



SORTING ACTIVITY

Least to Greatest

Smallest: $\frac{1}{12}$, $\frac{1}{9}$, $\frac{1}{8}$, $\frac{1}{6}$

Smaller than $\frac{1}{2}$ = $\frac{5}{11}$ $\frac{4}{10}$ $\frac{4}{9}$

$\frac{1}{2}$ = $\frac{6}{12}$, $\frac{3}{4}$, $\frac{3}{6}$

Bigger than $\frac{1}{2}$ $\frac{8}{15}$ $\frac{5}{9}$ $\frac{6}{10}$

Close to 1: $\frac{14}{15}$ $\frac{11}{12}$ $\frac{9}{10}$ $\frac{7}{8}$ $\frac{5}{6}$

$\frac{5}{6}$ $\frac{7}{8}$ $\frac{9}{10}$ $\frac{11}{12}$ $\frac{14}{15}$

Foundations of Algebra

Unit 1: Number Sense & Quantity

Practice

Day 4: Benchmark Fractions & Fractions on a Number Line

Name: _____

Practice Assignment

0 25 50 75 100

1. Order the fractions from least to greatest. Show or explain your reasoning.

a.

$$\frac{5}{9}, \frac{6}{13}, \frac{11}{13}, \frac{3}{28}$$

$$\frac{3}{28}, \frac{6}{13}, \frac{5}{9}, \frac{11}{13}$$

b.

$$\frac{5}{10}, \frac{2}{21}, \frac{7}{13}, \frac{6}{7}, \frac{8}{17}$$

c.

$$\frac{24}{25}, \frac{3}{6}, \frac{5}{11}, \frac{1}{16}, \frac{3}{5}$$

2. Fill in the missing numerator or denominator so that the fraction is close to but greater than $\frac{1}{2}$.

a. $\frac{8}{15}$

b. $\frac{7}{13}$

c. $\frac{19}{37}$

d. $\frac{11}{20}$

3. Fill in the missing numerator or denominator so that the fraction is close to 0.

a. $\frac{1}{9}$

b. $\frac{2}{100}$

c. $\frac{4}{20}$

d. $\frac{1}{13}$

4. The table shows the fraction of an hour that students spent running laps at a track practice one afternoon. Use the table to answer the following questions:

| Student | Fraction of One Hour Spent Running Laps |
|--------------------|---|
| Denise | $\frac{1}{10}$ |
| Patrick | $\frac{2}{3}$ |
| Tyrone | $\frac{11}{12}$ |
| Su Lee | $\frac{3}{4}$ |
| Jasmine | $\frac{7}{15}$ |

a. Which student(s) ran for almost an entire hour?

(close to)
Tyrone Su Lee Patrick

b. Which student(s) ran for more than half an hour?

Tyrone Su Lee Patrick

c. Which student(s) for less than half an hour?

Jasmine Denise

5. Kara walks five days each week. This week she walked $\frac{7}{8}$ mile on Monday, $\frac{3}{5}$ mile on Tuesday, $\frac{4}{10}$ mile on Wednesday, $\frac{1}{10}$ mile on Thursday, and $\frac{9}{10}$ mile on Friday. Use benchmark fractions to estimate the total distance Kara walked this week. **Show and explain your reasoning.**

$$1 + \frac{1}{2} + \frac{1}{2} + 0 + 1 = 3 \text{ miles}$$

Foundations of Algebra

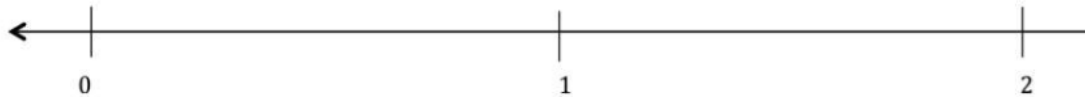
Unit 1: Number Sense & Quantity

Practice

6. A school participates in a reading contest. The table shows each class portion of the grade's total reading minutes. Order the portion of reading minutes for each teacher in order from greatest to least. Explain your reasoning. ©CarnegieLearning

| Class | Portion of Reading Minutes |
|--------------|----------------------------|
| Mr. Karlie | $\frac{5}{12}$ |
| Ms. Jacobs | $\frac{1}{18}$ |
| Ms. Suarez | $\frac{4}{9}$ |
| Mr. Mitchell | $\frac{1}{12}$ |

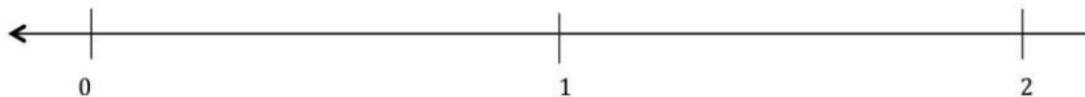
7. Mary swims $\frac{1}{8}$ of a mile each day. Use the number line to help you answer the following questions:



a. How many miles will she have swam in 12 days?

