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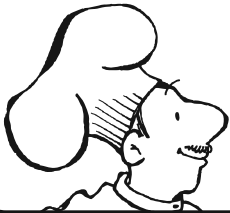
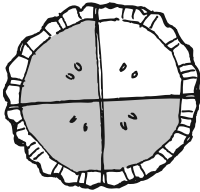
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Identifying Parts of a Whole

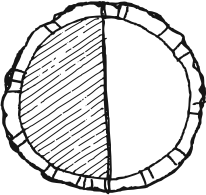
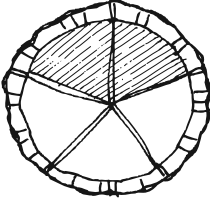
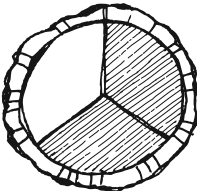
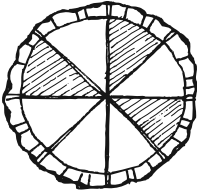
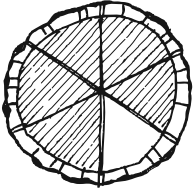
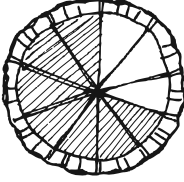
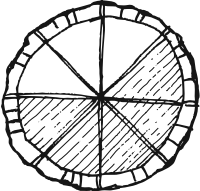
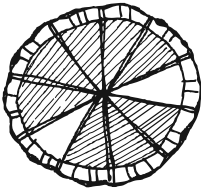



The **numerator** tells how many parts you are comparing to the whole.

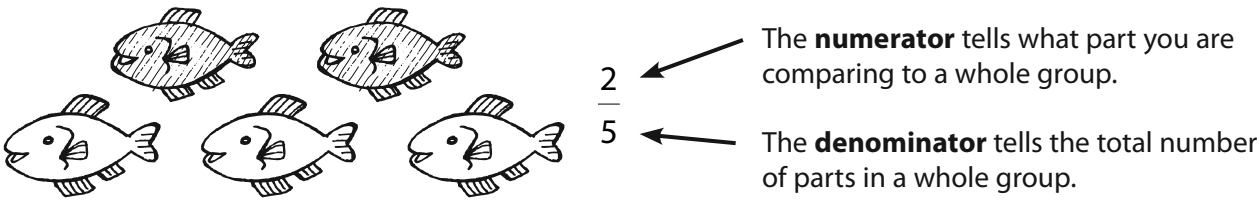
$$\frac{3}{4}$$

The **denominator** tells the total number of equal parts of a whole.

For each picture, write a fraction that tells what part is shaded and what part is not shaded.

| | | | | | |
|---|--|--|--|--|--|
| A  | Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | Not Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | B  | Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | Not Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> |
| C  | Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | Not Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | D  | Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | Not Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> |
| E  | Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | Not Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | F  | Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | Not Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> |
| G  | Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | Not Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | H  | Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> | Not Shaded <input style="width: 40px; height: 30px;" type="text"/> <hr style="width: 40px; margin: 0;"/> <input style="width: 40px; height: 30px;" type="text"/> |

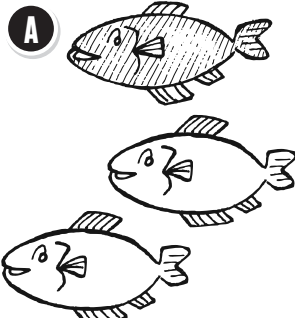
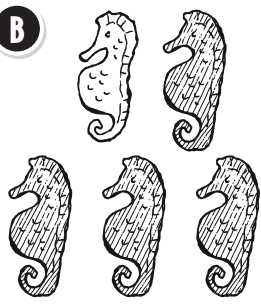
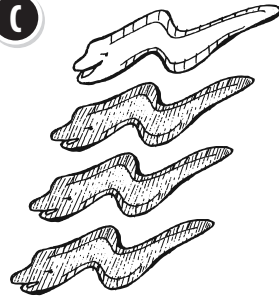
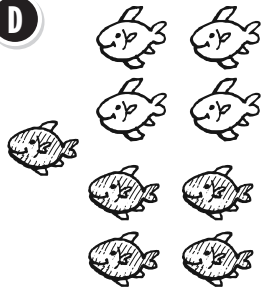

