## Fractions: Compare Fractions

## Aim:

Compare and order unit fractions, and fractions with the same denominators.

To compare fractions.

Success Criteria: $\quad$ Resources:
I can compare unit fractions.
I can compare fractions with the same denominator.
I can compare fractions using a fraction wall.

## Key/New Words:

Unit fractions, denominator, numerator, greater than, less than, compare.

## Preparation:

Compare Fraction Activity Sheets one per child
Diving into Mastery Activity Sheets as required

Prior Learning: 'It will be helpful if children understand what unit fractions and non-unit fractions are and understand the terminology

## Learning Sequence

|  | Remember It: Children match the models on the Lesson Presentation to an equivalent model. They record the fractions as numbers. |  |
| :---: | :---: | :---: |
|  | Comparing Unit Fractions: Children use models shown on the Lesson Presentation to compare the size of unit fractions, using < or >. Encourage children to reason about the size of the denominator in unit fractions: the smaller the denominator, the greater the fraction. There is a slide on the Lesson Presentation to help explain this. Can children compare unit fractions? |  |
|  | Comparing Fractions with the Same Denominator: Children use models shown on the Lesson Presentation to compare the size of fractions which have the same denominator, using < or >. Encourage children to reason about the size of the numerator in fractions with the same denominator: the greater the numerator, the greater the fraction. Can children compare fractions with the same denominator? | $\bigcirc$ |
|  | Fraction Wall: Children use a fraction wall shown on the Lesson Presentation to compare the size of a variety of fractions, using <, > or $=$. Can children compare fractions using a fraction wall? | $\bigcirc$ |
|  | Comparing Fractions: Children complete the differentiated Comparing Fractions Activity Sheet, comparing a range of fractions. <br> Children compare <br> Children compare <br> Children compare unit fractions and unit fractions and unit fractions and fractions with the same fractions with the same fractions with the same denominator using denominator, drawing denominator, drawing ready drawn models their own models. their own models. and drawing their own They show their They explain why unit models. They shade understanding of the fractions with the the bars on a fraction size of the denominator greater denominators wall to help compare when comparing unit are smaller fractions. the fractions. They use fractions. They shade They shade the bars on <, > or = to compare the bars on a fraction a fraction wall to help fractions. wall to help compare compare the fractions, the fractions, using using <, > or $=$. They <, > or =. They use the identify three fractions fraction wall to make which would fit between comparison statements two fractions. true, by giving two possible answers. |  |

Diving into Mastery: Schools using a mastery approach may prefer to use the following as an alternative activity.
These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section
and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are
applying this to show their depth of understanding.

## Exploreit

Drawit: Children work in pairs. One person draws a model of a fraction less than one. They say either 'greater than' or smaller than'. The other person has to write a fraction which would be either greater or smaller than the fraction drawn.
Learnit: Children will find this superb an excellent tool for strengthening their knowledge of fractions.


## Maths

Fractions


## Compare Fractions



## Aim

- To compare fractions.


## Success Criteria

- I can compare unit fractions.
- I can compare fractions with the same denominator.
- I can compare fractions using a fraction wall.



## Remember It

Match these models to show equivalent fractions.


## Comparing Unit Fractions

Which of these fractions are unit fractions? How do you know?

$$
\frac{1}{4} \quad \frac{2}{8} \quad \frac{1}{6}
$$

How could we work out which of the unit fractions is greater?
We could draw 2 models the same size and divide into the fractions.


If the models are lined up, we can see which fraction is greater.

$\frac{1}{4}$ is greater than $\frac{1}{6}$

$$
\frac{1}{4}>\frac{1}{6}
$$

## Comparing Unit Fractions

Draw your own models to compare these pairs of fractions.

Use > for 'is greater than'.
Use < for 'is less than'.


## Comparing Unit Fractions

Let's look at these unit fraction pairs again.

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

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

$$
\frac{1}{3}>\frac{1}{8}
$$

The unit fractions with the greater denominator are greater.

The unit fractions with the smaller denominator are greater.


Who do you agree with? Why?

## Comparing Unit Fractions

## Jas was correct. Why?

Let's compare two fractions to prove it.


How many equal parts does the whole need to be divided into?
$\square$


How many equal parts does the whole need to be divided into?


The unit fractions with the smaller denominator are greater.

In $\frac{1}{2}$, there are 2 equal parts. In $\frac{1}{4}$, there are 4 equal parts.
If we compare the parts,..we can see that 1 equal part in $\frac{1}{2}$ is greater than 1 equal part in $\frac{1}{4}$.

The unit fraction with the smaller denominator is greater.

