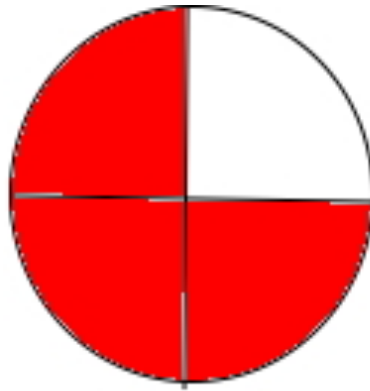


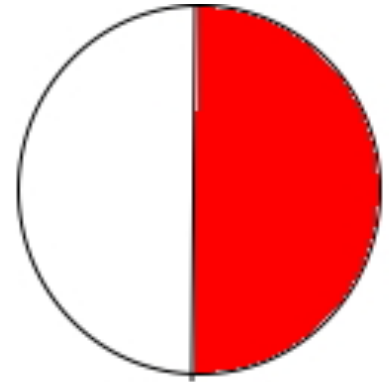
Working with unlike fractions

Introducing:

- Unlike fractions



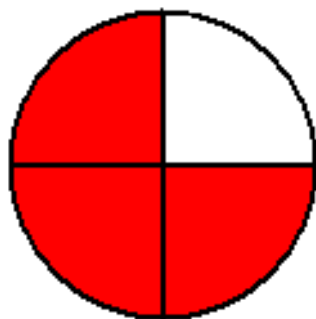
$$\frac{3}{4}$$



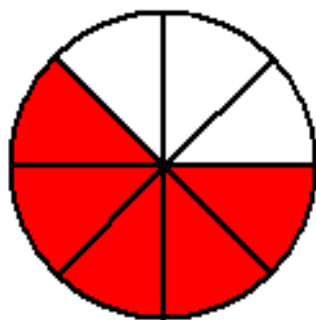
$$\frac{1}{2}$$

Compare Fractions 1

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