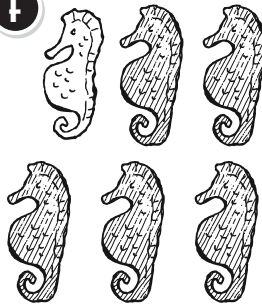
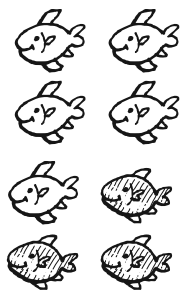
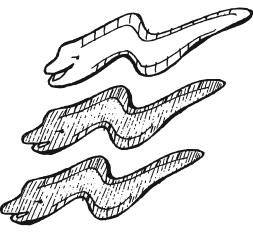
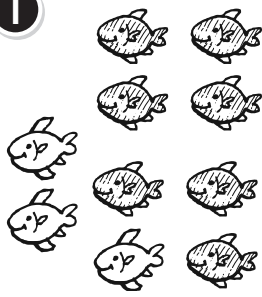
Identifying Parts of a Group



The **numerator** tells what part you are comparing to a whole group.

The **denominator** tells the total number of parts in a whole group.

Write a fraction that tells what part is shaded.

| | | |
|--|--|--|
| <p>A</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> | <p>B</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> | <p>C</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> |
| <p>D</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> | <p>E</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> | <p>F</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> |
| <p>G</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> | <p>H</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> | <p>I</p>  <div style="float: right; margin-left: 20px;"> <input style="width: 40px; height: 30px; border: 1px solid black;"/> <input style="width: 40px; height: 30px; border: 1px solid black;"/> </div> |

- J** Draw 5 fish. Color $\frac{1}{5}$ of the fish red.
Color $\frac{3}{5}$ of them yellow.

What fraction of the fish are red or yellow? _____

What fraction of the fish are not colored? _____

Comparing Fractions—Like Denominators

Color the bars to make them match the fractions in each pair. Circle the greater fraction.



A $\frac{2}{3}$

B $\frac{3}{4}$

$\frac{1}{3}$

$\frac{2}{4}$

C $\frac{2}{5}$

D $\frac{5}{8}$

$\frac{4}{5}$

$\frac{7}{8}$

Compare the fractions. Write > or < in the circles.

E $\frac{4}{6} \bigcirc \frac{5}{6}$

$\frac{3}{5} \bigcirc \frac{1}{5}$

$\frac{6}{8} \bigcirc \frac{1}{8}$

$\frac{2}{9} \bigcirc \frac{3}{9}$

F $\frac{5}{7} \bigcirc \frac{6}{7}$

$\frac{2}{10} \bigcirc \frac{9}{10}$

$\frac{4}{12} \bigcirc \frac{7}{12}$

$\frac{4}{8} \bigcirc \frac{3}{8}$

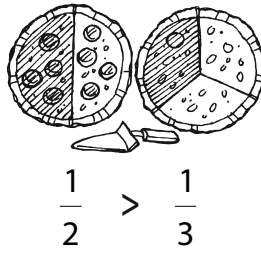
G Jim and Kate each had a strip of paper 24 inches long. Jim used $\frac{3}{8}$ of his strip. Kate used $\frac{5}{8}$ of her strip. Who used more paper? _____

H Brett and Kylie each had a piece of ribbon 18 inches long. Brett used $\frac{2}{3}$ of his ribbon for an art project. Kylie used $\frac{3}{4}$ of her ribbon. Who had more ribbon left? _____

I If two fractions have the same denominator, how can you tell which one is greater? _____

Comparing Fractions—Like Numerators

When comparing fractions that have the same numerator, look at the denominators. The fraction with the smaller denominator is larger.

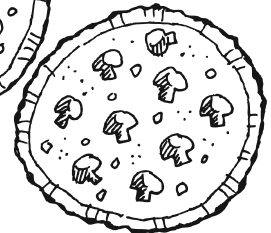
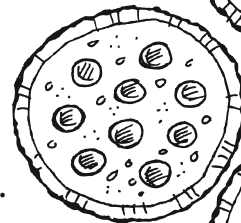
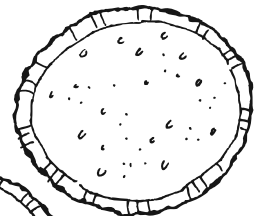


$\frac{1}{2}$ and $\frac{1}{3}$ have the same numerator.

