

## Unit 4 Lesson 5: Say It with Decimals

### 1 Notice and Wonder: Fractions to Decimals (Warm up)

#### Student Task Statement

A calculator gives the following decimal representations for some unit fractions:

$$\frac{1}{2} = 0.5$$

$$\frac{1}{7} = 0.142857143$$

$$\frac{1}{3} = 0.3333333$$

$$\frac{1}{8} = 0.125$$

$$\frac{1}{4} = 0.25$$

$$\frac{1}{9} = 0.1111111$$

$$\frac{1}{5} = 0.2$$

$$\frac{1}{10} = 0.1$$

$$\frac{1}{6} = 0.1666667$$

$$\frac{1}{11} = 0.0909091$$

What do you notice? What do you wonder?

## 2 Repeating Decimals

### Student Task Statement

1. Use long division to express each fraction as a decimal.

$$\frac{9}{25}$$

$$\frac{11}{30}$$

$$\frac{4}{11}$$

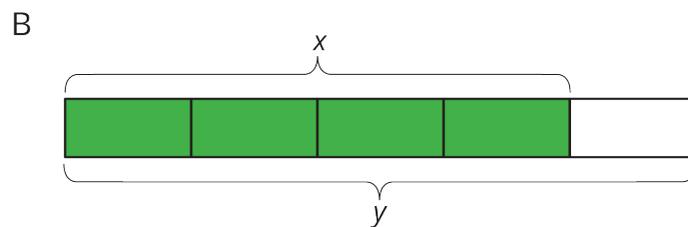
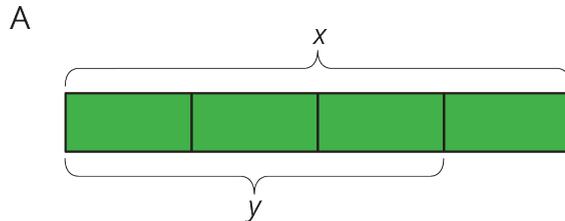
2. What is similar about your answers to the previous question? What is different?
3. Use the decimal representations to decide which of these fractions has the greatest value. Explain your reasoning.

### 3 More and Less with Decimals

#### Student Task Statement

1. Match each diagram with a description and an equation.

Diagrams:



Descriptions:

An increase by  $\frac{1}{4}$

An increase by  $\frac{1}{3}$

An increase by  $\frac{2}{3}$

A decrease by  $\frac{1}{5}$

A decrease by  $\frac{1}{4}$

Equations:

$$y = 1.6x$$

$$y = 1.3x$$

$$y = 0.75x$$

$$y = 0.4x$$

$$y = 1.25x$$

2. Draw a diagram for one of the unmatched equations.

## 4 Card Sort: More Representations (Optional)

### Student Task Statement

Your teacher will give you a set of cards that have proportional relationships represented 2 different ways: as descriptions and equations. Mix up the cards and place them all face-up.

Take turns with a partner to match a description with an equation.

1. For each match you find, explain to your partner how you know it's a match.
2. For each match your partner finds, listen carefully to their explanation, and if you disagree, explain your thinking.
3. When you have agreed on all of the matches, check your answers with the answer key. If there are any errors, discuss why and revise your matches.