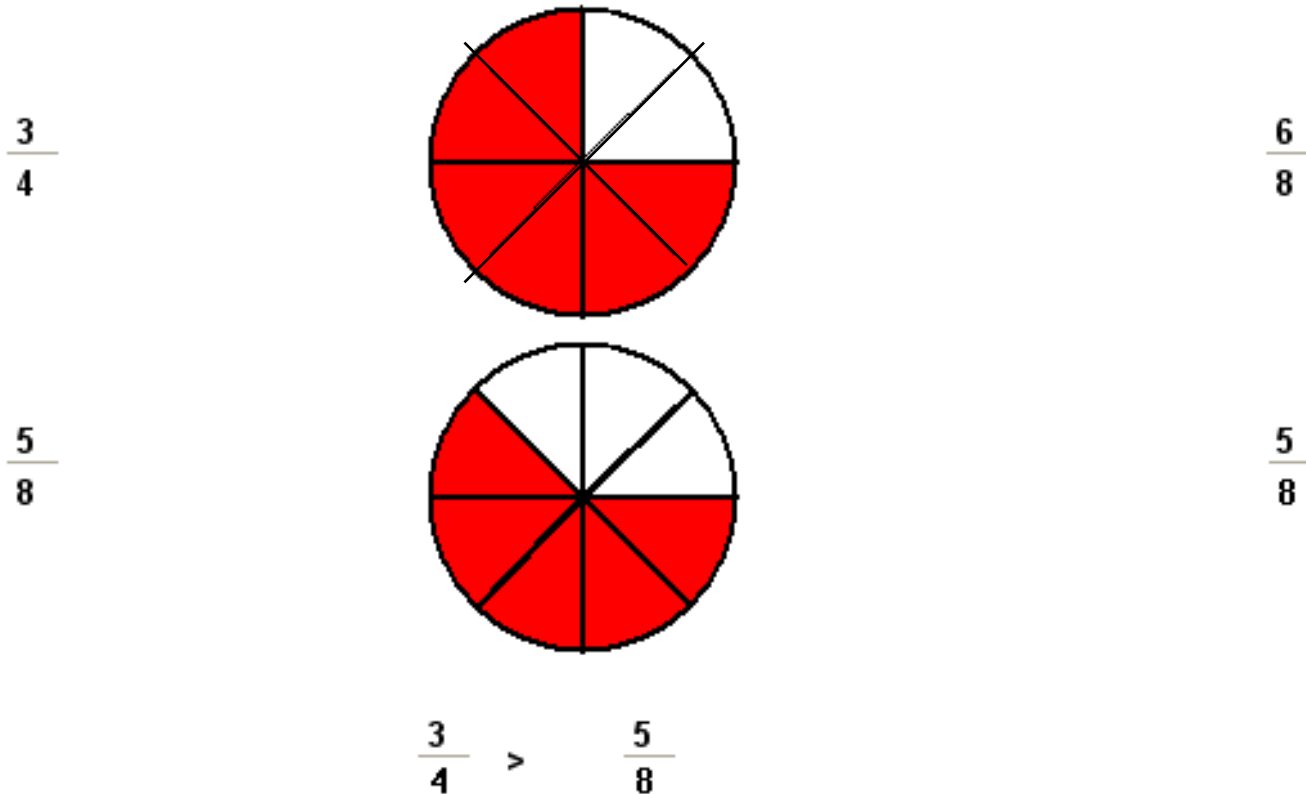


$$\frac{5}{8}$$



The fractions $\frac{3}{4}$ and $\frac{5}{8}$ have unlike denominators and unlike numerators. Fractions that have unlike denominators are *unlike fractions*.

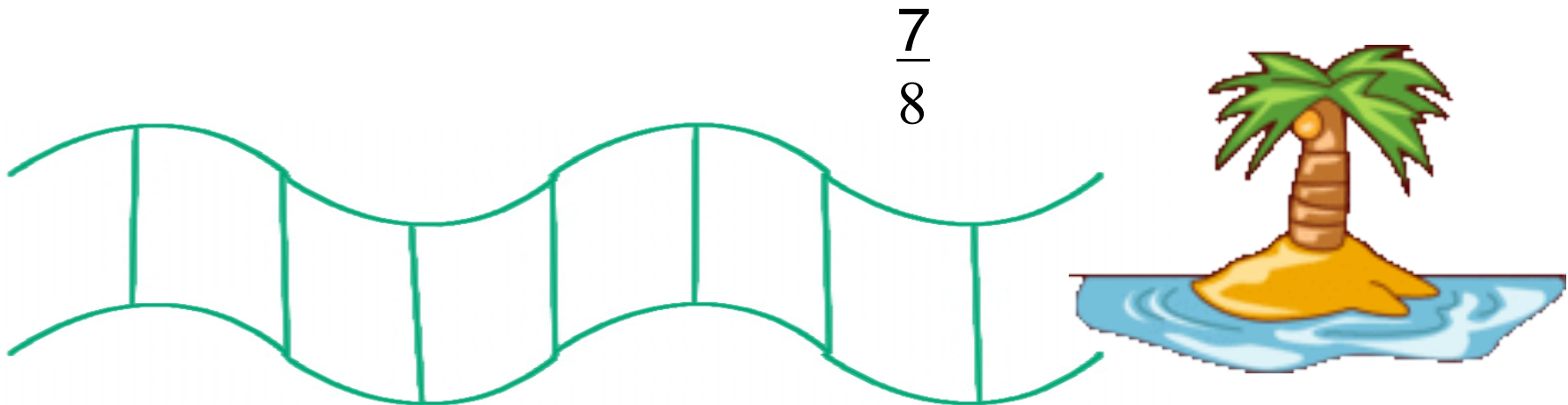
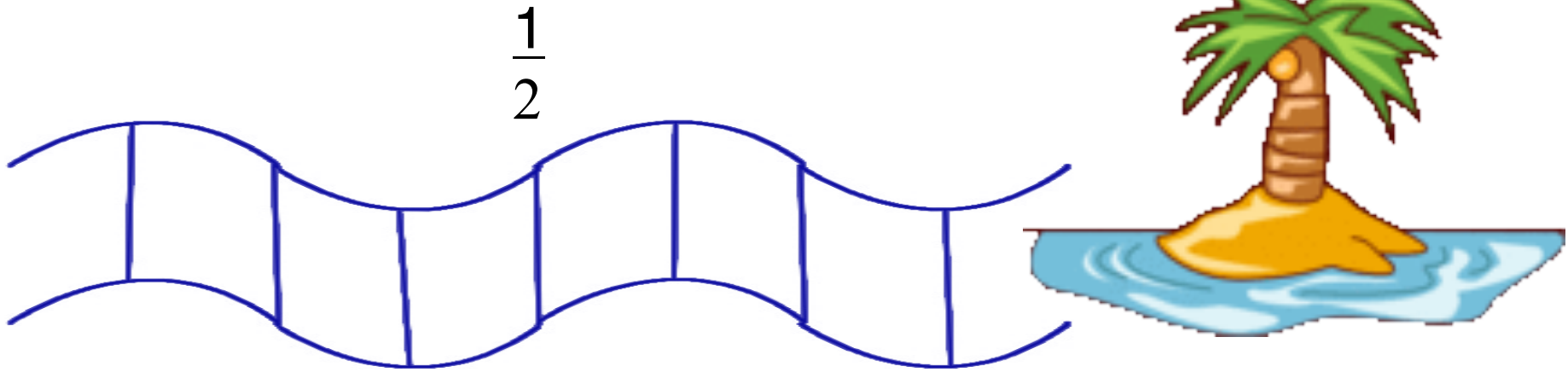
Compare Fractions 2



