

Equivalent fraction families

Notes and guidance

In this small step, children develop their understanding of equivalent fractions, both within 1 and greater than 1, mainly through exploring bar models.

Building on learning from Year 3, children begin by finding equivalent fractions by splitting up models into smaller parts in a range of different ways. The key learning point is that as long as each of the existing parts are split equally into the same number of smaller parts, then the fractions will be equivalent. A common misconception is that children believe they can only split up existing parts into two equal sections, which limits the number of equivalent fractions that they will find. Children begin to use fraction walls to help create equivalent fraction families.

Although not the key focus, once children are comfortable finding equivalent fractions within 1, they may begin to find equivalent fractions greater than 1

Things to look out for

- Children may not draw accurate diagrams, so their equivalent fractions will be incorrect.
- Children may only split existing parts into two smaller sections.

Key questions

- How can you split each section into $\frac{2}{3}$ / $\frac{4}{4}$ equal smaller parts? How many other ways could you split each part?
- If you split each part into _____ equal smaller parts, what fraction does each part now represent?
- Why do you need to split all of the existing parts? Why do they need to be equal in size?
- Are there any fractions on the fraction wall that do not have any equivalent fractions shown? Does this mean they do not have any equivalent fractions?

Possible sentence stems

- If I divide each part into _____ equal parts, then they will each represent $\frac{\square}{\square}$
- I can divide each part into _____ equal parts to show that _____ is equivalent to _____

National Curriculum links

- Recognise and show, using diagrams, families of common equivalent fractions

Equivalent fraction families

Key learning

- Use the bar models to find the equivalent fractions.

$\frac{3}{4} = \frac{\square}{\square}$
 $\frac{3}{4} = \frac{\square}{\square}$
 $\frac{3}{4} = \frac{\square}{\square}$

Which bar model method do you prefer for finding equivalent fractions?

Complete the fraction family.

$$\frac{3}{4} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square}$$

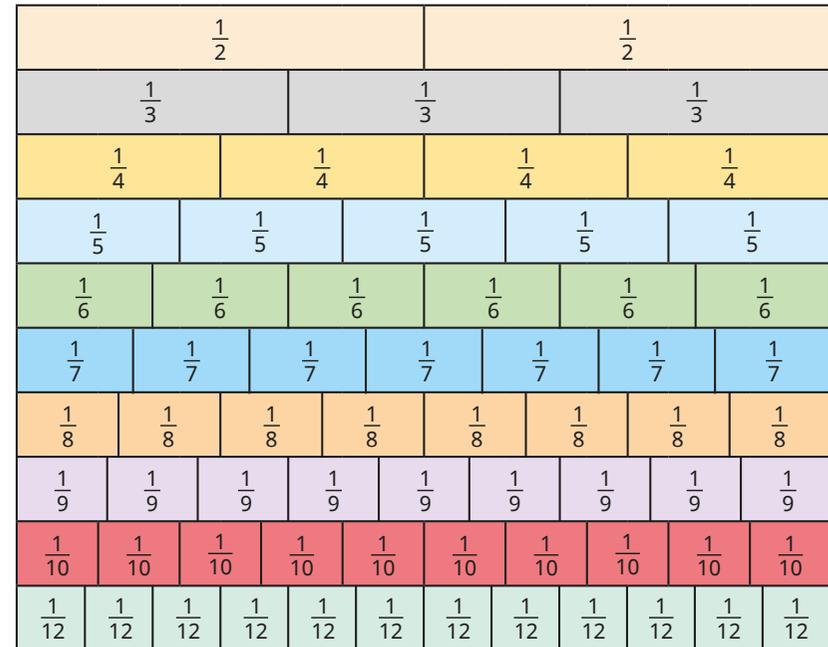
- Draw bar models to help you write a fraction family for each fraction.

$\frac{4}{5}$ $\frac{2}{3}$ $\frac{1}{6}$

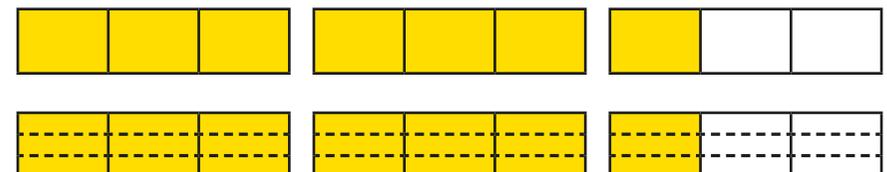
Compare answers with a partner.

Are your fraction families the same?

- Use the fraction wall to create equivalent fraction families.



- What equivalent fractions can you see from the bar models?



Equivalent fraction families

Reasoning and problem solving

Kim is finding equivalent fractions to $\frac{2}{3}$



A $\frac{2}{3} = \frac{3}{5}$

B $\frac{2}{3} = \frac{6}{8}$

C $\frac{2}{3} = \frac{6}{9}$

D $\frac{2}{3} = \frac{6}{9}$

C

C, D

Which of Kim's bar models is correct?

Which of Kim's equivalent fractions are correct?

What mistakes has she made?



Amir is finding equivalent fractions.



If I just keep splitting each section in half, I can find all the equivalent fractions in the family.

$\frac{1}{2}$

$\frac{2}{4}$

$\frac{4}{8}$

No

Do you agree with Amir?

Explain your reasons.

