Unit 8: Chapter 7 - Fractions

Curriculum Outcomes to be completed:

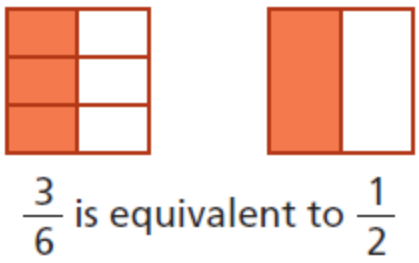
- (5N7) Demonstrate an understanding of fractions by using concrete, pictorial, and symbolic representations to:
    - Create sets of equivalent fractions
    - Compare fractions with like and unlike denominators
- (5N9) Relate decimals to fractions and fractions to decimals

Approximate Time Length:

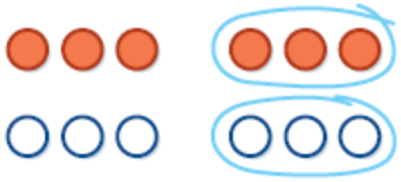
- 4 Weeks (April 9th - May 7th)

Lesson 1 - Recognizing and Creating Equivalent Fractions

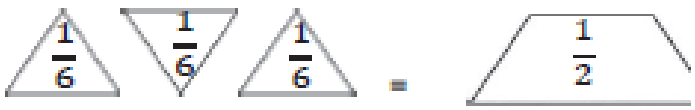
Equivalent Fractions - Fractions that represent the same part of a whole or the same part of a set



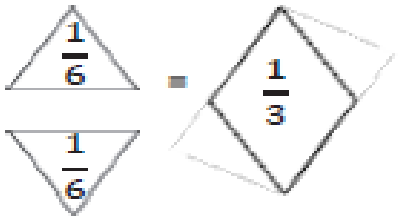
$\frac{3}{6}$ is equivalent to $\frac{1}{2}$



$\frac{3}{6} = \frac{1}{2}$

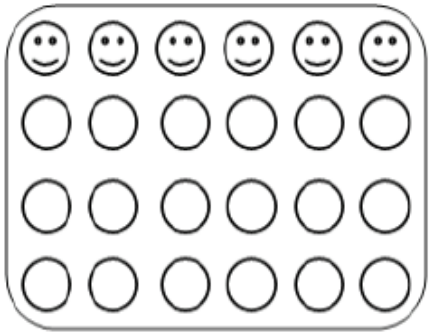


$\frac{3}{6} = \frac{1}{2}$



$\frac{2}{6} = \frac{1}{3}$

The following are all equal fractions



$\frac{6}{24}$

$\frac{2}{8}$

$\frac{3}{12}$

$\frac{1}{4}$

Therefore, we can conclude that $\frac{6}{24} = \frac{2}{8} = \frac{3}{12} = \frac{1}{4}$.

Write two equivalent fractions for the following:

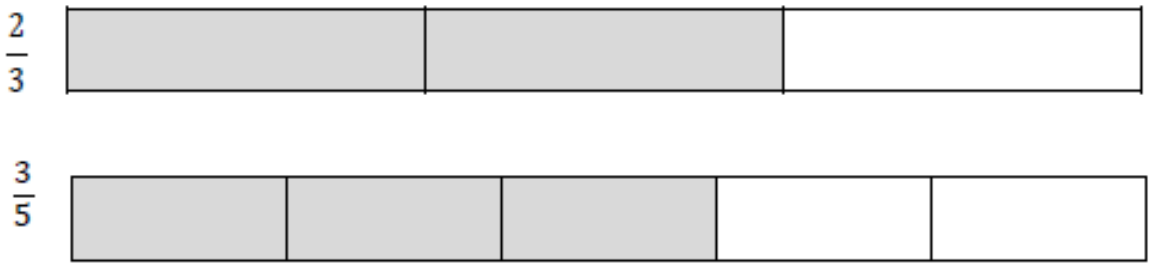
a)

b)

Draw 2 examples of the following fractions using two sided counters

a) $\frac{2}{3}$ b) $\frac{4}{7}$ c) $\frac{3}{5}$

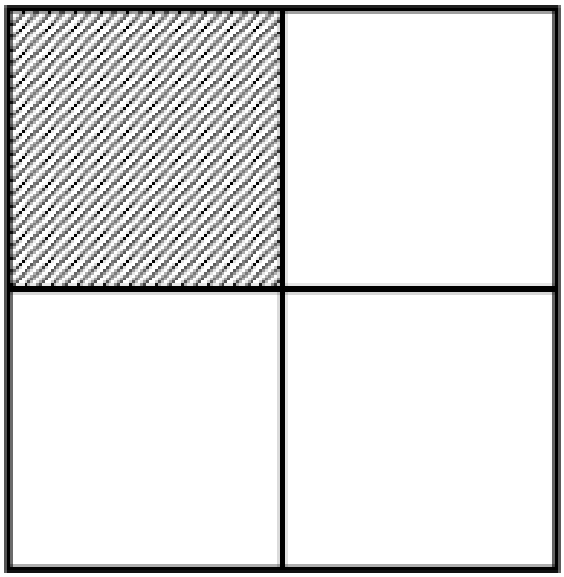
Are two-thirds and three-fifths equivalent to each other?