To compare $\frac{3}{4}$ and $\frac{5}{8}$, rename one or both fractions with like denominators making them *like fractions*. Then compare the numerators. In this case, $\frac{3}{4}$ is renamed as $\frac{6}{8}$ so that we can compare the numerator of $\frac{6}{8}$ and $\frac{5}{8}$.

Unlike Fractions: An Example

If Anna is $\frac{1}{2}$ of a mile away from the shore and Alo is $\frac{7}{8}$ of a mile away from the shore, how much more does Anna need to reach Alo?



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

Anna is $\frac{4}{8}$ of a mile away from the shore.

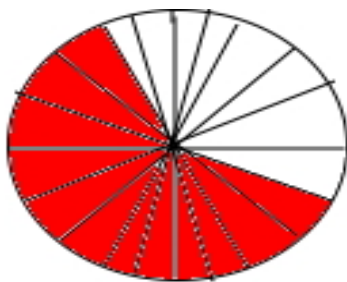
$$\frac{7}{8} - \frac{4}{8} = \frac{3}{8}$$



needs to row
 $\frac{3}{8}$ of a mile to reach Alo.

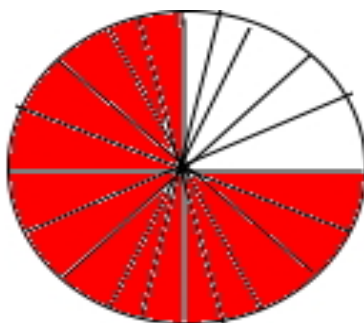
Compare Fractions 3

$$\frac{3}{5}$$



$$\frac{12}{20}$$

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



$$\frac{15}{20}$$

$$\frac{3}{5}$$

<

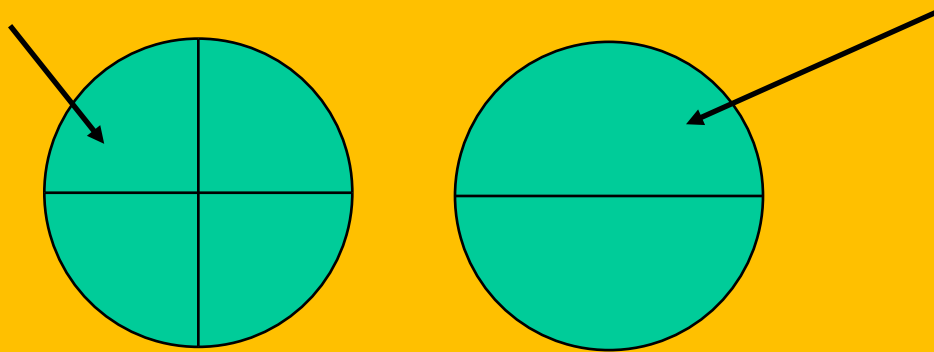
$$\frac{3}{4}$$

The numerators are the same in $\frac{3}{5}$ and $\frac{3}{4}$. The smaller denominator will give a larger fraction.

I'm going to say this again
because it's really important

When the numerators are the same,
the fraction with the smaller
denominator is a larger number

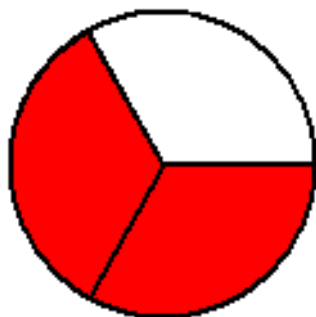
Would you rather have $\frac{1}{2}$ or $\frac{1}{4}$?



