

# Greater Than or Less Than?

These fractions have the same denominator. Click on the correct symbol to compare them.

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

< = >

# Greater Than or Less Than?

These fractions have the same denominator. Click on the correct symbol to compare them.

$\frac{1}{5}$  ?  $\frac{4}{5}$

< = >

# Greater Than or Less Than?

These fractions have the same denominator. Click on the correct symbol to compare them.

$\frac{1}{4}$  ?  $\frac{3}{4}$

< = >

# Greater Than or Less Than?

These fractions have the same denominator. Click on the correct symbol to compare them.

$\frac{7}{10}$  ?  $\frac{3}{10}$

< = >

# Greater Than or Less Than?

These fractions have **different denominators**. Click on the correct symbol to compare them.

$\frac{3}{6}$  ?  $\frac{1}{2}$

< = >

These fractions have **different** denominators.

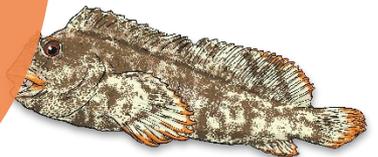
The denominators are **multiples of the same number**.

To compare them, let's change them to the **same denominator** by creating equivalent fractions.


$$\frac{3}{8}$$




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



Lets try changing  $\frac{1}{2}$  to make an equivalent fraction over  $\frac{?}{8}$

What do we need to multiply 2 by to make 8?

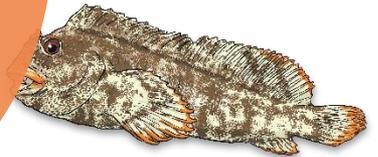
Don't forget to multiply the numerator by the same amount.


$$\frac{3}{8}$$



?


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



Lets try changing  $\frac{1}{2}$  to make an equivalent fraction over  $\frac{?}{8}$

What do we need to multiply 2 by to make 8?

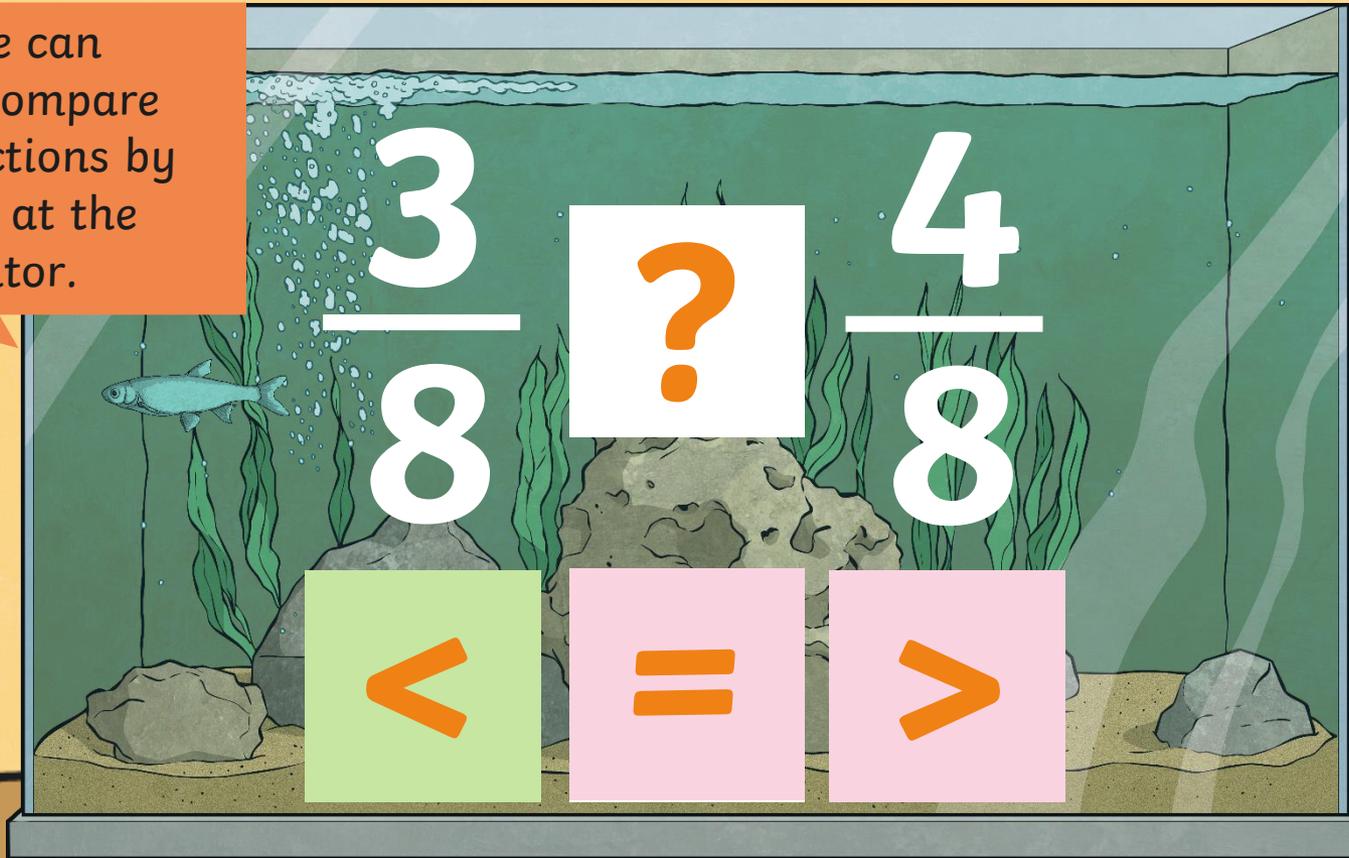
Don't forget to multiply the numerator by the same amount.