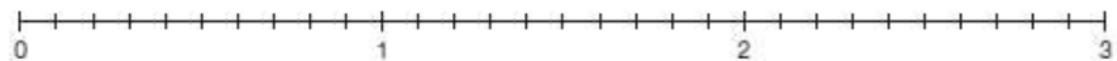
b. How many days does it take to swim $\frac{3}{4}$ of a mile?

8. Caleb swam $\frac{1}{6}$ mile a day for 8 days. At the end of 8 days, Caleb told his friends he swam $\frac{4}{3}$ miles all together. Did Caleb use the correct fraction? Show your work and explain if you think Caleb is correct or incorrect.



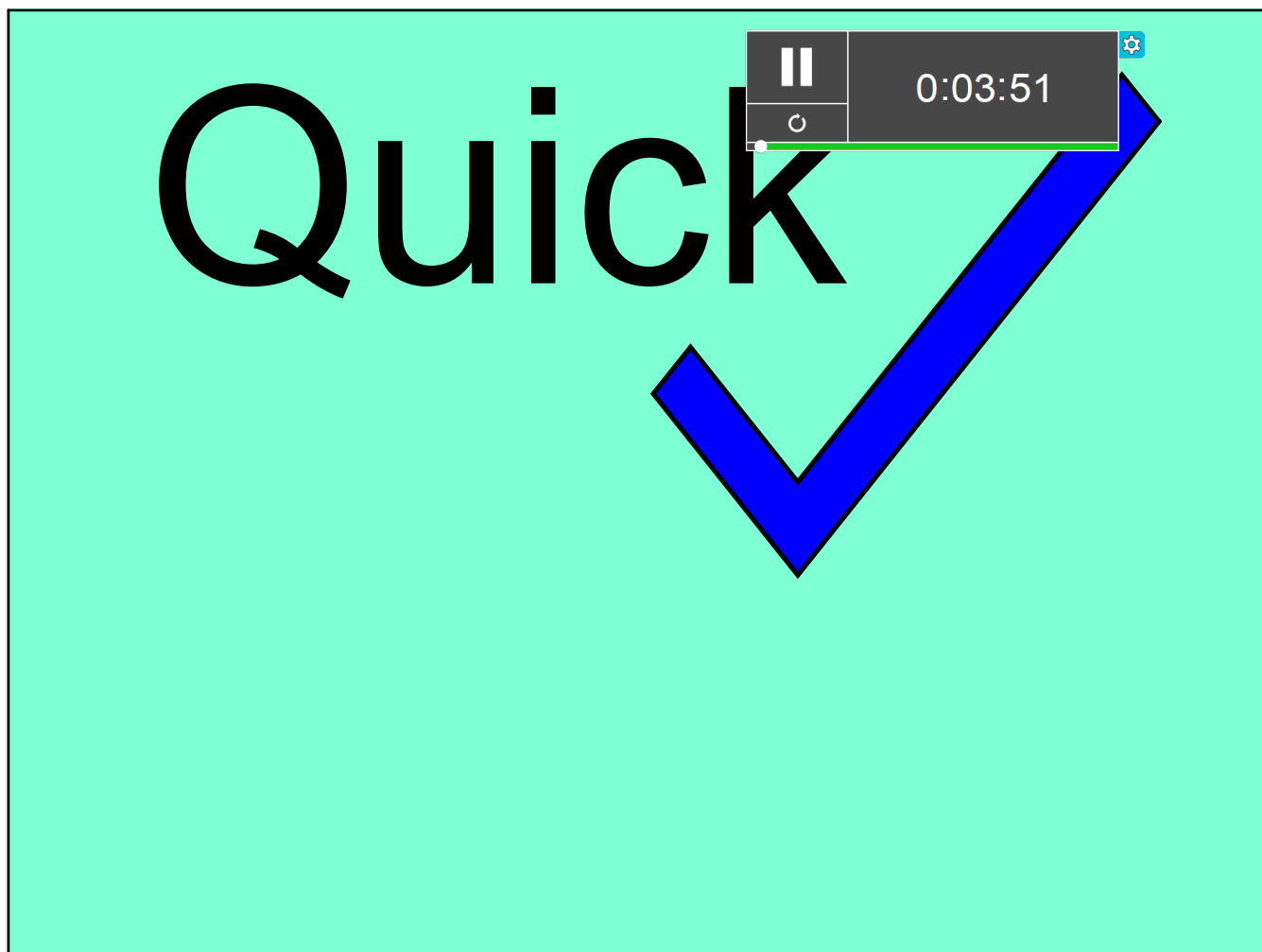
9. Plot the following fractions on the number (estimate if necessary).