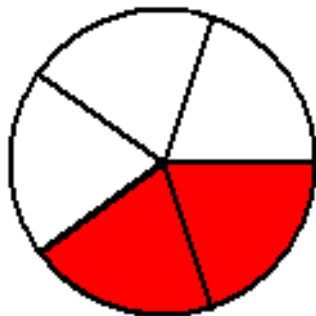
When the numerators are the same,
the fraction with the smaller
denominator is a larger number

Compare Fractions 4

$$\frac{2}{3}$$



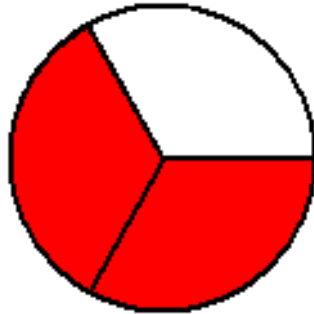
$$\frac{2}{5}$$



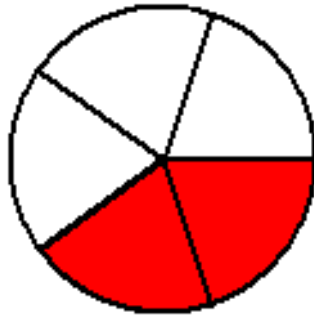
The fractions $\frac{2}{5}$ and $\frac{2}{3}$ have the same numerator. The denominator 5 in the fraction $\frac{2}{5}$ means that the unit has more parts, making the parts smaller. Therefore, $\frac{2}{5}$ is smaller than $\frac{2}{3}$.

Compare Fractions 5

$$\frac{2}{3}$$



$$\frac{2}{5}$$



The larger the denominator the smaller the fraction.

Unlike Fractions: Another Example

Saki and Hachi packed
buffalo hides in a cart.

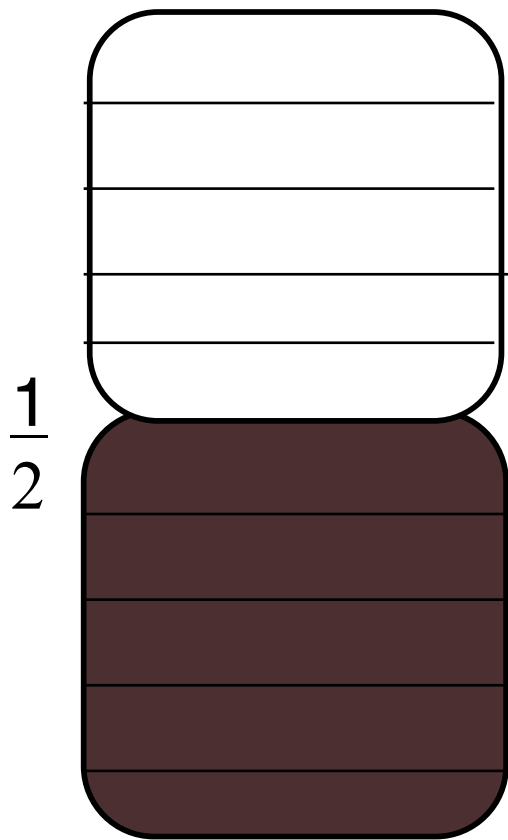
Saki filled $\frac{1}{10}$ of the cart
while Hachi filled $\frac{2}{5}$
of the cart. How much of
the cart is filled?

$$\frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$$

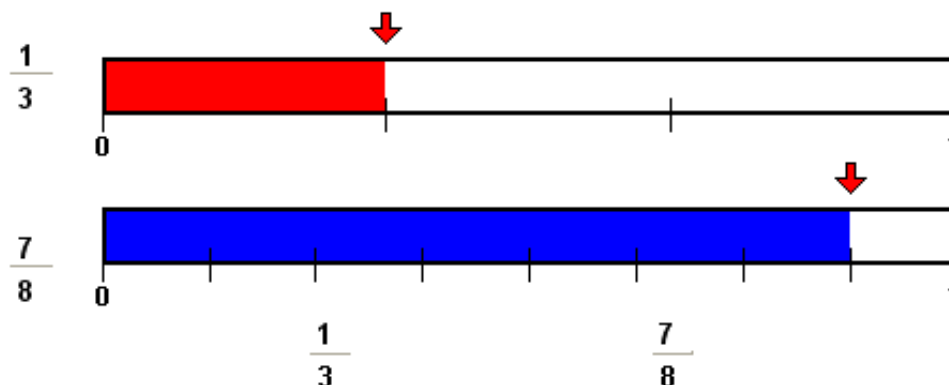
$$\frac{1}{10} + \frac{4}{10} = \frac{5}{10}$$



Hachi and Saki filled up $\frac{5}{10}$ of the cart with hides, which can be simplified to $\frac{1}{2}$.