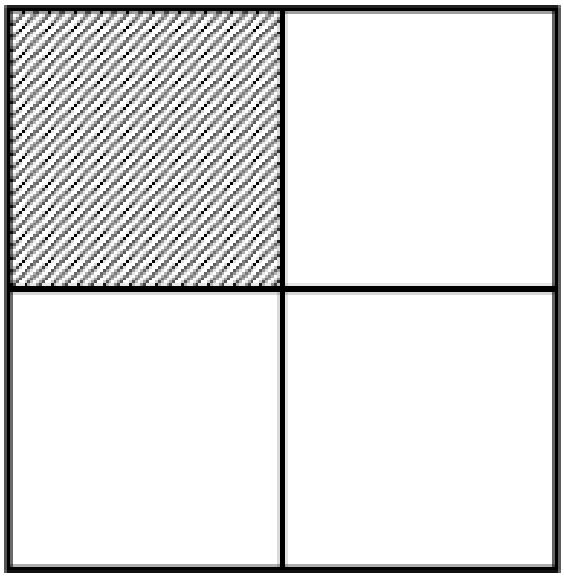
How about one-fourth and four-sevenths?

Page 222-223, # 3, 5, 6, 7, 9, 12

Lesson 3 - Creating Equivalent Fractions



$\frac{1}{4}$



$\frac{1}{4}$

Use the following diagram to create two equivalent fractions to $\frac{1}{4}$

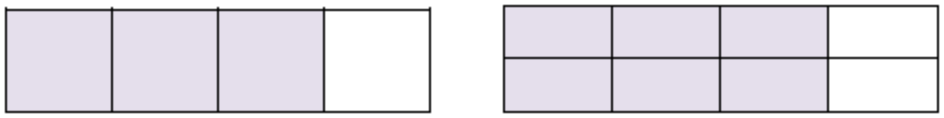
You ate $\frac{2}{3}$ of the six chocolates in the box. How many chocolates did you eat? Show how you know.

determine which of the following fractions are equivalent:

$$\frac{2}{3}, \frac{4}{20}, \frac{6}{8}, \frac{3}{15}$$

Describe $\frac{1}{2}$ as many ways as you can. Include at least five equivalent factions and explain your strategy.

Multiplication is used to increase both the numerator and denominator by the same number in order to create an equivalent fraction with larger terms.



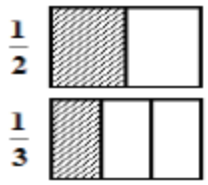
$\frac{3}{4} \rightarrow \frac{3 \times 2}{4 \times 2} \rightarrow \frac{6}{8}$

Division is used to reduce both the numerator and denominator to simplify a fraction written in larger terms to a smaller equivalent fraction.

$$\frac{3}{15} \longrightarrow \frac{3 \div 3}{15 \div 3} \longrightarrow \frac{1}{5}$$

When comparing fractions, we can use both methods to compare fractions

If given $\frac{1}{2}$ and $\frac{1}{3}$ use concrete and pictorial representations.



They should conclude that $\frac{1}{2}$ is larger than $\frac{1}{3}$

compare two fractions, such as $\frac{2}{5}$ and $\frac{1}{4}$, by creating equivalent fractions having the same denominator.

$$\frac{2}{5} \times \frac{4}{4} = \frac{8}{20} \qquad \frac{1}{4} \times \frac{5}{5} = \frac{5}{20}$$

They should conclude that $\frac{8}{20} > \frac{5}{20}$ and therefore, $\frac{2}{5} > \frac{1}{4}$

Solve the following word problems:

You are given 10 m of string to fly a kite. Would you prefer to use $\frac{4}{10}$ of the string or $\frac{3}{5}$ of the string to fly your kite? Explain your choice.

Ellen has two birthday cakes that are the same size. One is chocolate and one is vanilla. The boys ate $\frac{2}{3}$ of the chocolate cake. The girls ate $\frac{3}{4}$ of the vanilla cake. Ask students: Which group ate more cake?

