


Many Ways to Show a Decimal

Kid Decimals

Mrs. Dewey's class is playing Kid Decimals. These ten students are at the front of the class.



Mrs. Dewey wrote 0.4 on the board to represent part of this group.

- A. Does 0.4 represent the fraction of students who are wearing glasses? Why or why not?

B. What place would the 4 go in a place value chart?
- A. Name another part of this group that can be represented by 0.4.

B. What common fraction can you use to represent 0.4? What does the denominator represent? What does the numerator represent?
- Work with a partner. Draw the table below. Fill in the table with three fractions that fit some part of the group. Use your table to play Kid Decimals with another pair of students.

| Number of Students in the Whole Group | Number of Students in Part of the Group | Decimal Fraction in Words | Decimal Fraction | Common Fraction |
|---------------------------------------|---|---------------------------|------------------|-----------------|
| Ex. 10 | 4 | four-tenths | 0.4 | $\frac{4}{10}$ |
| A. 10 | | | | |
| B. 10 | | | | |
| C. 10 | | | | |

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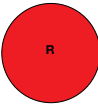
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Fraction Circle Pieces: Red, Pink, Green, and Purple

Work with a partner. Use only the red circle and the pink, purple, and green pieces for Questions 4–14.


Red




Pink



Green



Purple



For Questions 4–9, the red circle is the unit whole.

- A. How many purple pieces cover a red circle?

B. One purple piece covers what fraction of the red circle?

C. Write a common fraction for one purple piece. How did you know what denominator to use? How did you know what numerator to use?

D. Write a decimal fraction for one purple piece.
- Cover a pink piece with purple pieces.

A. Write two common fractions for one pink piece.

B. Write a decimal fraction for one pink piece. What digit is in the tenths place? What circle pieces does that digit represent?
- A. Write two common fractions for one green piece.

B. Write a decimal fraction for one green piece.
- A. Write a common fraction for nine purple pieces.

B. Write a decimal fraction for nine purple pieces.
- A. Write two common fractions for six purple pieces.

B. Write a decimal fraction for six purple pieces.
- A. Write a mixed number for a red circle and three purple pieces.

B. Write a decimal for a red circle and three purple pieces.
- Show the following decimal fractions using circle pieces. When possible, show more than one way.

A. 0.3 B. 0.8 C. 1.5 D. 1.2

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Many Ways to Show a Decimal

Questions 1–14 (SG pp. 463–465)

- A. Yes, four out of the ten students total are wearing glasses.

B. The tenths place
- A. 0.4 can also represent the number of boys in the group. There are four boys out of a total of ten students.

B. $\frac{4}{10}$; The denominator represents the total number of students, the numerator represents the number of students with glasses, or the number of boys.
- Tables and fractions will vary.
- A. 10 purple pieces

B. $\frac{1}{10}$ or 0.1

C. $\frac{1}{10}$; The denominator represents the number of purple pieces needed to make a whole; the numerator represents one piece.

D. 0.1
- A. $\frac{1}{2}$, $\frac{5}{10}$

B. 0.5; 5; it represents five purple pieces
- A. $\frac{1}{5}$, $\frac{2}{10}$

B. 0.2
- A. $\frac{9}{10}$

B. 0.9
- A. $\frac{6}{10}$, $\frac{3}{5}$

B. 0.6
- A. $1\frac{3}{10}$

B. 1.3
- Responses will vary. Two possible responses are shown for each.

A. three purple pieces or one green piece and one purple piece

B. eight purple pieces or four green pieces

C. one red piece and one pink piece or 15 purple pieces

D. one red piece and two purple pieces or 6 green pieces or twelve purple pieces

11. * Possible response: three purples and one green; $0.3 + 0.2 = 0.5$. See Figure 3.
12. A. pink
 B. green
 C. 3 purples
13. Possible response: three greens and four purples; $0.6 + 0.4 = 1.0$
14. A. =
 B. >
 C. <
 D. <
 E. =
 F. =

Number Sentences

For Questions 11–14, the red circle is one whole or 1.0. The pink piece is $\frac{1}{2}$ or 0.5.

Since one pink piece equals two greens and a purple piece, we can write a number sentence to represent the figure.

11. Show 0.5 another way using purple and green pieces. (Cover a pink piece with purple and green pieces.) Write a number sentence to represent this figure.

$0.5 = 0.2 + 0.2 + 0.1$

We can show 1 whole with two or more colors and write a number sentence to represent the figure.

12. Use the picture to the right to answer these questions:

A. Which piece shows 0.5?
 B. Which piece shows 0.2?
 C. Which pieces show 0.3?

13. Show 1 whole another way using green and purple pieces. Write a number sentence for this figure.

14. Copy the number sentences below. Use <, >, or = to make the statements true. Justify your answers using circle pieces.