$\frac{3}{8}$    ?    $\frac{1}{2} \times 4 = \frac{4}{8}$

# Denominator Multiples



Now we can easily compare the fractions by looking at the numerator.



# Comparing Fractions



Now your turn.

Don't forget the steps from the previous slide. You can always go back if you forget.

2

Write  $<$ ,  $>$  or  $=$  to compare the fractions.

a)  $\frac{1}{5}$    $\frac{4}{15}$

b)  $\frac{2}{5}$    $\frac{4}{15}$

c)  $\frac{2}{5}$    $\frac{6}{15}$

d)  $\frac{2}{3}$    $\frac{6}{15}$

e)  $\frac{2}{3}$    $\frac{6}{12}$

f)  $\frac{2}{3}$    $\frac{6}{9}$

g)  $\frac{2}{9}$    $\frac{1}{3}$

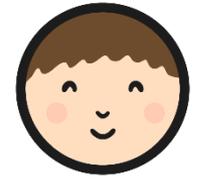
h)  $\frac{4}{9}$    $\frac{1}{3}$

i)  $\frac{4}{12}$    $\frac{1}{3}$

j)  $\frac{8}{12}$    $\frac{2}{3}$

k)  $\frac{8}{12}$    $\frac{3}{3}$

l)  $\frac{8}{12}$    $\frac{3}{4}$



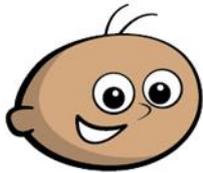
Now you have practised comparing fractions. Can you help Tommy and Eva?

- 5 Tommy and Eva are comparing fractions.

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

$$\frac{8}{12}$$

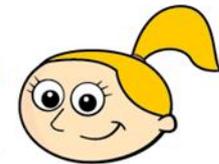
$$\frac{4}{9}$$



Tommy

I found a common denominator of 36 to compare the fractions.

I found a common numerator of 4 to compare the fractions.



Eva

Whose method is more efficient? \_\_\_\_\_

Oh no the fractions have become larger. However this doesn't change how we find the correct answer.

1. Use multiplication to change the denominator of the fractions so the denominators are the same.
2. Remember to do the same multiplication to the numerator.

