

Percent Model Quest

Estimate each model, then find its exact percent.

GRADE 6 • 6.NS.1.a

6.NS.1.a "Estimate and determine the percent represented by a given model (e.g., number line, picture, verbal description), including percents greater than 100% and less than 1%.*"

NAME _____

DATE _____

FROM MODEL TO PERCENT

A percent tells how much of one whole a model represents, out of 100. Divide the represented amount by one whole, then change the result to a percent. A model can show more than one whole or less than one percent.

WORKED EXAMPLE

A panel has 36 equal lights. 9 lights are on. What percent of the panel is on?

1. Write the part of the whole: $9/36$.
2. Simplify: $9/36 = 1/4$.
3. Change to a percent: $1/4 = 25/100 = 25\%$.

Answer: 25%

PRACTICE 6 problems

- 1** A point is at 0.42 on a number line from 0 to 1. If 1 whole is 100%, what percent does the point represent?

ANSWER _____

- 2** A 10 by 10 grid has 73 squares shaded. What percent of the grid is shaded?

ANSWER _____

- 3** A strip is divided into 16 equal sections. 11 sections are colored. What percent of the strip is colored?

ANSWER _____

- 4** Two identical battery pictures each represent one whole battery and each is divided into 5 equal bars. All 5 bars in the first picture and 2 bars in the second picture are filled. What percent of one battery is filled altogether?

ANSWER _____

- 5** A giant image is made from 800 equal pixels. Four pixels are bright. What percent of the pixels are bright?

ANSWER _____

- 6** A bar is divided into 20 equal sections. 13 sections are shaded. What percent of the bar is shaded?

ANSWER _____

APPLY IT Show your work

- 1** A video playlist has 40 equal download blocks. The download screen shows 27 blocks filled. What percent of the playlist has downloaded?

WORK SPACE

ANSWER _____

- 2** A music app sets a weekly listening goal of 50 minutes. Jules listens for 75 minutes. What percent of the goal did Jules complete?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A point is at 0.375 on a number line from 0 to 1. If 1 represents 100%, what percent does the point represent? Explain your reasoning with a fraction or decimal.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A point is at 0.42 on a number line from 0 to 1. If 1 whole is 100%, what percent does the point represent?	42%
2	A 10 by 10 grid has 73 squares shaded. What percent of the grid is shaded?	73%
3	A strip is divided into 16 equal sections. 11 sections are colored. What percent of the strip is colored?	68.75%
4	Two identical battery pictures each represent one whole battery and each is divided into 5 equal bars. All 5 bars in the first picture and 2 bars in the second picture are filled. What percent of one battery is filled altogether?	140%
5	A giant image is made from 800 equal pixels. Four pixels are bright. What percent of the pixels are bright?	0.5%
6	A bar is divided into 20 equal sections. 13 sections are shaded. What percent of the bar is shaded?	65%

PART 2 • APPLY IT

1. **67.5%** Use $27/40$ for the downloaded part. Since $27/40 = 0.675$, the percent is 67.5%.
2. **150%** Compare the listening time to the goal: $75/50 = 3/2 = 1.5$. Change 1.5 to 150%.

CHALLENGE

37.5%; $0.375 = 3/8$, and $3/8$ of 100% is 37.5%.

Accept equivalent percent forms, including $1/2\%$ for 0.5%, $68\frac{3}{4}\%$ for 68.75%, and $37\frac{1}{2}\%$ for 37.5%. Students may use fractions, decimals, or proportions if their reasoning gives the exact percent.