Name _____ Date_____

I. What is a Fraction?

Lesson Objective: We will be able to define a fraction by explaining the meaning of its top and bottom parts.

1. **Explore:** Take 5 minutes to explore the sim before beginning this worksheet.

First Screen: Intro
Keep the "Max" button set to 1.
2. Choose a representation and make a fraction. Then write and sketch the fraction.

Fraction Name:	
Sketch/Drawing:	

3. Increase or decrease the top part of the fraction. What happens? Write and sketch the new fraction.

Fraction Name:	
Sketch/Drawing:	

4. Go back to your original fraction (from #2). Increase or decrease the bottom part of the fraction. What happens? Write and sketch the new fraction.

Fraction Name:	
Sketch/Drawing:	

5. Try different representations of the fractions above. Observe how the amount changes when the numerators & denominators are increased or decreased.

6. **Think-Pair-Share:**

- What do you notice about the size of the pieces in any given fraction?

- How would you describe the top part of a fraction? How does changing the top number change the amount? Do you and your partner agree on the meaning of the top part?

- How would you describe the bottom part of a fraction? How does changing the bottom number of a fraction change the amount? Do you and your partner agree on the meaning of the top part?

Second Screen: Build a Fraction

7. Click on the second tab. Select "Level 1" in the top row to begin the activity. Using your knowledge of the top/bottom parts of a fraction, build fractions that match the numeric representations.

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II. Ordering and Comparing Fractions

Lesson Objective: We will use our knowledge of numerators and denominators to order and compare fractions.

Mrs. Hixson & Mr. Huey have apple pies that are the same size. Mrs. Hixson eats $\frac{2}{8}$ of her apple pie. Mr. Huey eats $\frac{5}{8}$ of his. Who ate more pie?

1. Choose the **Intro Tab**. Build Mrs. Hixson's & Mr. Huey's pies and sketch them below.

Mrs. Hixson's pie	Mr. Huey's pie

2. <u>Turn and Talk</u>: Who ate more pie? What did you notice about the fraction that represented the larger portion of pie?

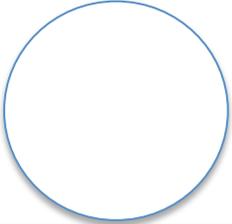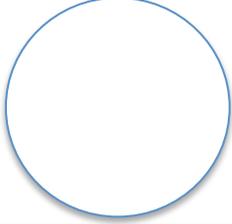3. Build the following fractions and sketch them in the table below.

$\frac{2}{6}$	$\frac{1}{6}$	$\frac{5}{6}$	$\frac{3}{6}$

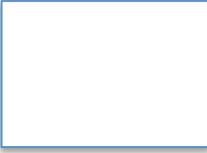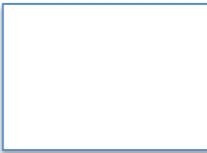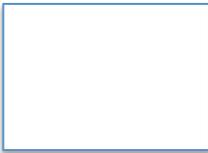4. Put the above fractions in order from least to greatest. ___, ___, ___, ___

5. <u>Turn and Talk</u>: Is there a rule for ordering/comparing fractions when the bottom number, the denominator, is the same? Write down your thinking!

6. Mrs. Hixson & Mr. Huey have apple pies that are the same size. Mrs. Hixson eats $\frac{1}{8}$ of her apple pie. Mr. Huey eats $\frac{1}{2}$ of his. Who ate more pie?

Build Mrs. Hixson & Mr. Huey's pies and sketch them below.

Mrs. Hixson's pie	Mr. Huey's pie

8. Try out these fractions.

$\frac{2}{4}$	$\frac{2}{3}$	$\frac{2}{8}$	$\frac{2}{5}$

7. Put the fractions above in order from least to greatest. ___, ___, ___, ___

8. <u>Turn and Talk</u>: With your partner, come up with a rule for ordering and comparing fractions if the numerators are the same but the denominators are different.

<u>Application:</u>

Ava and Mia are comparing the fractions $\frac{2}{3}$ and $\frac{2}{6}$.

Ava says that 2/3 is greater, but Mia says that 2/6 is greater. Using this number line, help the girls figure out who is right. Explain your thinking.

0   1

Write a fraction that is between 2/3 and 2/6.

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III. Equivalent Fractions

Lesson Objective: We will use our knowledge of numerators and denominators and visual representations to find equivalent fractions.

1. **Explore: Play with the first tab, "Build a Fraction," for 5 minutes.**

Third Tab: Fraction Lab
2. **Find three or more fractions that are equivalent to ½. Sketch your findings below.**

½			

3. **Represent $\frac{4}{6}$ two different ways.**

$\frac{4}{6}$	

4. **Represent $\frac{3}{4}$ two different ways.**

$\frac{3}{4}$	

5. **How can you explain to a student who has not played the sim that $\frac{1}{4}$ = $\frac{2}{8}$? Use words, symbols, or pictures to help them see the equivalence.**
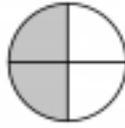
$$\frac{1}{3} = \frac{2}{6} \qquad \frac{2}{4} = \frac{6}{12}$$

6. <u>Turn and Talk</u>: Try to identify a relationship between the two numerators and the two denominators in each of the equivalent fraction pairs above. Share your ideas.

How can you tell when fractions are equivalent? Can you find a pattern?