4. 1/5; 0.2
Reasoning 20% = 20/100 = 1/5; divide by 100 for 0.2.

5. 3/25; 0.12
Reasoning 12% = 12/100 = 3/25; divide by 100 for 0.12.

6. 3/5; 0.6
Reasoning 60% = 60/100 = 3/5; divide by 100 for 0.6.

7. 2/5; 0.4
Reasoning 40% = 40/100 = 2/5; divide by 100 for 0.4.

8. 5/4; 1.25
Reasoning 125% = 125/100 = 5/4; divide by 100 for 1.25.

9. 3/4; 0.75
Reasoning 75% = 75/100 = 3/4; divide by 100 for 0.75.

10. 1/20; 0.05
Reasoning 5% = 5/100 = 1/20; divide by 100 for 0.05.