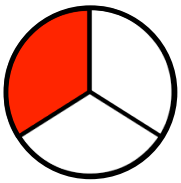
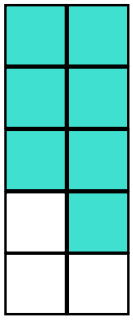
Fraction

A part of a whole number

$\frac{1}{3}$  $\frac{7}{10}$ 

Numerator

The number of parts of a whole

$\frac{3}{4}$

1	
2	3

Denominator

The total number of parts in a whole

$\frac{3}{4}$

1	2
3	4

Factors

Two numbers that multiply to make another number

16: 1, 2, 4, 8, 16

21: 1, 3, 7, 21

Greatest Common Factor

1. List all of the factors
2. Identify the largest factor the numbers have in common

16: 1, 2, 4, 8, 16

22: 1, 2, 11, 22

GCF=2

Multiples

Skip counting

5: 5, 10, 15, 20, 25...

8: 8, 16, 24, 32, 40...

Least Common Multiple

1. List the multiples
2. Identify the first the numbers have in common

2: 2, 4, 6, 8, 10

5: 5, 10, 15, 20

LCM=10

Prime

A number with only two factors: one and itself

17 3 23 5 47 31

Composite

A number with more than one pair of factors.

24 9 15 4 10 36

1 Whole = $\frac{n}{n}$

$1 = \frac{5}{5}$ $\frac{72}{72} = 1$

$\frac{7}{7} = 1$ $1 = \frac{11}{11}$

Simplify or Reduce

To rewrite a fraction in a way that is easier to understand.

$\frac{12}{18} = \frac{2}{3}$ $\frac{20}{24} = \frac{5}{6}$

Reducing Fractions

1. List the factors of the numerator
2. List the factors of the denominator
3. Identify the greatest common factor
4. Divide the numerator and denominator by the greatest common factor

Reducing Fractions

$\frac{10}{15}$ 10: 1, 2, 5, 10
15: 1, 3, 5, 15

$$\frac{10}{15} \div \frac{5}{5} = \frac{2}{3}$$

Equivalent Fractions

Two fractions that are written differently but mean the same

$$\frac{1}{2} = \frac{5}{10} \qquad \frac{4}{9} = \frac{12}{27}$$

Comparing Fractions

If the denominators are the same...

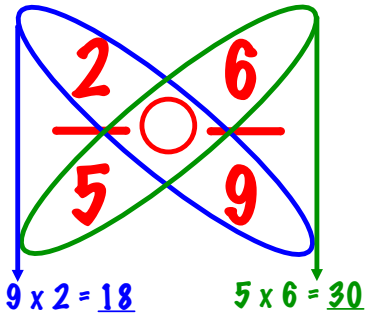
Then the fraction with the larger numerator is larger!

Comparing Fractions

If the numerators are the same...

Then the fraction with the larger denominator is smaller!

Comparing Fractions Short Cut



$\frac{2}{5} < \frac{6}{9}$

18 < 30

Comparing Fractions with Unlike Numerators and Denominators

1. List the multiples for the denominators of both fractions.
2. Find the Least Common Multiple
3. Multiply the fraction by a number to get the LCM in the denominator.
4. Compare the fractions

Comparing Fractions

Are the numerators the same?	Yes	The one with the larger denominator is smaller
	No	Check the denominators
Are the denominators the same?	Yes	The one with the larger numerator is larger
	No	Then both the numerator and denominators are different and you must create equivalent fractions

Add & Subtract Fractions

1. Same denominators
2. Add/subtract the whole numbers
3. Add/subtract the fractions
4. Change improper fractions
5. Reduce your answer

Adding & Subtracting Fractions

When adding or subtracting, only add the numerators.

The denominators remain the same!

Improper Fraction

A fraction greater than one and has a larger numerator than denominator

$\frac{15}{5}$ $\frac{23}{9}$ $\frac{92}{3}$ $\frac{32}{31}$

Mixed Number

A fraction that is greater than one and is written with a whole number and a fraction

$8\frac{1}{5}$ $12\frac{5}{9}$ $7\frac{9}{31}$ $2\frac{2}{3}$

Changing a Mixed Number to an Improper Fraction

$2\frac{1}{5} \rightarrow \left(2 \times 5 + 1\right) \rightarrow \frac{11}{5}$

$5 \times 2 + 1 = 11$

Changing an Improper Fraction to a Mixed Number

$\frac{11}{5} \rightarrow 5\overline{)11}\ 2,\ -10,\ 1 \rightarrow 2\frac{1}{5}$

Changing Denominators

1. List the multiples of the denominators
2. Find the least common multiple
3. Multiply the denominator by a number to equal the least common multiple

Changing Denominators

$\frac{1}{2} + \frac{3}{8}$

2: 2, 4, 6, (8), 10

8: (8)

$\frac{1}{2} \times \frac{4}{4} = \frac{4}{8}$

$\frac{4}{8} + \frac{3}{8} = \frac{7}{8}$