For example, this figure shows that $0.4 = \frac{2}{5}$.

$0.4 = \frac{2}{5}$

A. $0.6 < \frac{3}{5}$ B. $0.6 > \frac{1}{2}$ C. $0.9 < 1.0$
 D. $1.1 < 1\frac{1}{5}$ E. $1.2 > \frac{12}{10}$ F. $1.2 < 1\frac{1}{5}$

Use the *Showing Decimals* pages in the *Student Activity Book* to show decimals in many different ways.

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Student Activity Book

Showing Decimals

Questions 1–21 (SAB pp. 409–418)

and

Homework

Questions 1–10 (SAB pp. 419–420)

Answers are shown in minis on following pages.

Answer Key • Lesson 3: Many Ways to Show a Decimal

Name _____ Date _____

Showing Decimals

Complete the missing information to show the fraction in each box below in many ways. The first one is an example. Use the *Writing Numbers in Words* page in the *Student Guide Reference* section.

Example

| | |
|---|--|
| $\frac{0.5}{\text{decimal fraction}}$ | <p>The red circle is the unit whole. drawing</p> |
| $\frac{\frac{5}{10} \text{ or } \frac{1}{2}}{\text{common fraction}}$ | |
| <u>five-tenths</u> words | |
| | |

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1.

| | |
|---|--|
| $\frac{1.5}{\text{decimal fraction}}$ | <p>The red circle is the unit whole. drawing</p> |
| $\frac{1\frac{1}{2}}{\text{common fraction}}$ | |
| <u>one and one-half</u> words | |
| | |

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Name _____ Date _____

2.

| | |
|---|--|
| $\frac{0.4}{\text{decimal fraction}}$ | <p>The red circle is the unit whole. drawing</p> |
| $\frac{\frac{4}{10}}{\text{common fraction}}$ | |
| <u>four-tenths</u> words | |
| | |

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3.

| | |
|--|--|
| $\frac{0.4}{\text{decimal fraction}}$ | <p>The red circle is the unit whole. drawing</p> |
| $\frac{\frac{2}{5}}{\text{common fraction}}$ | |
| <u>four-tenths or two-fifths</u> words | |
| | |

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Name _____ Date _____

4.

| | |
|--|--|
| $\frac{1.2}{\text{decimal fraction}}$ | <p>The red circle is the unit whole. drawing</p> |
| $\frac{1\frac{2}{10}}{\text{common fraction}}$ | |
| <u>one and two-tenths</u> words | |
| | |

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5.

| | |
|---|--|
| $\frac{1.2}{\text{decimal fraction}}$ | <p>The red circle is the unit whole. drawing</p> |
| $\frac{1\frac{1}{5} \text{ or } 1\frac{2}{10}}{\text{common fraction}}$ | |
| <u>one and one-fifth or one and two-tenths</u> words | |
| | |

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6.

| | |
|---|--|
| $\frac{0.9}{\text{decimal fraction}}$ | <p>The red circle is the unit whole. drawing</p> |
| $\frac{\frac{9}{10}}{\text{common fraction}}$ | |
| <u>nine-tenths</u> words | |
| | |

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7.

| | |
|--|--|
| $\frac{1.0}{\text{decimal fraction}}$ | <p>The red circle is the unit whole. drawing</p> |
| $\frac{1 \text{ or } \frac{5}{5}}{\text{common fraction}}$ | |
| <u>one whole or five-fifths</u> words | |
| | |

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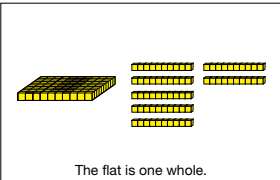
Name _____ Date _____

8.

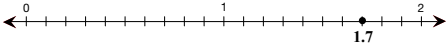
$\frac{1.7}{}$
decimal fraction

$1\frac{7}{10}$
common fraction

one and seven-tenths
words



The flat is one whole.
drawing



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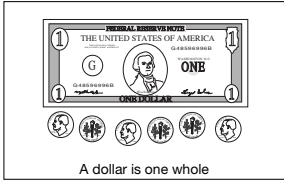
Name _____ Date _____

10.

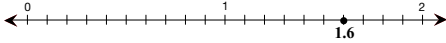
$\frac{1.6 \text{ or } 1.60}{}$
decimal fraction

$1\frac{6}{10}$
common fraction

one and six-tenths
words



A dollar is one whole
drawing



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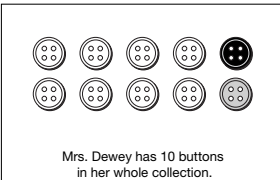
Name _____ Date _____

12.

