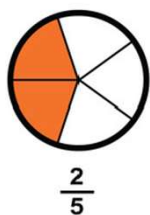
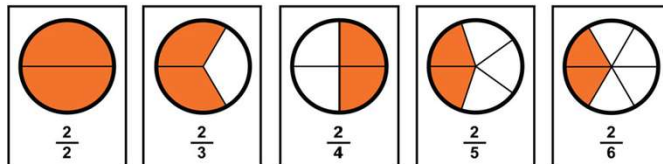
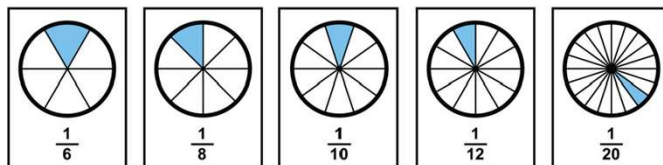
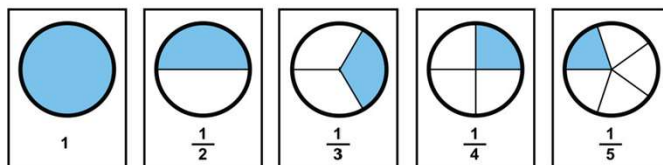


**What is a Fractions**

Fractions represent parts of a whole number.



The whole is split into 5 parts, so the denominator is 5. Two are highlighted, so the numerator is 2. This diagram represents  $\frac{2}{5}$ .



$\frac{4}{5}$  ← Numerator  
← Denominator

**Equivalent Fractions**

$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{10}{20}$

$\frac{1}{3} = \frac{2}{6} = \frac{5}{15} = \frac{20}{60}$

$\frac{1}{10} = \frac{2}{20} = \frac{5}{50} = \frac{10}{100}$

These are all equivalent fractions. You can multiply the denominator and numerator by the same number and you will get more equivalent fractions.

**Multiply Fractions**

Multiply the numerators together, and the denominators together.

Example:  $\frac{3}{4} \times \frac{5}{7} = \frac{3 \times 5}{4 \times 7} = \frac{15}{28}$

**Simplify Fractions**

3 goes into both 6 and 9, so divide both numbers by 3.

$\frac{6}{9} \xrightarrow{\div 3} \frac{2}{3}$

A fraction can be simplified if there is a number that goes into the numerator and denominator.

**Divide Fractions**

Keep/Change/Flip then Multiply

$\frac{3}{4} \div \frac{5}{7} = \frac{3}{4} \times \frac{7}{5} = \frac{21}{20}$

**Mixed Numbers ⇔ Improper Fractions**

**Mixed Number**

Here there are 2 wholes and 1 third, so all together there is  $2\frac{1}{3}$



**Improper Fraction**

There are a total of 7 thirds shaded. So this is  $\frac{7}{3}$  as an improper fraction.

**Add Fractions**

Make the denominators the same then just add numerators.

$\frac{3}{4} + \frac{1}{8} = \frac{6}{8} + \frac{1}{8} = \frac{7}{8}$

Changing  $\frac{3}{4}$  to  $\frac{6}{8}$  is the easiest way to make the denominators the same.

**Comparing Fractions**

Which is largest?

When comparing fractions, make sure they have the same denominator.

$\frac{9}{4}$        $2\frac{1}{7}$

$\frac{9}{4} = \frac{63}{28}$

$\frac{63}{28}$  is greater than  $\frac{60}{28}$

so  $\frac{9}{4}$  is greater than  $2\frac{1}{7}$

$2\frac{1}{7} = \frac{15}{7} = \frac{60}{28}$

**Subtract Fractions**

Make the denominators the same then just subtract numerators.

$\frac{7}{5} - \frac{2}{4} = \frac{28}{20} - \frac{10}{20} = \frac{18}{20} = \frac{9}{10}$

Times first fraction by 5 and second fraction by 4 to make the denominators the same.