Use Multiplication or Division to compare the following fractions:

a) $\frac{3}{4}$ and $\frac{7}{8}$

b) $\frac{4}{10}$ and $\frac{10}{14}$

Page 228 - 229, # 1, 3, 4, 5, 6, 7

Lesson 4 - Fractions on a Number Line

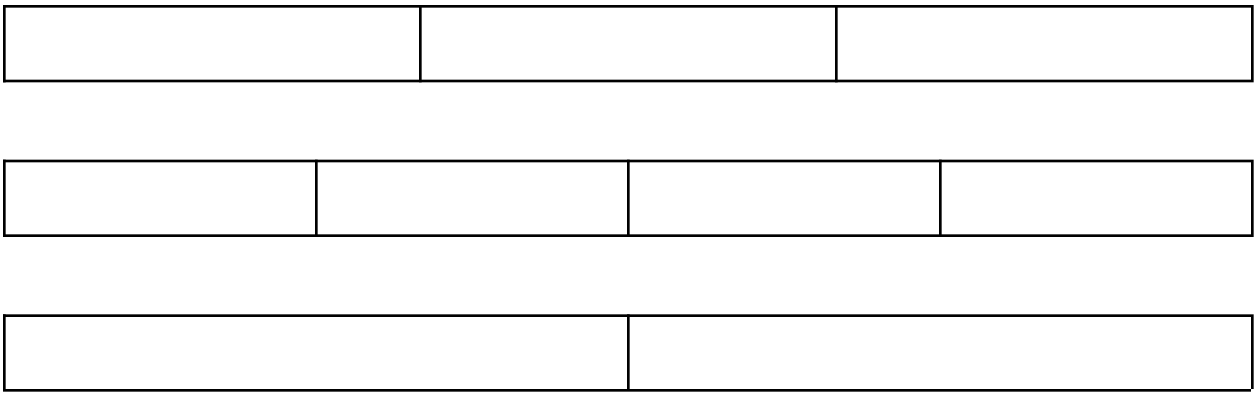
In order for you to compare fractions on a numberline, you must always have the same denominator or use fraction strips

We use a number line to order whole numbers and fractions. Number lines are an easier way to compare two fractions to each other.

Benchmarks - a familiar number or measurement to use for comparing other numbers of measurement *for example, you would use whole numbers to compare fractions)

Compare the following fractions using a numberline and fraction strips

$$\frac{2}{3}, \frac{3}{4} \text{ and } \frac{1}{2}$$



Compare the following fractions using a numberline and multiples

$$\frac{2}{3}, \frac{3}{4} \text{ and } \frac{1}{2}$$

Write either True or False for the following:

(i) If a shape is divided into 5 parts, each part must be $\frac{1}{5}$.

(ii) The only fraction between 0 and $\frac{1}{2}$ is $\frac{1}{4}$.

(iii) 10 hundredths is greater than 10 thousandths.

(iv) If the denominators are the same, the fraction with the largest numerator is the greatest.

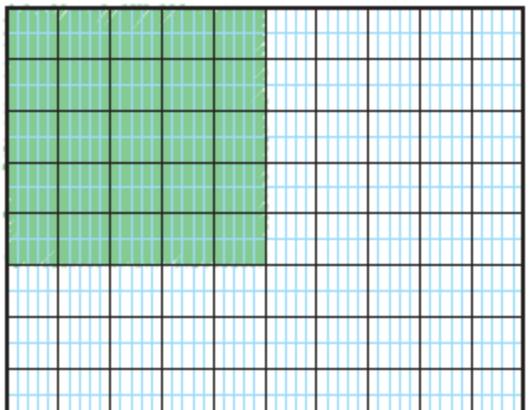
(v) If the numerators are the same, the fraction with the largest denominator is the greatest.

Page 232, # 1, 2,3,4 (use fraction strips for 1 and 3, and multiplication for 2 and 4)

<u>Lesson 6 - Using Decimals and Fractions</u>

Cara found information on the Internet about what the world would be like if there were only 1000 people instead of over six billion people. She learned that, in a global village of 1000 people, only about 250 people would have a TV in their home.

I'll colour 250 of the 1000 tiny rectangles to represent the number of people who would have a TV in their



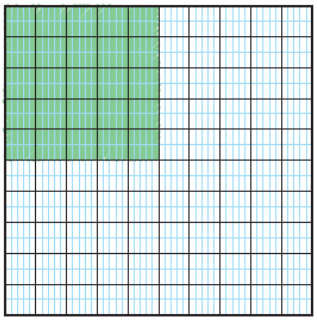
I can write $\frac{250}{1000}$ or 0.250 to represent the portion of people in the global village who would have a TV in their home.

A. Explain why each small square on the thousandths grid represents $\frac{1}{100}$ or 0.01.

B. How many squares represent the portion of people in the global village who would have a TV in their home?

C. Determine a fraction that is equivalent to $\frac{250}{1000}$ and a decimal that is equivalent to 0.250 to represent the portion of people who would have a TV in their home.