2

Write  $<$ ,  $>$  or  $=$  to compare the fractions.

a)  $\frac{7}{4}$    $\frac{12}{8}$

d)  $\frac{10}{6}$    $\frac{5}{3}$

g)  $\frac{18}{8}$    $\frac{32}{16}$

b)  $\frac{7}{4}$    $\frac{22}{12}$

e)  $\frac{10}{6}$    $\frac{5}{2}$

h)  $\frac{18}{8}$    $\frac{9}{4}$

c)  $\frac{22}{12}$    $\frac{10}{6}$

f)  $\frac{5}{2}$    $\frac{18}{8}$

i)  $\frac{9}{4}$    $\frac{18}{2}$

Now let's try these problems in the form of a word problem.

Complete the same steps to find out the answer.

Filip has  $3\frac{3}{16}$  bottles of juice.

Scott has  $3\frac{1}{4}$  bottles of juice.

Who has more juice?

\_\_\_\_\_ has more juice.

# Ordering Fractions



These fractions have **the same** denominators.

Compare the **numerators** to put the fractions in order from smallest to largest.

$$\frac{3}{10}$$

$$\frac{5}{10}$$

$$\frac{9}{10}$$

$$\frac{4}{10}$$

$$\frac{1}{10}$$

$$\frac{6}{10}$$

# Denominator Multiples



These fractions have **different** denominators.

The denominators are all **multiples of the same number**.

To put them in order from smallest to largest, we can change them to the **same denominator** by looking for the **lowest common denominator**.



This is the lowest common denominator of 3, 6, and 12.

# Denominator Multiples



We can then use multiplication to change the denominators of all the fractions to the lowest common denominator.

Remember to do the same multiplication to the numerator.

$$\frac{4}{12} \begin{matrix} \times 4 \\ \times 4 \end{matrix}$$

$$\frac{2}{12} \begin{matrix} \times 2 \\ \times 2 \end{matrix}$$

$$\frac{3}{12}$$

$$\frac{8}{12} \begin{matrix} \times 4 \\ \times 4 \end{matrix}$$

$$\frac{10}{12} \begin{matrix} \times 2 \\ \times 2 \end{matrix}$$

$$\frac{5}{12}$$



# Denominator Multiples



We can then use multiplication to change the denominators of all the fractions to the lowest common denominator.

An underwater scene with coral, a clownfish, a shark, and a blue fish. Several circular bubbles contain fractions. Orange arrows point from the original fractions to their equivalent fractions with a denominator of 12.

$\frac{1}{3}$  →  $\frac{4}{12}$

$\frac{1}{6}$  →  $\frac{2}{12}$

$\frac{2}{3}$  →  $\frac{8}{12}$

$\frac{5}{6}$  →  $\frac{10}{12}$

$\frac{5}{12}$

$\frac{1}{6}$

$\frac{3}{12}$

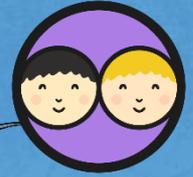
$\frac{1}{3}$

$\frac{5}{12}$

$\frac{2}{3}$

$\frac{5}{6}$

# Fraction Order



Put these fractions in order from smallest to largest by changing the denominators to the lowest common denominator.

