Comparing fractions with the **same denominator**

When comparing parts of the unit that are the same size, the fraction with the largest numerator is the greater fraction.

Ex) $\frac{3}{10} < \frac{5}{10}$ I know this because 3 < 5.

Ex) Katherine ate $\frac{2}{6}$ of a pizza. Patrick ate $\frac{4}{6}$ of a pizza. Who ate more?

$\frac{2}{6} < \frac{4}{6}$ Patrick ate more pizza. I know this because 2 < 4.

Comparing fractions with the **same numerator**

When comparing fractions with different sized parts, the fraction with the smallest denominator is the greater fraction.

Ex) $\frac{2}{8} > \frac{2}{10}$ I know this because $\frac{1}{8} > \frac{1}{10}$

Ex) Julianne ate 3 slices of a pizza cut into 6 pieces. Sarah ate 3 slices of a pizza cut into 8 pieces. Who ate more?

$\frac{3}{6} > \frac{3}{8}$ Julianne ate more pizza. I know this because $\frac{1}{6} > \frac{1}{8}$

Transitive Strategy: Using $\frac{1}{2}$ as a benchmark

When comparing fractions and the denominators are even, compare the fractions to the unit fraction $\frac{1}{2}$.

Ex) $\frac{3}{8} < \frac{4}{6}$ I know this because $\frac{1}{2} = \frac{4}{8}$ and $\frac{1}{2} = \frac{3}{6}$.

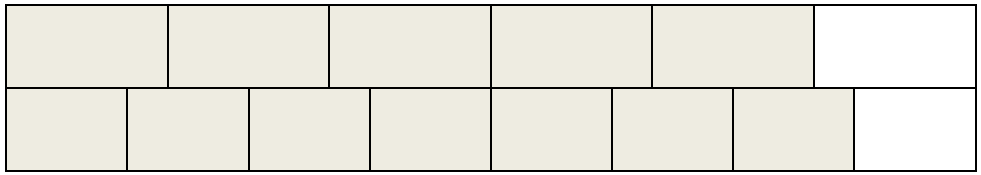
So if $\frac{3}{8} < \frac{4}{8}$ and $\frac{4}{6} > \frac{3}{6}$ then $\frac{3}{8} < \frac{4}{6}$

Ex) Katie ate $\frac{4}{10}$ of a pizza and Mal ate $\frac{3}{4}$ of a pizza. Who ate more?

$\frac{4}{10} < \frac{3}{4}$ I know this because $\frac{1}{2} = \frac{5}{10}$ and $\frac{1}{2} = \frac{2}{4}$. So if $\frac{5}{10} > \frac{4}{10}$ and $\frac{2}{4} < \frac{3}{4}$ then $\frac{4}{10} < \frac{3}{4}$. Therefore, Mal ate more pizza.

Residual Strategy: Fill the whole

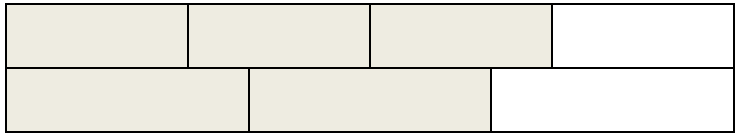
Ex) $\frac{5}{6} < \frac{7}{8}$



I know this because the missing $\frac{1}{6}$ part is smaller than the missing $\frac{1}{8}$ part. So if $\frac{7}{8}$ is closer to 1 whole, then $\frac{5}{6} < \frac{7}{8}$.

Ex) Kelly ate $\frac{3}{4}$ of a pizza and Greg ate $\frac{2}{3}$ of a pizza. Who ate more?

$\frac{3}{4} > \frac{2}{3}$



I know this because the missing $\frac{1}{4}$ part is smaller than the missing $\frac{1}{3}$ part. So if $\frac{3}{4}$ is closer to 1 whole, then $\frac{3}{4} > \frac{2}{3}$.

Therefore, Kelly ate more pizza than Greg.

Comparing fractions with **related denominators**

Change one denominator, and then compare the new fractions.

Ex) $\frac{6}{5} < \frac{13}{10}$ I know $\frac{6}{5} = \frac{12}{10}$. So if $\frac{12}{10} < \frac{13}{10}$, then $\frac{6}{5} < \frac{13}{10}$.

Ex) Kyle ate $\frac{4}{6}$ of a pizza. Jess ate $\frac{7}{12}$ of a pizza. Who ate more?

$\frac{4}{6} > \frac{7}{12}$ I know $\frac{4}{6} = \frac{8}{12}$. So if $\frac{8}{12} > \frac{7}{12}$, then $\frac{4}{6} > \frac{7}{12}$.

Therefore, Kyle ate more pizza than Jess.

Comparing **non related fractions**

Find the Least Common Multiple and change both denominators, then compare the new fractions.

Ex) $\frac{4}{7} < \frac{2}{3}$

Least Common Multiple:

7 14 21 28

3 6 9 12 15 18 21 24

I know $\frac{4}{7} = \frac{12}{21}$ and $\frac{2}{3} = \frac{14}{21}$.

So if $\frac{12}{21} < \frac{14}{21}$, then $\frac{4}{7} < \frac{2}{3}$.

Ex) Mary ate $\frac{5}{9}$ of a pizza. Alex ate $\frac{3}{4}$ of a pizza. Who ate more?

$\frac{5}{9} < \frac{3}{4}$

Least Common Multiple:

9 18 27 36 45 54 63

4 8 12 16 20 24 28 32 36

I know $\frac{5}{9} = \frac{20}{36}$ and $\frac{3}{4} = \frac{27}{36}$. So if $\frac{20}{36} < \frac{27}{36}$

then $\frac{5}{9} < \frac{3}{4}$. Therefore, Alex ate more than Mary.