Lesson 4-1 · Session 1

# Percent Means Per Hundred

Name _____ Date _____ Period _____

Maryland Standard 6.AT.4 · Learning target — I can write a ratio as a percent by finding the equivalent ratio out of 100.

Show a model, calculation, or explanation. Answer every part and label units when needed.

Exercises 1–12 earn 1 point for a correct response and 1 for supporting work. Spiral Review and Test Practice earn 1 point each.

## Learn from a model

**REMEMBER**

- Percent means ‘per hundred’ — 45% means 45 out of 100.
- A percent can be written as a fraction with denominator 100, or as a decimal.
- Watch out — the whole always goes second. 18 out of 50 is not the same as 50 out of 18.
- Check it — a part smaller than the whole must give a percent below 100%.

**WORKED EXAMPLE**

Turning a Ratio into a Percent In a survey, 18 out of every 50 sixth graders pack their lunch. What percent pack their lunch?

**Step 1** Write the ratio: 18 out of 50.

**Step 2** Ask: what times 50 makes 100? 50 × 2 = 100

**Step 3** Multiply both terms by 2: 18 out of 50 36 out of 100

**Step 4** 36 out of 100 means 36%.

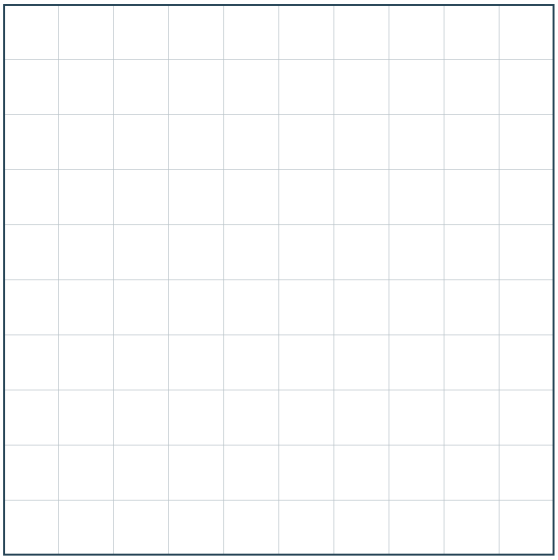
**Answer 36% of the sixth graders pack their lunch.**

## Practice

**1.** Shade 62 out of 100 squares on a 10 × 10 grid. What percent is shaded? _____

Answer _____

**SHADE THE GRID TO SHOW THE PERCENT**



**2.** Write 30% as a fraction out of 100, then simplify. _____

Answer _____

SHOW YOUR THINKING

**3.** Write 7% as a decimal. _____

Answer _____

SHOW YOUR THINKING

**4.** Scale each ratio to a per-hundred ratio, then write the percent.

a. 9 out of 20 = _____ out of 100 = _____ %
b. 3 out of 4 = _____ out of 100 = _____ %
c. 11 out of 50 = _____ out of 100 = _____ %
d. 4 out of 5 = _____ out of 100 = _____ %
e. 19 out of 25 = _____ out of 100 = _____ %

Answer _____

SHOW YOUR THINKING

**5.** Field Day Ribbons. Out of every 20 students at field day, 13 earned a ribbon. What percent of the students earned a ribbon?

Answer _____

SHOW YOUR THINKING

**6.** Recess Vote. A class of 25 students voted on a recess game. 16 of them picked kickball. What percent picked kickball?

Answer _____

SHOW YOUR THINKING

**7.** Fruit Basket. A basket holds 50 pieces of fruit. 22 of them are apples and the rest are oranges. Find the number of oranges, then write the oranges as a percent of all the fruit.

Answer _____

**SHOW YOUR THINKING**

**8.** Marisol says that 9 out of 10 is the same as 9%. Explain her mistake, then write the correct percent.

Answer _____

**EXPLAIN WITH MATHEMATICAL EVIDENCE**

**9.** Write 21 out of 25 as a percent.

Answer _____ percent

**SHOW YOUR THINKING**

**10.** Write 13 out of 20 as a percent.

Answer _____ percent

**SHOW YOUR THINKING**

**11.** Attendance. A class of 30 had 24 students present. What percent were present, and what percent were absent?

Answer _____ both percents

**SHOW YOUR THINKING**

**12.** Find the Mistake. For 12 out of 40, Jade wrote 12%. Explain the mistake and give the correct percent.

Answer _____ the mistake and the percent

EXPLAIN WITH MATHEMATICAL EVIDENCE

## Spiral review

**13.** From Lesson 3-6 Session 2. Convert 3 kilometres to meters.

Answer _____

SHOW YOUR THINKING

**14.** From Lesson 3-5 Session 1. Are 9 : 12 and 3 : 4 equivalent?

Answer _____

SHOW YOUR THINKING

**15.** From Lesson 2-7 Session 1. Find 46.8 ÷ 6.

Answer _____

SHOW YOUR THINKING

## Test practice

**16.** 7 out of 10 as a percent is —

| | |
|---|---|
| □ A. 17% | □ B. 7% |
| □ C. 10% | □ D. 70% |

**17.** 3 out of 4 as a percent is —

| | |
|---|---|
| □ A. 75% | □ B. 34% |
| □ C. 43% | □ D. 25% |

**18.** 50% means the same as —

| | |
|---|---|
| □ A. one fourth | □ B. one half |
| □ C. one fifth | □ D. one tenth |

## Check and revise

| CHECK YOUR MATHEMATICS | HOW DID IT GO? |
|---|---|
| Decide whether the question asks for an estimate or an exact result.<br>Every part answered / Work shown / Units labeled when needed | I can do this:<br>Independently / With a hint / With help<br>Question to revisit: _____ |

One correction or question I want to discuss: _____

Identify the whole. Check your result against 0%, 50%, and 100% of that amount.