$$\frac{5}{16}$$

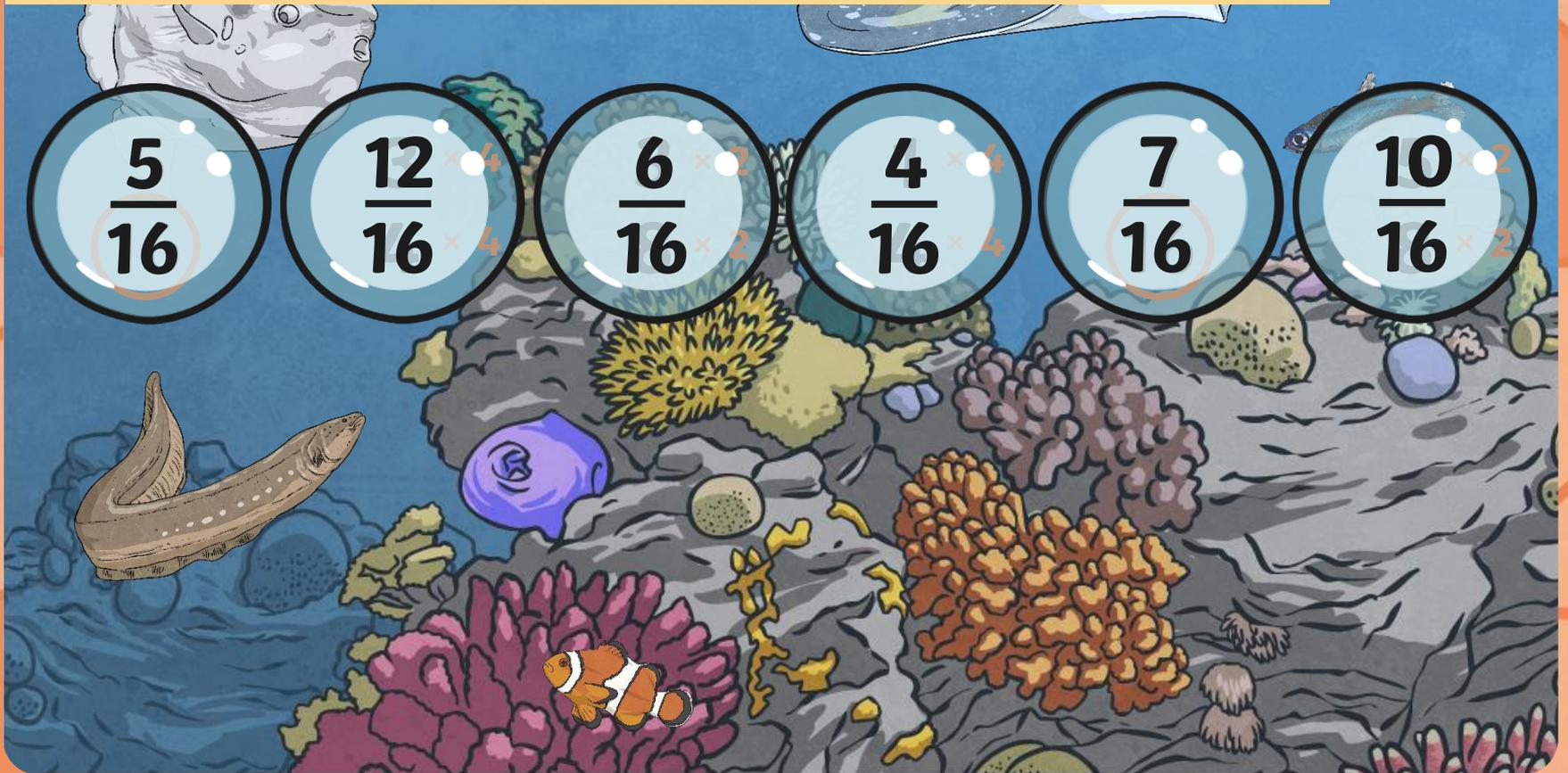
$$\frac{12}{16} \times 4$$

$$\frac{6}{16} \times 2$$

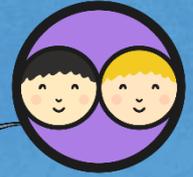
$$\frac{4}{16} \times 4$$

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

$$\frac{10}{16} \times 2$$



# Fraction Order



Put these fractions in order from smallest to largest by changing the denominators to the lowest common denominator.

The bubbles contain the following fractions:

- Top row (left to right):  $\frac{3}{4}$ ,  $\frac{3}{8}$ ,  $\frac{1}{4}$ ,  $\frac{5}{8}$
- Second row (left to right):  $\frac{5}{16}$ ,  $\frac{12}{16}$ ,  $\frac{6}{16}$ ,  $\frac{4}{16}$ ,  $\frac{7}{16}$ ,  $\frac{10}{16}$
- Bottom row (left to right):  $\frac{1}{4}$ ,  $\frac{5}{16}$ ,  $\frac{3}{8}$ ,  $\frac{7}{16}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$

Four orange arrows point from the top row to the bottom row, indicating the conversion process:

- From  $\frac{3}{4}$  to  $\frac{12}{16}$
- From  $\frac{3}{8}$  to  $\frac{6}{16}$
- From  $\frac{1}{4}$  to  $\frac{4}{16}$
- From  $\frac{5}{8}$  to  $\frac{10}{16}$

Put the fractions in order from smallest to largest.