## Comparing Fractions with the Same Denominator

Group these fractions into pairs with the same denominator.

$$
<\quad \begin{array}{llllll}
\frac{2}{5} & \frac{5}{6} & \frac{3}{4} & \frac{4}{5} & \frac{1}{4} & \frac{2}{6}
\end{array}>
$$


$\square$




Comparing Fractions with the Same Denominator
Draw your own models to compare these pairs of fractions.


## Comparing Fractions with the Same Denominator



Who do you agree with? Why?

Comparing Fractions with the Same Denominator Leona was correct. Why?

Let's compare two fractions to prove it.


When you compare fractions with the same denominator, the greater the numerator the greater the fraction.

In $\frac{4}{5}, 4$ of the 5 equal parts have been coloured.
In $\frac{2}{5}, 2$ of the 5 equal parts have been coloured.

As both fractions have been divided into the same amount of equal parts, the fraction with the greater numerator is the greater fraction.

## Fraction wall

A fraction wall is very useful to compare a range of fractions.





Fraction Wall
Use the fraction wall to make each statement true.
There will be more than one answer!


Did you come up with anything different?

## Comparing fractions

Use the skills you have learned to complete the activity sheet.


## Diving into Mastery



## Challenge

Use these digits to make each statement true.


Did you come up with anything different?

## Aim

- To compare fractions.


## Success Criteria

- I can compare unit fractions.
- I can compare fractions with the same denominator.
- I can compare fractions using a fraction wall.




## Regent Studies|www.regentstudies.com

Aim: To compare fractions.


| T | Teacher | I | Independent |
| :--- | :--- | :--- | :--- |
| PPA | Planning, Preparation and Assessment | AL | Adult Led |
| S | Supply | GP | Guided Practice |



Next Steps

| T | Teacher | I | Independent |
| :--- | :--- | :--- | :--- |
| PPA | Planning, Preparation and Assessment | AL | Adult Led |
| S | Supply | GP | Guided Practice |

Regent Studies \| www.regentstudies.com

## Comparing Fractions

To compare fractions.

1) Use < or > to compare the pairs of unit fractions. Use the models to help.
a) $\frac{1}{6} \square \frac{1}{3}$

b) $\frac{1}{4} \square \frac{1}{5}$

c) $\frac{1}{3} \square \frac{1}{4}$

2) Use < or > to compare the pairs of unit fractions. Draw your own models to help.
a) $\frac{1}{3} \square \frac{1}{2}$
b) $\frac{1}{6} \square \frac{1}{4}$
c) $\frac{1}{3} \square \frac{1}{5}$
3) Use < or > to compare the pairs of fractions with the same denominators. Use the models or draw your own to help.
a) $\frac{4}{6} \square \frac{3}{6}$

b) $\frac{2}{8} \square \frac{7}{8}$

c) $\frac{4}{5} \square \frac{2}{5}$
d) $\frac{1}{4} \square \frac{3}{4}$
4) Shade the bars in the fraction wall to help compare the fractions. Use $<$, $>$ or $=$.

a) $\frac{1}{2} \square \frac{3}{6}$
b) $\frac{1}{6} \square \frac{1}{5}$
c) $\frac{3}{4} \square \frac{5}{6}$
d) $\frac{3}{5} \square \frac{1}{2}$

## Comparing Fractions

To compare fractions.

1) Use < or > to compare the pairs of unit fractions. Draw models to help.
a) $\frac{1}{6} \square \frac{1}{3}$
b) $\frac{1}{4} \square \frac{1}{5}$
c) $\frac{1}{3} \square \frac{1}{4}$
d) $\frac{1}{8} \square \frac{1}{5}$
2) Choose the correct word to complete each sentence.
greater smaller

The unit fractions with the greater denominator are $\qquad$ fractions.

The unit fractions with the smaller denominator are $\qquad$ fractions.
3) Use < or > to compare the pairs of fractions with the same denominators. Draw your own models to help.
a) $\frac{2}{4} \square \frac{1}{4}$
b) $\frac{2}{7} \square \frac{3}{7}$
c) $\frac{5}{9} \square \frac{2}{9}$
4) The fraction wall has been partially labelled. label the whole fraction wall.

5) Shade the bars in the fraction wall to help compare the fractions. Use $<,>$ or $=$.
a) $\frac{3}{5} \square$
b) $\frac{2}{3} \square \frac{3}{7}$
c) $\frac{4}{6} \square \frac{2}{3}$
d) $\frac{1}{2} \square \frac{5}{8}$
6) Use the fraction wall to make these statements true. Write 2 answers for each.
a) $\frac{2}{3}>\frac{\square}{\square}$ or $\frac{\square}{\square \square}$
b) $\frac{2}{5}<$



## Comparing Fractions

To compare fractions.

