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3.1.3 How are the representations related?

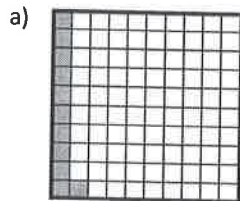
Connecting Percents with Decimals and Fractions



3-36 BUILD IT/DRAW IT, WRITE IT, SAY IT

Use the resource Page to:

1. Draw a diagram of the portion on your resource page.
2. Write the portion in at least two different equivalent representations. (Giant One)
3. Write out how you could use words to say or name the portion two different ways.



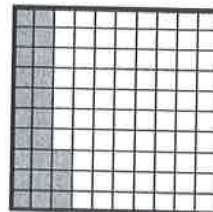
b) $\frac{2}{10}$

} on resource page

c) 80 pieces out of 100 total pieces

d) 150 %

3-37 Erik and Tate cannot agree on the amount shaded on the 100% block shown at right. Erik says, "It shows 2 tenths of the 100% block... and 3 hundredths of the block," while Tate says, "It shows 23 hundredths of the whole block."

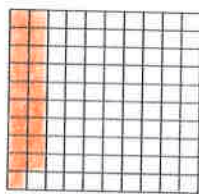


a) What would you tell Tate and Erik? Justify your response with words and pictures.

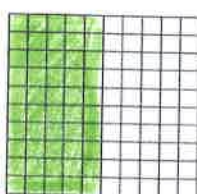


b) Another representation of the number shown on the 100% block above is a decimal, which would be written as 0.23. Compare this number to how Erik and Tate described the value. What similarities do you notice?

3-38 If 0.19 can be represented with 2 tenths and 3 hundredths, how can the number 0.19 be represented? What about 0.5? Draw a picture of each of these decimals on the diagrams below.



$0.19 = 19\%$

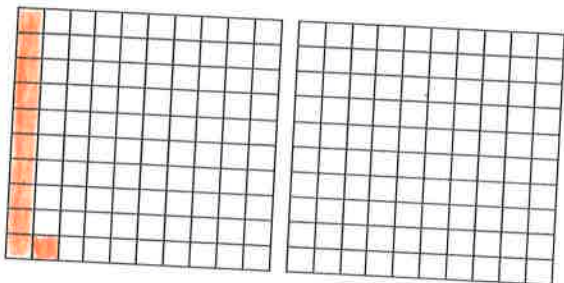


$0.5 = 50\%$

$\frac{5}{10} \cdot \frac{10}{10} = \frac{50}{100}$

Build It, Draw It, Write It, Say It

a. Build It:



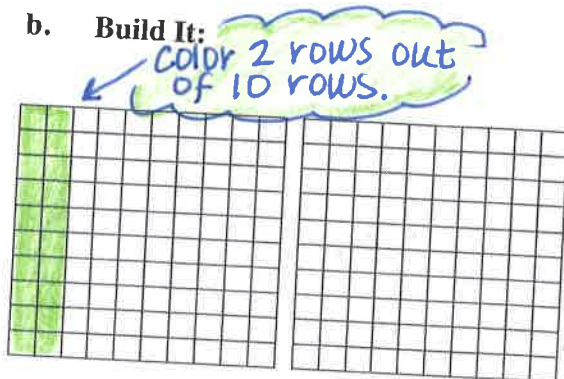
Write It: $\frac{11}{100}$ or 11%.

$$\frac{11}{100} \times \frac{2}{2} = \frac{22}{200} \quad \frac{11}{100} \times \frac{3}{3} = \frac{33}{300}$$

Say It:

11 percent
11 out of 100
22 out of 200

b. Build It:



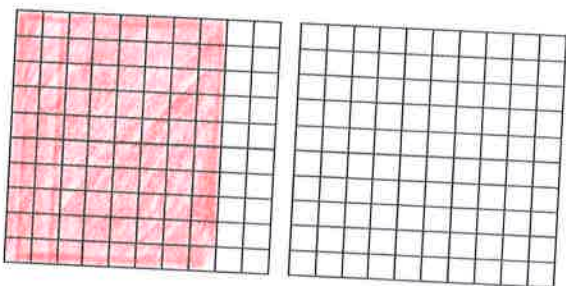
Write It: 20%.

$$\frac{2}{10} \times \frac{10}{10} = \frac{20}{100} \quad \frac{2}{10} \times \frac{3}{3} = \frac{6}{300}$$

Say It:

2 out of 10
20 percent
20 out of 100

c. Build It:



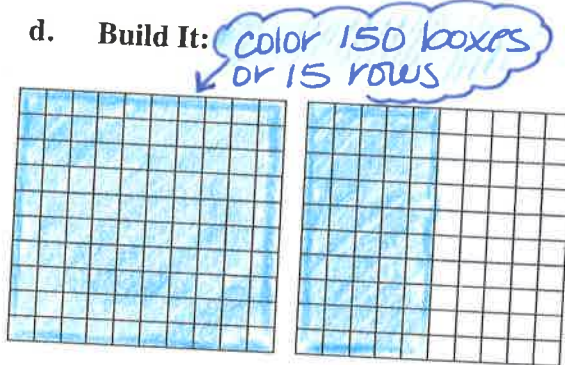
Write It: 80%.

$$\frac{80}{100} \div \frac{10}{10} = \frac{8}{10} \quad \frac{80}{100} \times \frac{2}{2} = \frac{160}{200}$$

Say it:

80 out of 100
80 percent
8 out of 10

d. Build It:



Write It: $\frac{150}{100}$, $\frac{15}{10}$

$$\frac{150}{100} \div \frac{10}{10} = \frac{15}{10} \quad \frac{150}{100} \times \frac{2}{2} = \frac{300}{200}$$

Say It:

150 percent
150 out of 100

3-37

a) I would tell Tate and Erik that they are both correct.

$$\frac{20}{100} + \frac{3}{100} = \frac{23}{100} \quad \text{"two tenths plus 3 hundredths is equal to 23 hundredths."}$$

b) 0.23 shows 23 in the hundredths place. It also shows 2 in the tenths place plus 3 in the hundredths place.



Key Idea: $0 \cdot \frac{2}{\text{tenths}} \frac{3}{\text{hundredths}}$

$$\frac{23}{100} = 0.23 = 23\%$$