1.  $\frac{3}{5}$   $\frac{5}{20}$   $\frac{4}{10}$   $\frac{15}{40}$

2.  $\frac{3}{8}$   $\frac{3}{4}$   $\frac{1}{2}$   $\frac{3}{16}$

3.  $\frac{5}{7}$   $\frac{11}{28}$   $\frac{4}{14}$   $\frac{33}{56}$

4.  $\frac{4}{5}$   $\frac{2}{3}$   $\frac{9}{15}$   $\frac{23}{30}$

### Steps to success:

1. Write the multiples for each denominator.
2. Find out which they all have in common.
3. Create the equivalent fraction.
4. Write them in the correct order.

Example: Question 1

5: 5, 10, 15, 20, 25, 30, 35, 40

20: 20, 40, 60

10: 10, 20, 30, 40

40: 40, 80

They all have 40

$$\frac{3}{5} = \frac{24}{40}, \quad \frac{5}{20} = \frac{10}{40}, \quad \frac{4}{10} = \frac{16}{40}, \quad \frac{15}{40} = \frac{15}{40}$$

Now we can easily see the order.

Try the next 3 questions.

Were you correct?

- |    |               |                 |                |                 |   |
|----|---------------|-----------------|----------------|-----------------|---|
| 1. | $\frac{3}{5}$ | $\frac{5}{20}$  | $\frac{4}{10}$ | $\frac{15}{40}$ | $\frac{5}{20}$ or $\frac{10}{40}$ , $\frac{15}{40}$ , $\frac{5}{20}$ or $\frac{10}{40}$ , $\frac{5}{20}$ or $\frac{10}{40}$ |
| 2. | $\frac{3}{8}$ | $\frac{3}{4}$   | $\frac{1}{2}$  | $\frac{3}{16}$  | $\frac{3}{16}$ , $\frac{3}{8}$ or $\frac{6}{16}$ , $\frac{1}{2}$ or $\frac{8}{16}$ , $\frac{3}{4}$ or $\frac{12}{16}$       |
| 3. | $\frac{5}{7}$ | $\frac{11}{28}$ | $\frac{4}{14}$ | $\frac{33}{56}$ | $\frac{4}{14}$ or $\frac{16}{56}$ , $\frac{11}{28}$ or $\frac{22}{56}$ , $\frac{33}{56}$ , $\frac{5}{7}$ or $\frac{40}{56}$ |
| 4. | $\frac{4}{5}$ | $\frac{2}{3}$   | $\frac{9}{15}$ | $\frac{23}{30}$ | $\frac{9}{15}$ or $\frac{18}{30}$ , $\frac{2}{3}$ or $\frac{20}{30}$ , $\frac{23}{30}$ , $\frac{4}{5}$ or $\frac{24}{30}$   |

# Lets practise some more

Write the fractions in ascending order.

a)  $\frac{2}{5}, \frac{2}{7}, \frac{2}{3}, \frac{2}{4}, \frac{2}{10}$

b)  $\frac{2}{3}, \frac{5}{9}, \frac{1}{9}, \frac{5}{6}, \frac{2}{9}$

c)  $\frac{3}{5}, \frac{7}{10}, \frac{1}{2}, \frac{3}{10}, \frac{1}{5}$

d)  $\frac{3}{8}, \frac{6}{17}, \frac{12}{30}, \frac{2}{7}, \frac{1}{3}$

What if the fractions are improper number?????

## We follow the same steps

Write the fractions in descending order.

a)  $\frac{8}{3}, \frac{4}{5}, \frac{8}{15}, \frac{8}{2}, \frac{16}{8}$

b)  $\frac{7}{3}, \frac{12}{9}, \frac{15}{9}, \frac{15}{6}, \frac{7}{9}$

c)  $\frac{14}{5}, \frac{17}{10}, \frac{27}{10}, \frac{3}{1}, \frac{42}{20}$

### Steps to success:

1. Write the multiples for each denominator.
2. Find out which they all have in common.
3. Create the equivalent fraction.
4. Write them in the correct order.