

Shade to Decimal

Read fraction models and write matching decimals.

GRADE 5 • 5.NS.1.a

5.NS.1.a "Use concrete and pictorial models to represent fractions with denominators that are thirds, eighths, and factors of 100 in their equivalent decimal form.*"

NAME _____

DATE _____

MODEL THE PARTS

A fraction tells how many equal parts of a whole are shaded. Use a bar or grid to see the equal parts, then write the shaded amount as a decimal. Thirds make a decimal that repeats forever, so write repeating digits with dots.

WORKED EXAMPLE

A 20-square grid has 7 shaded squares. Write the shaded amount as a decimal.

1. Start with the fraction $7/20$.
2. Rename twentieths as hundredths: $7/20 = 35/100$.
3. Read 35 hundredths as 0.35.

Answer: 0.35

PRACTICE 6 problems

- 1** Model: $\left[\frac{\blacksquare}{\square}\right]\left[\frac{\blacksquare}{\square}\right]\left[\frac{\blacksquare}{\square}\right]\left[\frac{\square}{\square}\right]\left[\frac{\square}{\square}\right]\left[\frac{\square}{\square}\right]\left[\frac{\square}{\square}\right]$. The 8 boxes are equal. Write the shaded amount as a decimal.

ANSWER _____

- 2** A 100-square grid has 42 shaded squares. Write the shaded amount as a decimal.

ANSWER _____

- 3** Model: $\left[\frac{\blacksquare}{\square}\right]\left[\frac{\blacksquare}{\square}\right]\left[\frac{\square}{\square}\right]$. The 3 boxes are equal. Write the shaded amount as a decimal.

ANSWER _____

- 4** A bar is split into 4 equal parts. One part is shaded. Write the shaded amount as a decimal.

ANSWER _____

- 5** A 5 by 5 grid has 9 shaded squares. Write the shaded amount as a decimal.

ANSWER _____

- 6** Model: $\left[\frac{\blacksquare}{\square}\right]\left[\frac{\blacksquare}{\square}\right]\left[\frac{\blacksquare}{\square}\right]\left[\frac{\blacksquare}{\square}\right]\left[\frac{\blacksquare}{\square}\right]\left[\frac{\square}{\square}\right]\left[\frac{\square}{\square}\right]\left[\frac{\square}{\square}\right]\left[\frac{\square}{\square}\right]$. The 10 boxes are equal. Write the shaded amount as a decimal.

ANSWER _____

APPLY IT Show your work

- 1** In a skateboard game, Kai fills 5 of 8 equal sections on a progress bar. What decimal shows the part of the bar Kai filled?

WORK SPACE

ANSWER _____

- 2** At art club, 1 of 3 equal sections of a mural is painted. What decimal shows the painted part of the mural?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A streaming video is $\frac{1}{8}$ loaded. Then $\frac{3}{8}$ more of the video loads. What decimal of the video is loaded now? Explain how the eighths help you.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Model: $\begin{bmatrix} \blacksquare & \blacksquare & \blacksquare & \square & \square & \square & \square & \square \end{bmatrix}$. The 8 boxes are equal. Write the shaded amount as a decimal.	0.375
2	A 100-square grid has 42 shaded squares. Write the shaded amount as a decimal.	0.42
3	Model: $\begin{bmatrix} \blacksquare & \blacksquare & \square \end{bmatrix}$. The 3 boxes are equal. Write the shaded amount as a decimal.	0.666...
4	A bar is split into 4 equal parts. One part is shaded. Write the shaded amount as a decimal.	0.25
5	A 5 by 5 grid has 9 shaded squares. Write the shaded amount as a decimal.	0.36
6	Model: $\begin{bmatrix} \blacksquare & \blacksquare & \blacksquare & \blacksquare & \blacksquare & \blacksquare & \square & \square & \square & \square \end{bmatrix}$. The 10 boxes are equal. Write the shaded amount as a decimal.	0.6

PART 2 • APPLY IT

1. **0.625** Write the fraction as $\frac{5}{8}$. Five eighths is 0.625.
2. **0.333...** Write the fraction as $\frac{1}{3}$. One third is 0.333..., because the 3 repeats forever.

CHALLENGE

$\frac{4}{8} = \frac{1}{2} = 0.5$. The two amounts make 4 of 8 equal parts, which is one half.

Accept equivalent decimal forms with or without a leading zero, such as .6 or 0.6. For thirds, accept 0.333... or equivalent repeating-decimal notation.