

## Unit 3 - Fractions

**Fraction:** A number that represents part of a whole or part of a set.

$\frac{3}{4}$  ←----- Numerator - tells how many of the total parts are being considered  
←----- Denominator - tells how many parts one whole has been divided (the total parts)

### Benchmarks

0,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 whole

**Improper Fractions** - when the numerator is bigger than the denominator

$\frac{12}{5}$ , or  $\frac{4}{3}$

**Mixed Number** - a whole number and a fraction

$2\frac{1}{3}$ , or  $3\frac{1}{2}$

You can change from Improper fractions to mixed number...

- Divide the denominator into the numerator

$$\frac{12}{5} \rightarrow \begin{array}{r} 2 \\ 5 \overline{)12} \\ \underline{-10} \\ 2 \end{array} \leftarrow \text{Remainder}$$

$2\frac{2}{5}$

$$\frac{7}{4} = 1\frac{3}{4} \quad 7 \div 4 = 1 \text{ with remainder of } 3$$

$$\text{ex: } \frac{13}{5} = 2\frac{3}{5}$$

$$\text{ex: } \frac{21}{6} = 3\frac{1}{2}$$

You can change from a mixed number into an improper fraction...

multiply the denominator by the whole number and add the numerator

$$6\frac{1}{2} = \frac{13}{2} \rightarrow 2 \times 6 + 1 = 13 \rightarrow \text{gives you the numerator}$$

$$\text{ex: } 2\frac{1}{4} = \frac{9}{4}$$

$$\text{ex: } 3\frac{1}{3} = \frac{10}{3}$$

Equivalent Fraction: fractions that have the same value

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12} \text{ etc...}$$

You make equivalent fractions by multiplying or dividing the numerator and denominator by the same number

$$\frac{3 \times 6}{7 \times 6} = \frac{18}{42}$$

$$\text{ex: } \frac{10 \div 10}{70 \div 10} = \frac{1}{7}$$

## Lowest terms/Simplest Form/Reduce

- A fraction is in lowest terms when the only common factor of the numerator and the denominator is 1.

- to bring a fraction to lowest terms - think of the GCF - greatest common factor - that will divide into both the numerator and denominator

$$\frac{18}{20} \div 2 = \frac{9}{10}$$