- A. $\frac{3}{2}$ B. $1\frac{1}{4}$ C. $1\frac{9}{10}$ D. $2\frac{1}{2}$ E. $\frac{2}{5}$





Today's Notes



Day 7: Adding and Subtracting Fractions

Review: Complete each equation to make the fractions equivalent.

a. $\frac{1}{2} = \frac{8}{16}$

b. $\frac{3}{4} = \frac{9}{12}$

c. $\frac{6}{9} = \frac{2}{3}$

d. $\frac{6}{15} = \frac{2}{5}$

e. $\frac{12}{32} = \frac{3}{8}$

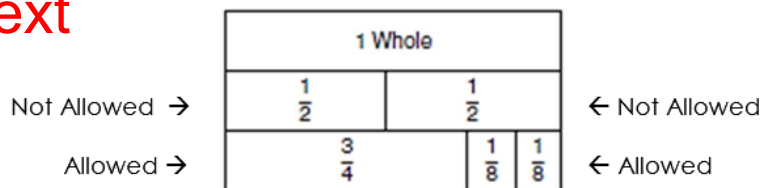
f. $\frac{1}{4} = \frac{6}{24}$

g. $\frac{1}{3} = \frac{8}{24}$

~~$\frac{6}{16} = \frac{7}{7}$~~

Explore: Using your fraction towers, create 4 different number sentences that equal 1. You can use some fractions with the same denominator, but you must use at least one fraction that has a different denominator. An example of what is allowed and not allowed is shown below.

Show next
Slide



Example 1:

Example 2:

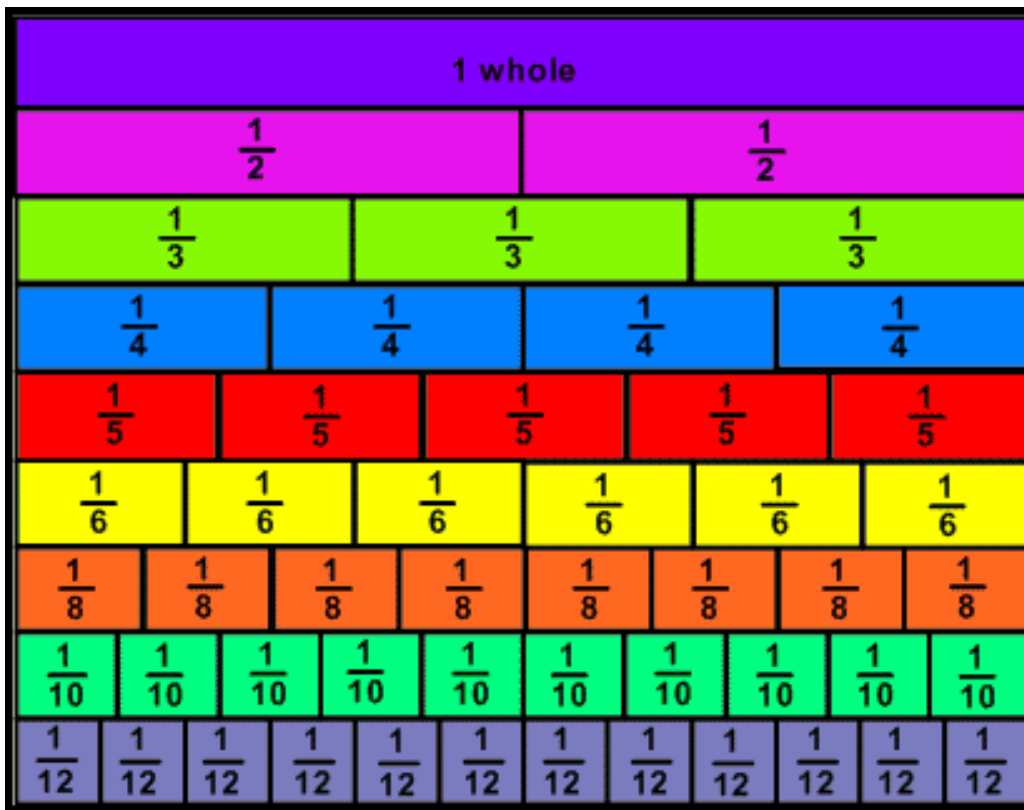
Example 3:

Example 4:

Two or more fractions that have a **common denominator** are fractions whose denominator is the same. Fractions that have the same denominator make it really easy to add fractions.

