

Benchmark Fraction Quest

Use 0, $\frac{1}{2}$, and 1 to compare fractions.

GRADE 3 • 3.NS.3.e

3.NS.3.e "Compare a fraction, less than or equal to one, to the benchmarks of 0, $\frac{1}{2}$, and 1 using area/region models, length models, and without models."

NAME _____

DATE _____

USE BENCHMARKS

A fraction with 0 parts equals 0, and a fraction with all of its equal parts equals 1. To compare a fraction to $\frac{1}{2}$, find half of the denominator. If the numerator is less than, equal to, or greater than that number, the fraction is less than, equal to, or greater than $\frac{1}{2}$.

WORKED EXAMPLE

Compare $\frac{5}{6}$ to $\frac{1}{2}$.

1. Half of 6 equal parts is 3 parts.
2. 5 parts is more than 3 parts.
3. So $\frac{5}{6}$ is greater than $\frac{1}{2}$.

Answer: $\frac{5}{6} > \frac{1}{2}$

PRACTICE 6 problems

- 1** Area model:  The model shows $\frac{3}{8}$. Compare $\frac{3}{8}$ to $\frac{1}{2}$.

ANSWER _____

- 2** Length model: 0 |---|---|---|---|---|---|---|---| 1 The point is at $\frac{4}{10}$. Compare $\frac{4}{10}$ to $\frac{1}{2}$.

ANSWER _____

- 3** Without a model, compare $\frac{9}{12}$ to $\frac{1}{2}$.

ANSWER _____

- 4** Compare $\frac{0}{9}$ to 0.

ANSWER _____

- 5** Compare $\frac{8}{8}$ to 1.

ANSWER _____

- 6** Without a model, compare $\frac{1}{7}$ to $\frac{1}{2}$.

ANSWER _____

APPLY IT Show your work

- 1** Ava filled in 2 of 4 spaces on her game scorecard. Is the fraction of spaces she filled less than, equal to, or greater than $\frac{1}{2}$?

WORK SPACE

ANSWER _____

- 2** Noah read $\frac{7}{8}$ of a graphic novel. Compare the fraction he read to $\frac{1}{2}$ and to 1.

WORK SPACE

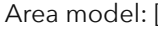
ANSWER _____

CHALLENGE One step up

CHALLENGE

A fraction has a denominator of 12. It is greater than $\frac{1}{2}$ but less than 1. Write all the possible fractions.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Area model:  The model shows $\frac{3}{8}$. Compare $\frac{3}{8}$ to $\frac{1}{2}$.	$\frac{3}{8} < \frac{1}{2}$
2	Length model: 0 --- --- --- --- --- --- --- --- 1 The point is at $\frac{4}{10}$. Compare $\frac{4}{10}$ to $\frac{1}{2}$.	$\frac{4}{10} < \frac{1}{2}$
3	Without a model, compare $\frac{9}{12}$ to $\frac{1}{2}$.	$\frac{9}{12} > \frac{1}{2}$
4	Compare $\frac{0}{9}$ to 0.	$\frac{0}{9} = 0$
5	Compare $\frac{8}{8}$ to 1.	$\frac{8}{8} = 1$
6	Without a model, compare $\frac{1}{7}$ to $\frac{1}{2}$.	$\frac{1}{7} < \frac{1}{2}$

PART 2 • APPLY IT

- $\frac{2}{4} = \frac{1}{2}$ Half of 4 spaces is 2 spaces. Ava filled exactly half of the spaces.
- $\frac{7}{8} > \frac{1}{2}$ and $\frac{7}{8} < 1$ Half of 8 is 4, and 7 is greater than 4. Noah did not read all 8 parts, so the fraction is less than 1.

CHALLENGE

$\frac{7}{12}$, $\frac{8}{12}$, $\frac{9}{12}$, $\frac{10}{12}$, $\frac{11}{12}$

Accept comparison words such as less than, equal to, and greater than in place of symbols. Accept equivalent forms when they correctly show the same comparison.