Compare the fractions. Write $>$ or $<$ in the circles.

- | | | | |
|---|-------------------------------------|------------------------------------|--------------------------------------|
| A $\frac{1}{5} \bigcirc \frac{1}{2}$ | $\frac{2}{7} \bigcirc \frac{2}{6}$ | $\frac{3}{4} \bigcirc \frac{3}{5}$ | $\frac{7}{8} \bigcirc \frac{7}{10}$ |
| B $\frac{2}{3} \bigcirc \frac{2}{6}$ | $\frac{5}{8} \bigcirc \frac{5}{10}$ | $\frac{4}{9} \bigcirc \frac{4}{5}$ | $\frac{9}{12} \bigcirc \frac{9}{10}$ |
| C $\frac{7}{12} \bigcirc \frac{7}{11}$ | $\frac{6}{9} \bigcirc \frac{6}{8}$ | $\frac{2}{4} \bigcirc \frac{2}{6}$ | $\frac{8}{10} \bigcirc \frac{8}{12}$ |

- D** A pepperoni pizza and a mushroom pizza were the same size. Kris ate $\frac{2}{10}$ of the pepperoni pizza. Lee ate $\frac{2}{8}$ of the mushroom pizza.



Who ate more pizza? _____

- E** Evan and Lori were making pizzas. Evan sprinkled $\frac{2}{3}$ cup of grated cheese on his pizza. Lori sprinkled $\frac{2}{4}$ cup of cheese on her pizza.

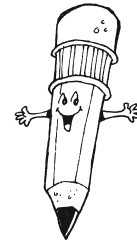
Who used more cheese? _____

- F** Mr. Burton's class did a survey to see which pizza topping was the most popular. One fourth of the students chose cheese. One half of the students chose pepperoni. One sixth of the students chose ham.

Which topping was the most popular? _____

Of the three toppings, which one was the least popular? _____

Ordering Fractions



Write the fractions in order from the least to the greatest.

A $\frac{4}{5}$ $\frac{1}{5}$ $\frac{3}{5}$ $\frac{2}{5}$

B $\frac{3}{6}$ $\frac{5}{6}$ $\frac{4}{6}$ $\frac{2}{6}$

C $\frac{7}{10}$ $\frac{2}{10}$ $\frac{5}{10}$ $\frac{9}{10}$

D $\frac{6}{8}$ $\frac{3}{8}$ $\frac{1}{8}$ $\frac{5}{8}$

E $\frac{1}{9}$ $\frac{1}{6}$ $\frac{1}{5}$ $\frac{1}{8}$

F $\frac{2}{7}$ $\frac{2}{4}$ $\frac{2}{10}$ $\frac{2}{3}$

G $\frac{5}{12}$ $\frac{5}{8}$ $\frac{5}{7}$ $\frac{5}{11}$

H $\frac{3}{4}$ $\frac{3}{12}$ $\frac{3}{10}$ $\frac{3}{8}$

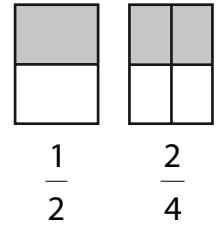
I $\frac{4}{5}$ $\frac{4}{8}$ $\frac{4}{6}$ $\frac{4}{9}$

J $\frac{6}{8}$ $\frac{6}{10}$ $\frac{6}{12}$ $\frac{6}{7}$

Equivalent Fractions

Fractions that describe the same amount are called **equivalent fractions**.

$\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions.



Use the pictures below to help you write equivalent fractions.

| | | |
|--|---|---|
| <p>A</p> <p>$\frac{1}{2} = \frac{\quad}{6}$</p> | <p>B</p> <p>$\frac{1}{3} = \frac{\quad}{6}$</p> | <p>C</p> <p>$\frac{1}{4} = \frac{\quad}{8}$</p> |
| <p>D</p> <p>$\frac{3}{5} = \frac{\quad}{10}$</p> | <p>E</p> <p>$\frac{1}{2} = \frac{\quad}{8}$</p> | <p>F</p> <p>$\frac{2}{3} = \frac{\quad}{6}$</p> |

Use the fraction bars to help you write equivalent fractions.