1) Use < or > to compare the pairs of unit fractions. Draw models to help.
a) $\frac{1}{10} \square \frac{1}{2}$
b) $\frac{1}{7} \square \frac{1}{8}$
c) $\frac{1}{5} \square \frac{1}{4}$
d) $\frac{1}{6} \square \frac{1}{8}$
2) 'The unit fractions with the greater denominators are smaller fractions.' Explain why this is true.
3) Use < or > to compare the pairs of fractions with the same denominators. Draw your own models to help.
a) $\frac{3}{5} \square \frac{1}{5}$
b) $\frac{3}{10} \square \frac{9}{10}$
c) $\frac{4}{8} \square \frac{1}{8}$
4) Label the fraction wall.

5) Shade the bars in the fraction wall to help compare the fractions. Use $<,>$ or $=$.
a) $\frac{3}{8}$$\frac{1}{5}$
b) $\frac{2}{7} \square \frac{3}{4}$
c) $\frac{1}{2} \square \frac{3}{6}$
d) $\frac{1}{2} \square \frac{6}{8} \square \frac{3}{4}$
6) I am thinking of a fraction. It is greater than $\frac{2}{5}$ but smaller than $\frac{3}{4}$. Write three fractions from the fraction wall that I could be thinking of.


## Compare Fractions Answers

1) 

a) $\frac{1}{6} \longrightarrow \frac{1}{3}$
b) $\frac{1}{4} \longrightarrow \frac{1}{5}$
c) $\frac{1}{3} \longrightarrow \frac{1}{4}$
2)
a) $\frac{1}{3} \longrightarrow \frac{1}{2}$

b) $\frac{1}{6}<\frac{1}{4}$
c) $\frac{1}{3} \longrightarrow \frac{1}{5}$
 $\frac{1}{3}$
$\frac{1}{5}$
3)
a) $\frac{4}{6}>\frac{3}{6}$
 $\frac{4}{6}$
$\frac{3}{6}$
b) $\frac{2}{8}<\frac{7}{8}$
 $\frac{2}{8}$
 $\frac{7}{8}$
c) $\frac{4}{5} \longrightarrow \frac{2}{5}$
d) $\frac{1}{4}<\frac{3}{4}$

4)
a) $\frac{1}{2} \square \frac{3}{6}$
b) $\frac{1}{6} \longrightarrow \frac{1}{5}$
c) $\frac{3}{4} \longrightarrow \frac{5}{6}$
d) $\frac{3}{5} \longrightarrow \frac{1}{2}$

## Compare Fractions Answers

1) 

a) $\frac{1}{6}<\frac{1}{3}$

b) $\frac{1}{4} \longrightarrow \frac{1}{5}$

c) $\frac{1}{3} \longrightarrow \frac{1}{4}$

d) $\frac{1}{8}<\frac{1}{5}$

2)

The unit fractions with the greater denominator are smaller fractions.
The unit fractions with the smaller denominator are greater fractions.
3)
a) $\frac{2}{4} \longrightarrow \frac{1}{4}$

b) $\frac{2}{7} \longrightarrow \frac{3}{7}$

$\frac{2}{7}$

c) $\frac{5}{9} \longrightarrow \frac{2}{9}$


4)

5)
a) $\frac{3}{5} \longrightarrow \frac{1}{4}$
b) $\frac{2}{3} \square \frac{3}{7}$
c) $\frac{4}{6}=\frac{2}{3}$
d) $\frac{1}{2}<\frac{5}{8}$
6) Multiple answers possible. Accept any of the following.
a) $\frac{1}{2} \frac{1}{4} \frac{2}{4} \frac{1}{5} \frac{2}{5} \quad \frac{3}{5} \frac{1}{6} \frac{2}{6} \frac{3}{6}$
b) $\frac{1}{2} \frac{2}{2} \frac{2}{3} \quad \frac{3}{3} \frac{2}{4} \frac{3}{4} \frac{4}{4} \frac{3}{6} \frac{4}{6} \frac{5}{6} \frac{6}{6}$
$\begin{array}{llllllllll}\frac{1}{7} & \frac{2}{7} & \frac{3}{7} & \frac{4}{7} & \frac{1}{8} & \frac{2}{8} & \frac{3}{8} & \frac{4}{8} & \frac{5}{8}\end{array}$


