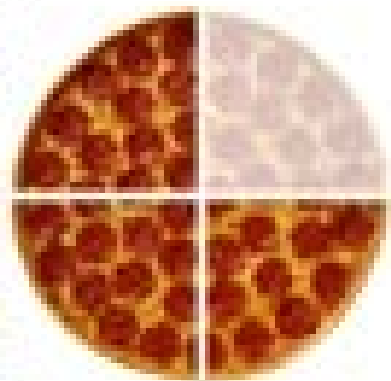


Adding Fractions

Butterfly Method and Finding Common Denominators
(supplemental visuals)



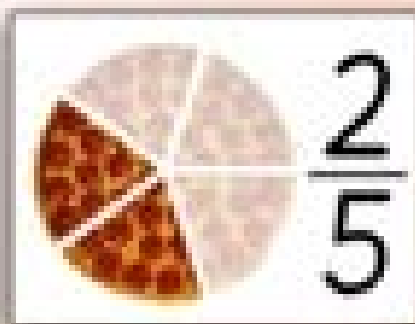
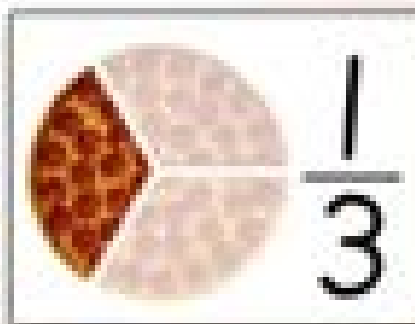
$$\frac{3}{4}$$

Numerator

How many parts
do you have?

Denominator

How many parts is
the whole divided into?



Adding Fractions

What needs
to be the
same?

$$\frac{1}{2} + \frac{1}{3} = ?$$

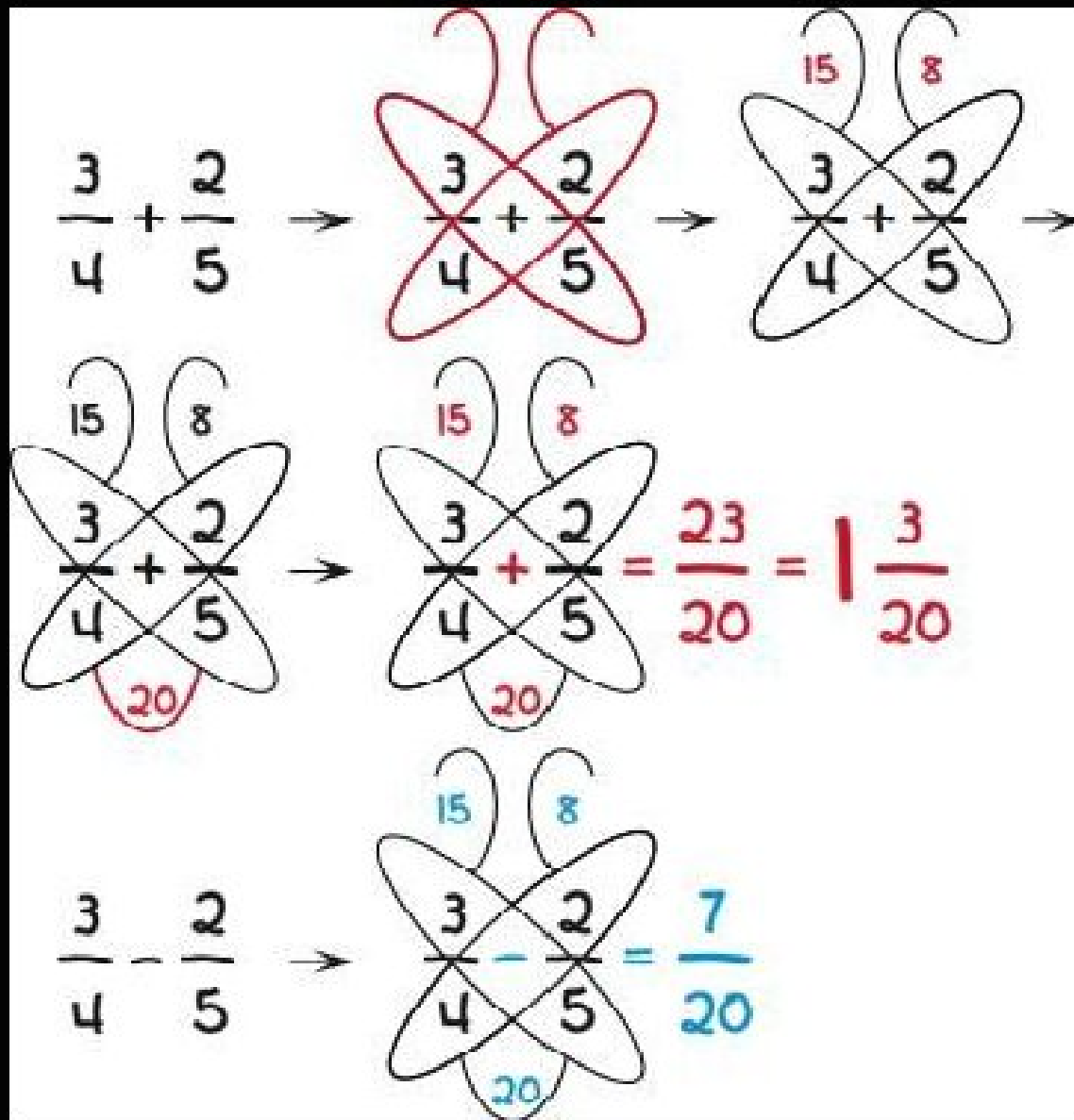
$$\frac{1}{2} \begin{matrix} \times 3 \\ \times 3 \end{matrix} = \frac{3}{6}$$

$$\frac{1}{3} \begin{matrix} \times 2 \\ \times 2 \end{matrix} = \frac{2}{6}$$

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

$$\begin{array}{cc} \left. \begin{array}{c} 2 \\ 3 \end{array} \right\} + \left. \begin{array}{c} 4 \\ 5 \end{array} \right\} \\ \hline 15 \end{array} = \frac{22}{15}$$

Butterfly method for adding and subtracting fractions!



Why NOT to use the "Butterfly Method"

Why
the
butterfly
method?

$$\begin{array}{r} 15 + 12 \\ \hline \begin{array}{cc} 5 & 2 \\ + & + \\ 6 & 3 \end{array} \\ \hline 18 \\ = \frac{27}{18} \end{array}$$

Students could end up with this (true story!)

$$\begin{array}{r} 4500 + 1512 \\ \hline \begin{array}{cc} 450 & 7 \\ + & + \\ 216 & 10 \end{array} \\ \hline 2160 \\ = \frac{6012}{2160} \end{array}$$



Finding Common Denominators

$$\frac{3}{4}, \frac{2}{5}$$

List the multiples for both denominators.

Find the LEAST COMMON MULTIPLE.

$$4: 4, 8, 12, 16, 20, 24$$

$$5: 5, 10, 15, 20, 25$$

Make each fraction into an equivalent fraction with the same denominators.

$$\frac{3}{4} \times \frac{5}{5} = \frac{15}{20}$$

$$\frac{2}{5} \times \frac{4}{4} = \frac{8}{20}$$

Quick Practice

$$1. \frac{3}{9} + \frac{4}{9}$$

$$2. \frac{2}{3} + \frac{1}{9}$$

$$3. \frac{7}{8} + -\frac{2}{4}$$

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