Do: Now, go back, using your fraction towers or your number lines from Day 3 and rewrite your fractions so they have a common denominator. Do your number sentences equal 1?

Fractions



Adding & Subtracting Fractions

Fractions can only be added or subtracting together if they have common denominators!

Step 1: Rewrite one or both of the fractions, using equivalent fractions, so you can get a common denominator.

Step 2: Add or subtract the numerators while keeping the denominators the same.

$$\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$$

Practice: Add or subtract the following fractions.

a. $\frac{2}{3} + \frac{1}{4}$

$$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$

b. $\frac{5}{8} + \frac{3}{4}$

$$\frac{5}{8} + \frac{6}{8} = \frac{11}{8}$$

c. $\frac{5}{6} - \frac{1}{3}$

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

d. $\frac{2}{3} - \frac{1}{2}$

$$\frac{4}{6} - \frac{3}{6} = \frac{1}{6}$$

Think About It: What about adding and subtracting mixed numbers???

e. $1\frac{2}{5} + 4\frac{1}{2}$

$$\frac{7}{5} + \frac{9}{2} = \frac{14}{10} + \frac{45}{10} = \frac{59}{10}$$

f. $3\frac{4}{9} + 2\frac{2}{3}$

$$\frac{31}{9} + \frac{8}{3} = \frac{31}{9} + \frac{24}{9} = \frac{55}{9}$$

g. $3\frac{5}{8} - 1\frac{1}{4}$

$$\frac{29}{8} - \frac{5}{4} = \frac{29}{8} - \frac{10}{8} = \frac{19}{8}$$

h. $5\frac{1}{2} - 2\frac{5}{6}$

$$\frac{11}{2} - \frac{17}{6} = \frac{33}{6} - \frac{17}{6} = \frac{16}{6} = \frac{8}{3}$$

Conclusion: When I add or subtract mixed numbers, I plan to convert to improper fraction then get a common denominator

Adding & Subtracting Word Problems

1. Joe spends $\frac{2}{5}$ of his money on a jacket and $\frac{3}{8}$ of his money on a shirt. He spends the rest on a pair of pants. What fraction of his money does he use to buy the pants?

add $\frac{2}{5} + \frac{3}{8}$

$$\frac{16}{40} + \frac{15}{40}$$

Spent $\frac{31}{40}$

Left over to buy pants is $\frac{9}{40}$

2. Madame Curie made some radium in her lab. She used $\frac{2}{5}$ kg of the radium in an experiment and had $1\frac{1}{4}$ kg left. How much radium did she have at first?

add them $\frac{2}{5} + 1\frac{1}{4}$

$$\frac{2}{5} + \frac{5}{4}$$

$$\frac{8}{20} + \frac{25}{20} = \frac{33}{20}$$

3. Sandy ate $\frac{1}{6}$ of a candy bar. John ate $\frac{3}{4}$ of it. How much more of the candy bar did John eat than Sandy?

4. Harlan used $3\frac{1}{2}$ kg of sand to make a large hourglass. To make a smaller hourglass, he only used $1\frac{3}{7}$ kg of sand. How much more sand did it take to make the large hourglass than the smaller one?

Additional Practice

Foundations of Algebra
Day 5: Adding & Subtracting Fractions

Unit 1: Number Sense & Quantity

Practice

Name: _____

Practice Assignment

0 25 50 75 100

1. Add or subtract the following fractions.

a. $\frac{2}{3} + \frac{2}{7}$

b. $\frac{5}{7} + \frac{1}{2}$

c. $\frac{3}{4} - \frac{2}{7}$

d. $\frac{5}{6} - \frac{1}{4}$

2. Nadia spent $\frac{1}{4}$ of her money on a shirt and $\frac{2}{5}$ of her money on new shoes. What fraction of Nadia's money was spent? What fraction of her money is left?

3. Carlos wants to practice piano 2 hours each day. He practices piano for $\frac{3}{4}$ hour before school and $\frac{7}{10}$ hour when he gets home. How many hours has Carlos practiced piano? How much longer does he need to practice before going to bed in order to meet his goal?

4. Mr. Kelly used $\frac{5}{8}$ of a tank of gas on a trip to visit relatives for the weekend and another one half of a tank commuting to work the next week. He then took another weekend trip and used $\frac{1}{4}$ tank of gas. How many tanks of gas did Mr. Kelly use altogether?

5. Add or subtract the following fractions.

a. $3\frac{1}{4} + 3\frac{5}{8}$

b. $5\frac{2}{7} - 4\frac{2}{3}$

c. $5\frac{1}{2} - 1\frac{3}{4}$

d. $4\frac{2}{3} + 6\frac{1}{5}$