## Compare Fractions Answers

1) 

a) $\frac{1}{10}<\frac{1}{2}$

b) $\frac{1}{7} \longrightarrow \frac{1}{8}$

c) $\frac{1}{5}<\frac{1}{4}$

d) $\frac{1}{6} \longrightarrow \frac{1}{8}$

2) Dividing a whole into more equal parts makes each part smaller and so the fraction will be smaller.
3)
a) $\frac{3}{5} \longrightarrow \frac{1}{5}$
$\square$
$\square$
b) $\frac{3}{10}<\frac{9}{10}$
$\square$

c) $\frac{4}{8} \longrightarrow \frac{1}{8}$

4)

5)
a) $\frac{3}{8} \longrightarrow \frac{1}{5}$
b) $\frac{2}{7}<\frac{3}{4}$
c) $\frac{1}{2}=\frac{3}{6}$
d) $\frac{1}{2}<\frac{6}{8}=\square \frac{3}{4}$
6) Any $\mathbf{3}$ fractions from:

$$
\begin{array}{llllllllllll}
\frac{1}{2} & \frac{2}{3} & \frac{2}{4} & \frac{3}{5} & \frac{3}{6} & \frac{4}{6} & \frac{3}{7} & \frac{4}{7} & \frac{5}{7} & \frac{4}{8} & \frac{5}{8}
\end{array}
$$

1) 



C

2)

3) a) Bar model $B$ shows $\frac{1}{4}$, which is the largest fraction.
b) Bar model C shows $\frac{1}{10}$, which is the smallest fraction.
4) $\frac{1}{2}$ is the largest fraction:


1) Sophia is correct. $\frac{1}{6}$ is the larger fraction as the whole has been split into 6 equal parts rather than 12, making each part larger. When the numerators are the same, the larger the denominator, the smaller the fraction.
2) Shen is correct. $\frac{2}{6}$ is equivalent to $\frac{1}{3}$.
3) a) The bar model should be the same length as the original, separated into equal proportions and should show a fraction greater than $\frac{3}{8}$. One example would be:

b) If children have drawn a bar separated into eighths, their answer should explain that they have shaded more than 3 parts of the bar. If they have used a bar separated differently, their answer should explain that the fraction they have shaded is equivalent to more than $\frac{3}{8}$.
4) There are 8 possible answers:
$\frac{1}{3}>\frac{1}{5}$
$\frac{1}{4}>\frac{1}{5}$
$\frac{3}{6}>\frac{1}{5}$
$\frac{3}{8}>\frac{1}{5}$
$\frac{3}{4}>\frac{1}{5}$
$\frac{6}{8}>\frac{1}{5}$
$\frac{4}{6}>\frac{1}{5}$
$\frac{4}{8}>\frac{1}{5}$
5) There are 6 possible answers:
$\frac{1}{6}<\frac{2}{12}$
$\frac{1}{10}<\frac{2}{12}$
$\frac{1}{9}<\frac{2}{12}$
$\frac{2}{6}<\frac{2}{12}$
$\frac{2}{9}<\frac{2}{12}$
$\frac{2}{10}<\frac{2}{12}$
6) Neither child is correct because $\frac{3}{4}$ is equivalent to $\frac{6}{8}$ so they will both eat the same amount of sweets. Children may have drawn a bar model to prove their answer.
7) Circle the fractions which are smaller than $\frac{4}{5}$ ?
A $\frac{1}{5}$

C

8) Circle the fractions which are greater than $\frac{1}{4}$ ?
A $\frac{2}{4}$

C

9) a) Look at the bar models below. Write the greatest fraction shown.
b) Look at the bar models below. Write the smallest fraction shown.


B


C


D

4) Which fraction is the greatest? Prove your answer using bar models.
$\begin{array}{lll}\frac{1}{8} & \frac{1}{2} & \frac{1}{4}\end{array}$
$\qquad$
$\qquad$


1) Do you agree with Sophia? Explain your reasoning.

$\qquad$
$\qquad$
2) Two children are comparing fractions.
$\begin{array}{llll}\frac{4}{6} & \frac{3}{6} & \frac{5}{6} & \frac{2}{6}\end{array}$


Who do you agree with? Use a bar model to explain your answer.
$\qquad$

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

3) A bar model is shaded to show a fraction.

a) On the bar model below, draw and shade a greater fraction.

b) Explain how you know that your fraction is greater than the original.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
4) Choose two of the following digits to make the number sentence true. (The fraction you make must be less than 1 whole.) How many number sentences can you create?
1 $\square$

$>\frac{1}{5}$

5) Choose two of the following digits to make the number sentence true. (The fraction you make must be less than 1 whole.) How many number sentences can you create?
6

10

9

$<\frac{2}{12}$
6) Two friends each have a bag of sweets and discuss who will eat the most.