Compare Fractions 6



Another method for comparing is to think of the fractions. In this example it is obvious that $\frac{1}{3}$ is smaller than $\frac{7}{8}$. For one thing, $\frac{1}{3}$ is smaller than $\frac{1}{2}$ and $\frac{7}{8}$ is larger than $\frac{1}{2}$.

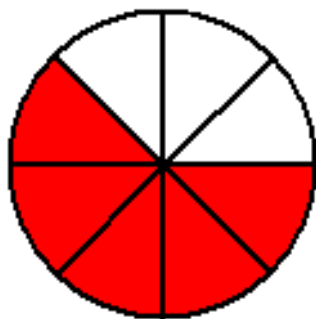
Compare Fractions 7

Being able to compare fractions by picturing them in your mind will help you arrive at an answer more quickly than with calculation. As mentioned before, as the numerator increases it means that you have selected more parts. As the denominator increases it means that the parts are smaller.

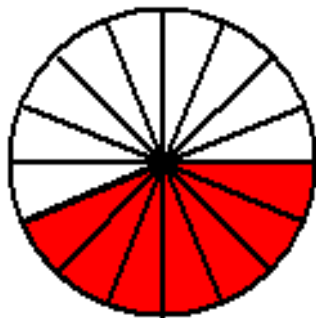
Which is larger, $\frac{5}{8}$ or $\frac{7}{16}$?

Compare Fractions 8

$$\frac{5}{8}$$



$$\frac{7}{16}$$



$\frac{5}{8}$ is larger. It takes practice, but being able to estimate by visualizing the fraction (number sense) will help you to understand fractions better.

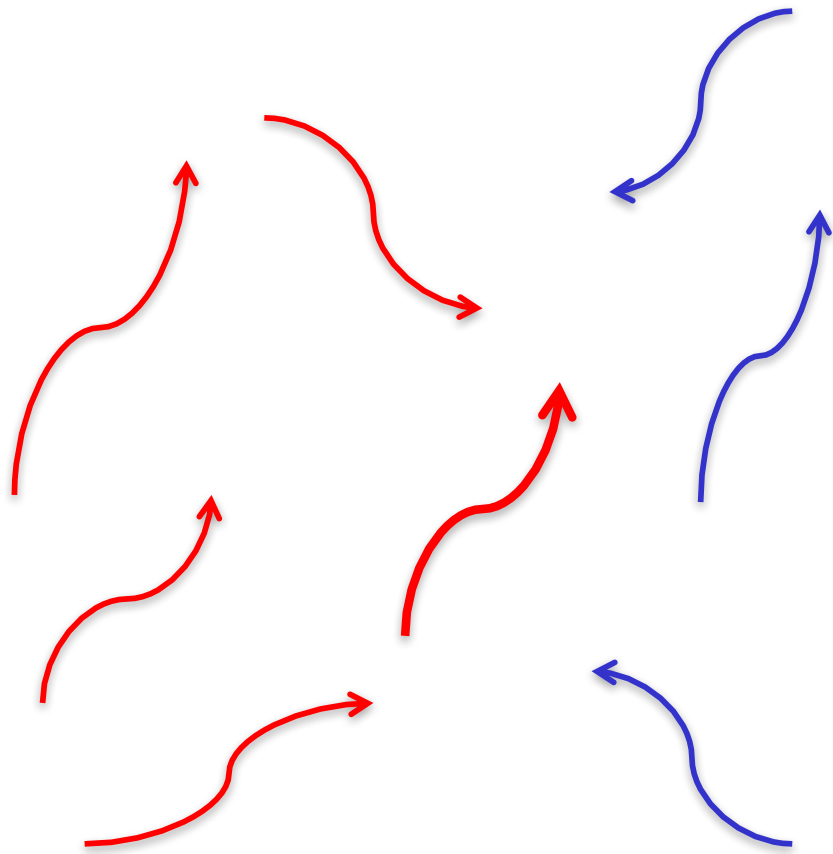
Unlike Fractions: One Last Example

Tasina and Hoksinato went on a hunt for buffalo but they were surrounded by a group of snakes.

To protect themselves, Tasina shot $\frac{1}{4}$ of the snakes while Hoksinato shot $\frac{3}{8}$ of the snakes. How many snakes did Tasina and Hoksinato kill?

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

$$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$$



- Tasina and Hoksinato shot $\frac{5}{8}$ of the snakes.