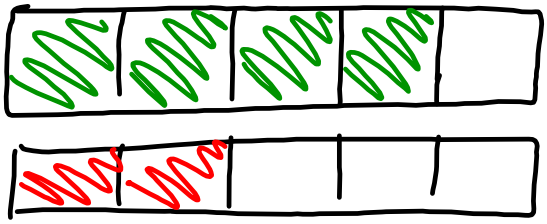
Which is bigger? $\frac{2}{5}$ $\frac{4}{5}$

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

How do you know?

4 parts of 5 is bigger than 2 parts of 5

How can you show it?



$\frac{4}{5}$

$\frac{2}{5}$

Which is smaller? $\frac{7}{4}$ $\frac{7}{3}$

$\frac{7}{4} < \frac{7}{3}$

How do you know?

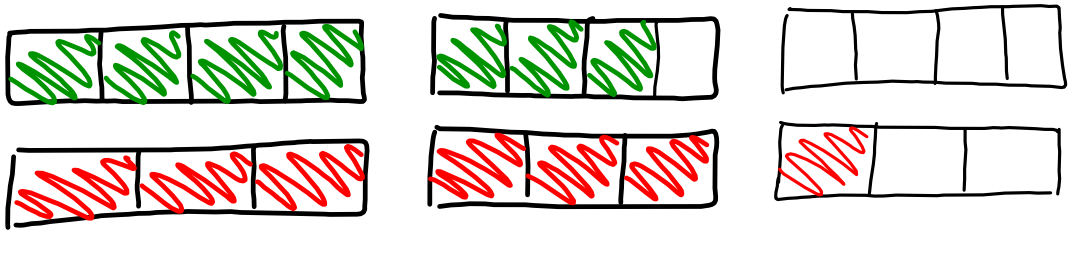
Convert to mixed numbers

$\frac{7}{4} \rightarrow 1\frac{3}{4}$ $\frac{7}{3} \rightarrow 2\frac{1}{3}$

How can you show it?

$\frac{7}{4}$

$\frac{7}{3}$



Closer to *0*, *½*, or *1*?

$\frac{1}{8}$ $\frac{4}{5}$ $\frac{5}{9}$ $\frac{11}{10}$

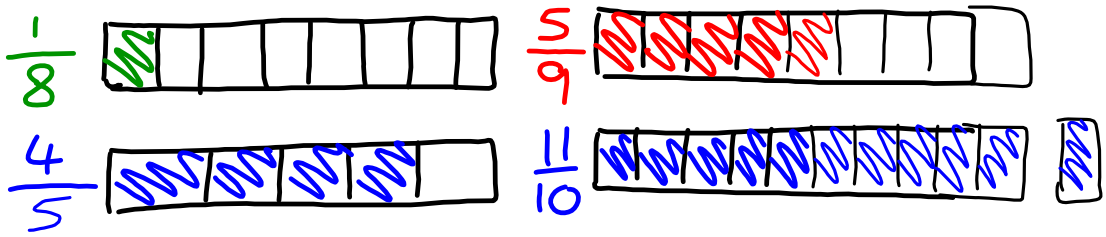
closer to... 0 1 $\frac{1}{2}$ 1

How do you know?

Could convert to decimals (top ÷ bottom)

$1 \div 8 = 0.125$ $4 \div 5 = 0.8$ $5 \div 9 = 0.\overline{5}$ $11 \div 10 = 1.1$

How can you show it?



MTH1W Grade 9 Mathematics

1.2 Representing and Comparing Fractions

Goal(s) ***- Represent fractions so I can compare and order them using different methods***

- Identify unit fractions and determine their relationship to other fractional amounts

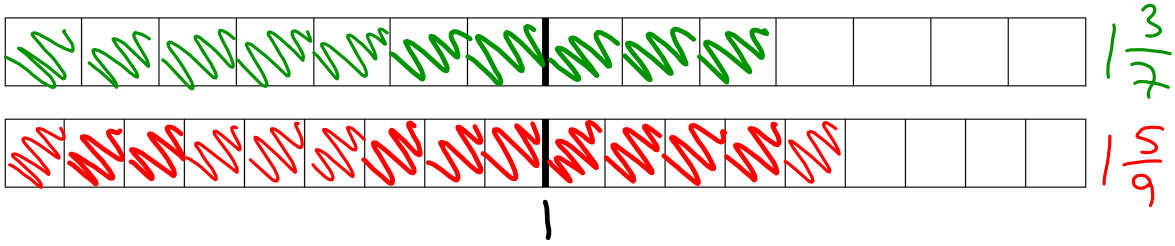
Page 14 #s 1, 3, 4, 6ace, 7, 10, 11, 12, 13aceg

Page 16 #s 17ef, 19ace, 20ace, 21, 22aceg

Models

- number lines, fraction strips, bar models, or area models - can help in comparing and ordering fractions.

Using a bar model we can determine which fraction is larger, $1\frac{3}{7}$ or $1\frac{5}{9}$.



$1\frac{3}{7} < 1\frac{5}{9}$

Benchmarks

- using our understanding of numbers ← aka NUMBER SENSE

Which is larger, $\frac{3}{7}$ or $\frac{1}{2}$?

Knowing that 3 is *less than half* of 7, therefore:

$\frac{3}{7} < \frac{1}{2}$

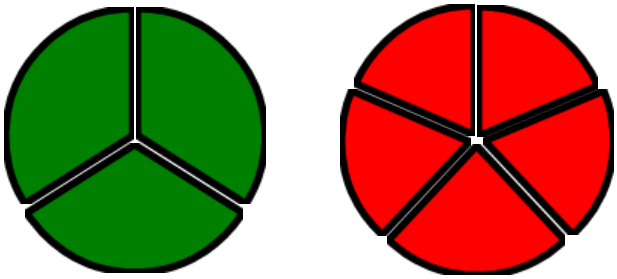
Which is larger, $\frac{5}{9}$ or $\frac{1}{2}$?