If I eat $\frac{6}{8}$ of the sweets, I will eat the most because 6 is greater than 3.

Jacqui

Which of the two friends is correct? Use reasoning to explain your answer.

1) Which of these fractions are smaller than $\frac{4}{5}$ ?
A $\frac{1}{5}$
B


C

2) Which of these fractions are greater than $\frac{1}{4}$ ?

A $\frac{2}{4}$
B


C

3) a) Look at the bar models below. Write the greatest fraction shown
b) Look at the bar models below. Write the smallest fraction shown.

4) Which fraction is the greatest? Prove your answer using bar models.
$\begin{array}{lll}\frac{1}{8} & \frac{1}{2} & \frac{1}{4}\end{array}$

1) Which of these fractions are smaller than $\frac{4}{5}$ ?
A $\frac{1}{5}$
B


C

2) Which of these fractions are greater than $\frac{1}{4}$ ?

A $\frac{2}{4}$

B


C

3) a) Look at the bar models below. Write the greatest fraction shown
b) Look at the bar models below. Write the smallest fraction shown.



4) Which fraction is the greatest? Prove your answer using bar models.
$\frac{1}{8} \quad \frac{1}{2} \quad \frac{1}{4}$

1) Do you agree with Sophia? Explain your reasoning.

2) Two children are comparing fractions.


Who do you agree with? Use a bar model to explain your answer.
3) a) A bar model is shaded to show a fraction. Copy the model then, underneath it, draw and shade another bar model to show a greater fraction.

b) Explain how you know that your fraction is greater than the original.

1) Do you agree with Sophia? Explain your reasoning.

2) Two children are comparing fractions.


Who do you agree with? Use a bar model to explain your answer.
3) a) A bar model is shaded to show a fraction. Copy the model then, underneath it, draw and shade another bar model to show a greater fraction.

b) Explain how you know that your fraction is greater than the original.

1) Choose two of the following digits to make the number sentence true. (The fraction you make must be less than 1
 whole.) How many number sentences can you create?

2) Choose two of the following digits to make the number sentence true. (The fraction you make must be less than 1 whole.) How many number sentences can you create?

3) Two friends each have a bag of sweets and discuss who will eat the most.


Which of the two friends is correct? Use reasoning to explain your answer.

1) Choose two of the following digits to make the number sentence true. (The fraction you make must be less than 1 whole.) How many number sentences can you create?

4

2) Choose two of the following digits to make the number sentence true. (The fraction you make must be less than 1 whole.) How many number sentences can you create?

3) Two friends each have a bag of sweets and discuss who will eat the most.


Which of the two friends is correct? Use reasoning to explain your answer.

Fractions | Compare Fractions

| To compare fractions. |  |  |
| :--- | :--- | :--- |
| I can compare unit fractions. |  |  |
| I can compare fractions with the same denominator. |  |  |
| I can compare fractions using a fraction wall. |  |  |

Fractions | Compare Fractions

| To compare fractions. |  |  |
| :--- | :--- | :--- |
| I can compare unit fractions. |  |  |
| I can compare fractions with the same denominator. |  |  |
| I can compare fractions using a fraction wall. |  |  |

Fractions | Compare Fractions

| To compare fractions. |  |  |
| :--- | :--- | :--- |
| I can compare unit fractions. |  |  |
| I can compare fractions with the same denominator. |  |  |
| I can compare fractions using a fraction wall. |  |  |

Fractions | Compare Fractions

| To compare fractions. |  |  |
| :--- | :--- | :--- |
| I can compare unit fractions. |  |  |
| I can compare fractions with the same denominator. |  |  |
| I can compare fractions using a fraction wall. |  |  |

Fractions | Compare Fractions

| To compare fractions. |  |  |
| :--- | :--- | :--- |
| I can compare unit fractions. |  |  |
| I can compare fractions with the same denominator. |  |  |
| I can compare fractions using a fraction wall. |  |  |

Fractions | Compare Fractions

| To compare fractions. |  |  |
| :--- | :--- | :--- |
| I can compare unit fractions. |  |  |
| I can compare fractions with the same denominator. |  |  |
| I can compare fractions using a fraction wall. |  |  |

Fractions | Compare Fractions

| To compare fractions. |  |  |
| :--- | :--- | :--- |
| I can compare unit fractions. |  |  |
| I can compare fractions with the same denominator. |  |  |
| I can compare fractions using a fraction wall. |  |  |

Fractions | Compare Fractions

| To compare fractions. |  |  |
| :--- | :--- | :--- |
| I can compare unit fractions. |  |  |
| I can compare fractions with the same denominator. |  |  |
| I can compare fractions using a fraction wall. |  |  |

