

Fraction Decimal Detectives

Match forms, compare values, and explain your choices.

GRADE 5 • 5.NS.1

5.NS.1 "The student will use reasoning and justification to identify and represent equivalency between fractions (with denominators that are thirds, eighths, and factors of 100) and decimals; and compare and order sets of fractions (proper..."

NAME _____

DATE _____

PART 1: PRACTICE, THE BIG IDEA

To change a fraction to a decimal, rename it with a denominator of 10, 100, or 1,000 when possible, then use place value. To compare numbers, line up decimal points or use benchmark amounts, such as one-half and one whole. A fraction with a numerator greater than its denominator is greater than 1.

WORKED EXAMPLE

Write $7/20$ as a decimal.

1. Multiply the numerator and denominator by 5.
2. $7/20 = 35/100$.
3. 35 hundredths is 0.35.

Answer: 0.35

PRACTICE 6 problems

1 Write $3/8$ as a decimal.

ANSWER _____

2 Write 0.64 as a fraction with a denominator of 100.

ANSWER _____

3 Write $<$, $>$, or $=$. $11/12$ ____ 0.9

ANSWER _____

4 Write $<$, $>$, or $=$. $1\ 1/4$ ____ 1.125

ANSWER _____

5 Order from least to greatest: $2/3$, 0.625, $3/4$, 0.6

ANSWER _____

6 A rectangle is divided into 8 equal parts. 6 parts are shaded. Write the shaded amount as a fraction and as a decimal.

ANSWER _____

APPLY IT Show your work

- 1** Part 2: Apply At the skate park, Jada practiced for $1\frac{1}{2}$ hours. Eli practiced for 1.375 hours. Who practiced longer? How much longer did that person practice?

WORK SPACE

ANSWER _____

- 2** Four teams recorded times for a marble-run challenge: $\frac{5}{6}$ minute, 0.81 minute, $\frac{11}{12}$ minute, and 0.875 minute. Order the times from shortest to longest.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Part 3: Challenge Order these numbers from greatest to least: $1\frac{1}{3}$, 1.375, $\frac{4}{3}$, 1.32. Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Write $\frac{3}{8}$ as a decimal.	0.375
2	Write 0.64 as a fraction with a denominator of 100.	64/100
3	Write $<$, $>$, or $=$. $\frac{11}{12}$ ____ 0.9	$>$
4	Write $<$, $>$, or $=$. $1\frac{1}{4}$ ____ 1.125	$>$
5	Order from least to greatest: $\frac{2}{3}$, 0.625, $\frac{3}{4}$, 0.6	0.6, 0.625, $\frac{2}{3}$, $\frac{3}{4}$
6	A rectangle is divided into 8 equal parts. 6 parts are shaded. Write the shaded amount as a fraction and as a decimal.	$\frac{6}{8}$ and 0.75

PART 2 • APPLY IT

1. **Jada practiced longer by 0.125 hour, or $\frac{1}{8}$ hour.** Rename $1\frac{1}{2}$ as 1.500. Then subtract: $1.500 - 1.375 = 0.125$.
2. **0.81, $\frac{5}{6}$, 0.875, $\frac{11}{12}$** $\frac{5}{6}$ is about 0.833, and $\frac{11}{12}$ is about 0.917. Compare these values with the given decimals.

CHALLENGE

$1.375 > 1\frac{1}{3} = \frac{4}{3} > 1.32$. Since $\frac{3}{8} = 0.375$, $1\frac{3}{8}$ would equal 1.375. Also, $1\frac{1}{3}$ and $\frac{4}{3}$ name the same amount.

Accept equivalent fraction forms when a problem asks for a fraction, such as $\frac{3}{4}$ for $\frac{6}{8}$ in problem 6. Accept valid comparison explanations using decimals, benchmarks, equivalent fractions, or number-line reasoning.