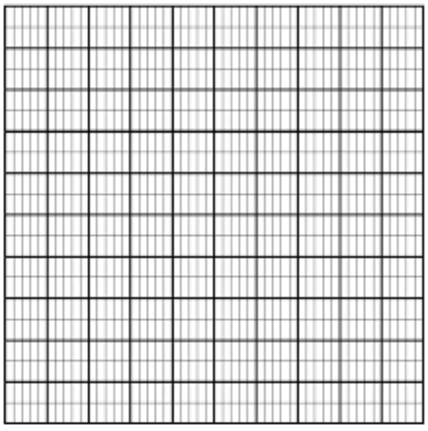
D. How can you use Cara's grid to show that only $\frac{1}{4}$ of the



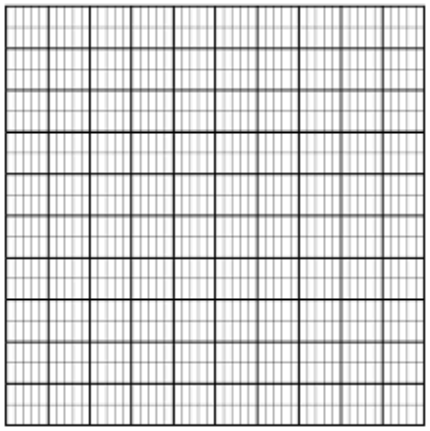
E. Why is $\frac{1}{4}$ easier to visualize than $\frac{250}{1000}$ or 0.250, even though they are equivalent?

Write a decimal in thousandths for each fraction. Use a thousandths grid to help you.

a) $\frac{200}{1000}$



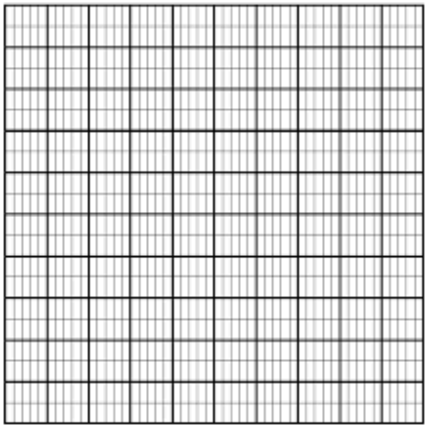
b) $\frac{30}{100}$

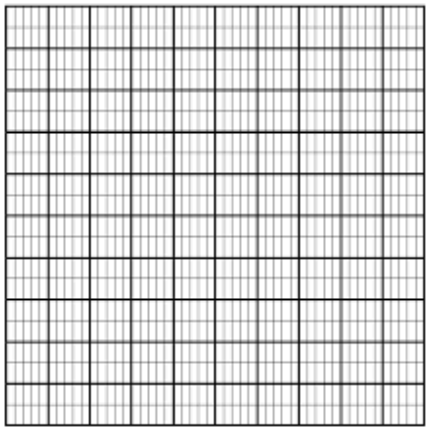


Write two decimal names for each fraction.
Use a thousandths grid to help you.

a) $\frac{800}{1000}$

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

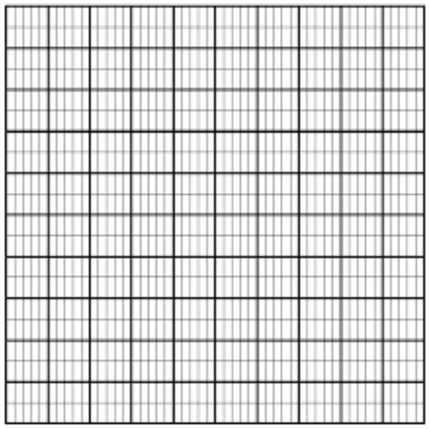


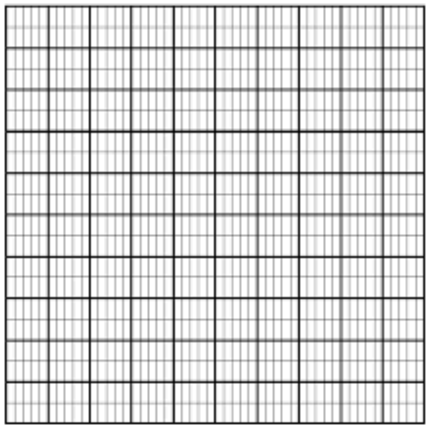


Write two fraction names for each decimal.
Show your work.

a) 0.370

b) 0. 090





Raven said that 0.400 is the same as $\frac{1}{4}$. Is her statement correct? Use a thousandths grid to explain.