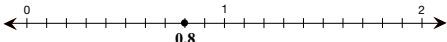
$\frac{0.8 \text{ white}}{}$
decimal fraction

$\frac{8}{10} \text{ white}$
common fraction

eight-tenths white
words



Mrs. Dewey has 10 buttons
in her whole collection.
drawing



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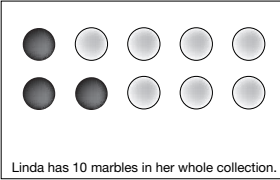
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13.

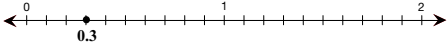
$\frac{0.3 \text{ black}}{}$
decimal fraction

$\frac{3}{10} \text{ black}$
common fraction

three-tenths black
words



Linda has 10 marbles in her whole collection.
drawing



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14.

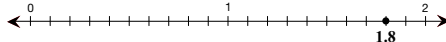
$\frac{1.8}{}$
decimal fraction

$1\frac{8}{10}$
common fraction

one and eight-tenths
words

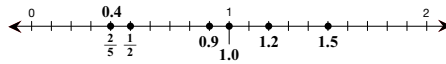
Drawings will vary.

The _____ is one whole.
Make your own drawing.



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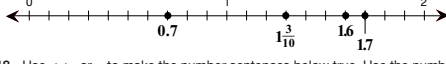
15. Use Questions 1–7 to put the following numbers on the number line below:
 $\frac{1}{2}$, 1.5, $\frac{2}{5}$, 1.2, 0.9, 1.0, 0.4.



16. Use <, >, or = to make the number sentences below true. Use the number line in Question 17 to help you.

A. 1.5 = $\frac{1}{2}$ B. $\frac{2}{5}$ < 0.9 C. 1.2 > 0.9

17. Use Questions 8–11 to put the following numbers on the number line below:
1.7, $1\frac{3}{10}$, 1.6, 0.7.



18. Use <, >, or = to make the number sentences below true. Use the number line in Question 17 to help you.

A. 1.7 > $\frac{3}{10}$ B. 0.7 < 0.9 C. 1.7 > 1.6

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Answer Key • Lesson 3: Many Ways to Show a Decimal

Name _____ Date _____

✓ Check-In: Questions 19-21

Complete the missing information to show the fraction in Questions 19 and 20 in many ways. Use the *Writing Numbers in Words* page in the *Student Guide Reference* section.

19.

| | |
|------------------------------------|--|
| 1.1 decimal fraction | Drawings will vary. The _____ is one whole. Make your own drawing. |
| $1\frac{1}{10}$ common fraction | |
| One and one-tenth words | |

20.

| | |
|-----------------------------------|---|
| 0.6 decimal fraction | Drawings will vary. The _____ is one whole. drawing |
| $\frac{6}{10}$ common fraction | |
| six-tenths words | |

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21. Which is larger, 1.1 or 0.6? Tell how you know.

Possible response: 1.1 is larger than 0.6.
10 tenths make one whole, so $1.1 = \frac{10}{10} + \frac{1}{10} = \frac{11}{10}$.
0.6 means six tenths or $\frac{6}{10}$. $\frac{11}{10} > \frac{6}{10}$ so 1.1 is larger.

or

Showing Decimals
Check-In: Questions 19-21
Feedback Box

| Expectation | Check In | Comments |
|--|----------|----------|
| • Using drawings and number lines. [Q# 19-20] | E5 | |
| • Using words and numbers. [Q# 19-20] | E6 | |
| Make connections among representations of decimals. [Q# 19-20] | E7 | |
| Compare decimals. [Q# 21] | E8 | |

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Name _____ Date _____

Homework

Fill in each column so that each fraction is shown four different ways.

| Common Fraction | Decimal Fraction | Drawing | Number Line |
|-----------------|------------------|---------|-------------|
| $\frac{1}{10}$ | 0.1 | | |
| $\frac{2}{10}$ | 0.2 | | |
| $\frac{3}{10}$ | 0.3 | | |
| $\frac{4}{10}$ | 0.4 | | |
| $\frac{5}{10}$ | 0.5 | | |

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Name _____ Date _____

| Common Fraction | Decimal Fraction | Drawing | Number Line |
|----------------------|------------------|---------|-------------|
| $\frac{6}{10}$ | 0.6 | | |
| $\frac{7}{10}$ | 0.7 | | |
| $\frac{8}{10}$ | 0.8 | | |
| $\frac{9}{10}$ | 0.9 | | |
| $\frac{10}{10}$ or 1 | 1.0 | | |

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