G $\frac{2}{4} = \frac{\quad}{8}$

$\frac{3}{4} = \frac{\quad}{8}$

H $\frac{1}{3} = \frac{\quad}{9}$

$\frac{2}{3} = \frac{\quad}{9}$

I $\frac{2}{2} = \frac{\quad}{4}$

$\frac{3}{3} = \frac{\quad}{6}$

| | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 1 whole | | | | | | | |
| $\frac{1}{2}$ | | | | $\frac{1}{2}$ | | | |
| $\frac{1}{4}$ | | $\frac{1}{4}$ | | $\frac{1}{4}$ | | $\frac{1}{4}$ | |
| $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ |

| | | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 1 whole | | | | | | | | |
| $\frac{1}{3}$ | | | $\frac{1}{3}$ | | | $\frac{1}{3}$ | | |
| $\frac{1}{6}$ | | $\frac{1}{6}$ | | $\frac{1}{6}$ | | $\frac{1}{6}$ | | $\frac{1}{6}$ |
| $\frac{1}{9}$ | $\frac{1}{9}$ | $\frac{1}{9}$ | $\frac{1}{9}$ | $\frac{1}{9}$ | $\frac{1}{9}$ | $\frac{1}{9}$ | $\frac{1}{9}$ | $\frac{1}{9}$ |

Finding Equivalent Fractions

Equivalent fractions show the same amount.

You can multiply to find equivalent fractions.



You can divide to find equivalent fractions.

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

$$\frac{3}{6} \div 3 = \frac{1}{2}$$

Multiply to find equivalent fractions.

A $\frac{1}{3} \times 2 = \frac{2}{6}$

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

$\frac{1}{4} \times 3 = \frac{3}{12}$

Divide to find equivalent fractions.

B $\frac{4}{10} \div 2 = \frac{2}{5}$

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

$\frac{3}{9} \div 3 = \frac{1}{3}$

Write equivalent fractions.

C $\frac{1}{2} = \frac{\quad}{10}$

$\frac{1}{2} = \frac{\quad}{12}$

$\frac{1}{3} = \frac{\quad}{12}$

D $\frac{6}{8} = \frac{\quad}{4}$

$\frac{3}{12} = \frac{\quad}{4}$

$\frac{2}{8} = \frac{\quad}{4}$

E $\frac{9}{12} = \frac{\quad}{4}$

$\frac{2}{3} = \frac{\quad}{15}$

$\frac{6}{10} = \frac{\quad}{5}$

Simplest Form

A fraction is in **simplest form** when 1 is the only number that can divide both the numerator and the denominator evenly.

$\frac{4}{6}$ is *not* in simplest form because 4 and 6 are both divisible by 2.

$$\frac{4}{6} \div 2 = \frac{2}{3}$$

$\frac{2}{3}$ is in simplest form because the only number that divides 2 and 3 evenly is 1.

$$\frac{2}{3} \div 1 = \frac{2}{3}$$



Look at each row. Circle the fraction that is not in simplest form. Then write it in simplest form.

A $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ _____

B $\frac{11}{12}$ $\frac{7}{12}$ $\frac{9}{12}$ _____

C $\frac{7}{8}$ $\frac{5}{8}$ $\frac{2}{8}$ _____

D $\frac{5}{10}$ $\frac{3}{10}$ $\frac{7}{10}$ _____

E $\frac{3}{6}$ $\frac{1}{6}$ $\frac{5}{6}$ _____

F $\frac{8}{9}$ $\frac{6}{9}$ $\frac{4}{9}$ _____

Write each fraction in simplest form.

G $\frac{2}{6} = \frac{\square}{\square}$

$\frac{3}{9} = \frac{\square}{\square}$

$\frac{8}{10} = \frac{\square}{\square}$

$\frac{3}{12} = \frac{\square}{\square}$

H $\frac{4}{8} = \frac{\square}{\square}$

$\frac{10}{12} = \frac{\square}{\square}$

$\frac{3}{15} = \frac{\square}{\square}$

$\frac{6}{8} = \frac{\square}{\square}$

I $\frac{4}{12} = \frac{\square}{\square}$

$\frac{6}{10} = \frac{\square}{\square}$

$\frac{6}{12} = \frac{\square}{\square}$

$\frac{10}{15} = \frac{\square}{\square}$