Knowing that 5 is *more than half* of 9, therefore:

$\frac{1}{2} < \frac{5}{9}$

Common Numerators

- the denominator tells us how many pieces the whole has been divided into... the larger the number in the denominator, the smaller each piece!



- the numerator of a fraction tells us how many pieces of the whole we have

- if we have the same number of different size pieces, we can determine which is the larger or smaller fraction

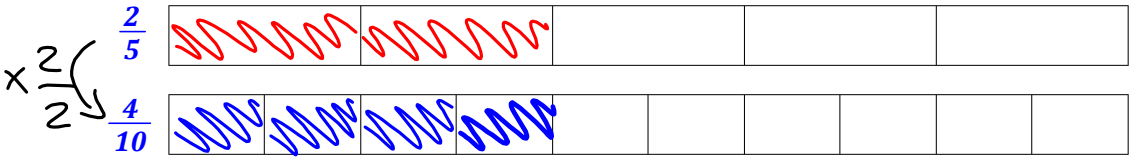
Which is larger, $\frac{7}{11}$ or $\frac{7}{13}$?

There are 7 pieces of each, but they are different sizes, therefore

$$\frac{7}{11} > \frac{7}{13}$$

Equivalent Fractions

- fractions that are multiples, different numbers representing the same amount



- with equivalent fractions it may be possible to change one fraction and use common numerators to compare

Which is larger, $\frac{3}{11}$ or $\frac{6}{19}$?

$$\frac{3}{11} \times \frac{2}{2} = \frac{6}{22} < \frac{6}{19}$$

Using Unit Fractions

- a unit fraction is one piece of the whole (the numerator is always ***1***!)

Which is larger, $\frac{10}{11}$ or $\frac{12}{13}$?

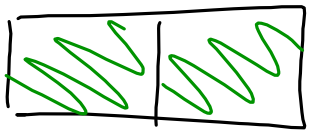
(notice that each fraction is one piece away from a whole... compare unit fractions)

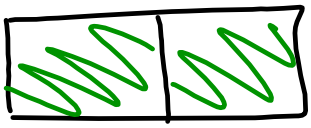
$\frac{1}{11} > \frac{1}{13}$

$\Rightarrow \frac{10}{11} < \frac{12}{13}$

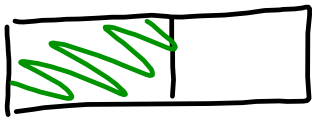
Use a model to show...

How many one-halves are in ***2½***.





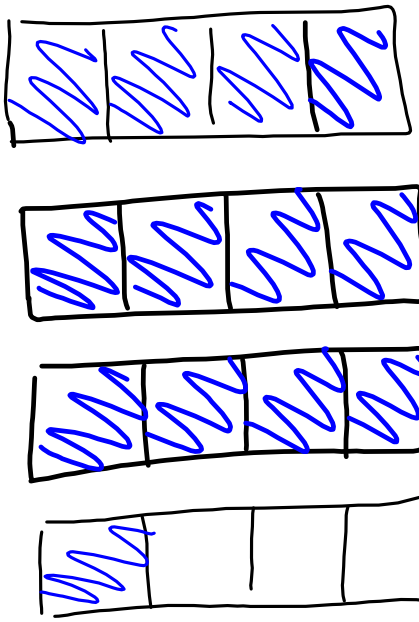
$= \frac{5}{2}$



$\Rightarrow$ 5 halves

Use a model to...

Write the number $3\frac{1}{4}$ as an improper fraction.



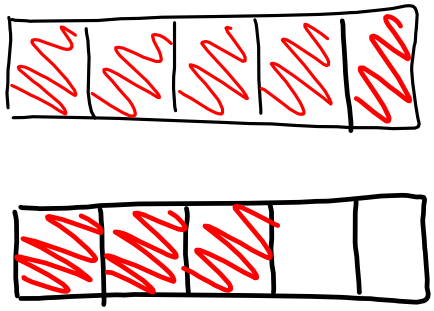
$= 4+4+4+1$

$= 13$

$\Rightarrow \frac{13}{4}$

Use a model to...

Write the fraction $\frac{8}{5}$ as an mixed number.



$= 1\frac{3}{5}$

Order these fractions from smallest to largest.

$\frac{1}{15}$ $\frac{1}{11}$ $\frac{1}{2}$ $\frac{1}{20}$ $\frac{1}{100}$ $\frac{1}{16}$ $\frac{1}{3}$

all unit fractions $\Rightarrow$ Smallest has the largest denominator

$\Rightarrow \frac{1}{100}, \frac{1}{20}, \frac{1}{16}, \frac{1}{15}, \frac{1}{11}, \frac{1}{3}, \frac{1}{2}$

Which one doesn't belong?

$\frac{-6}{8}$ $-\frac{9}{12}$ $\frac{12}{-16}$ $\frac{-3}{-4}$

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

the other three are all negative $\frac{3}{4}$

$\frac{-6}{8} = \frac{-3}{4}$ $\frac{-9}{12} = \frac{-3}{4}$ $\frac{12}{-16} = \frac{-3}{4}$

Order these fractions from least to greatest.

$2\frac{3}{4}$ $-2\frac{1}{4}$ $\frac{5}{-2}$ $\frac{-3}{5}$ $\frac{19}{9}$

$2\frac{3}{4} = 2.75$

$-2\frac{1}{4} = -2.25$

$\frac{5}{-2} = -2.5$

$\frac{-3}{5} = -0.6$

$\frac{19}{9} = 2.\overline{1}$