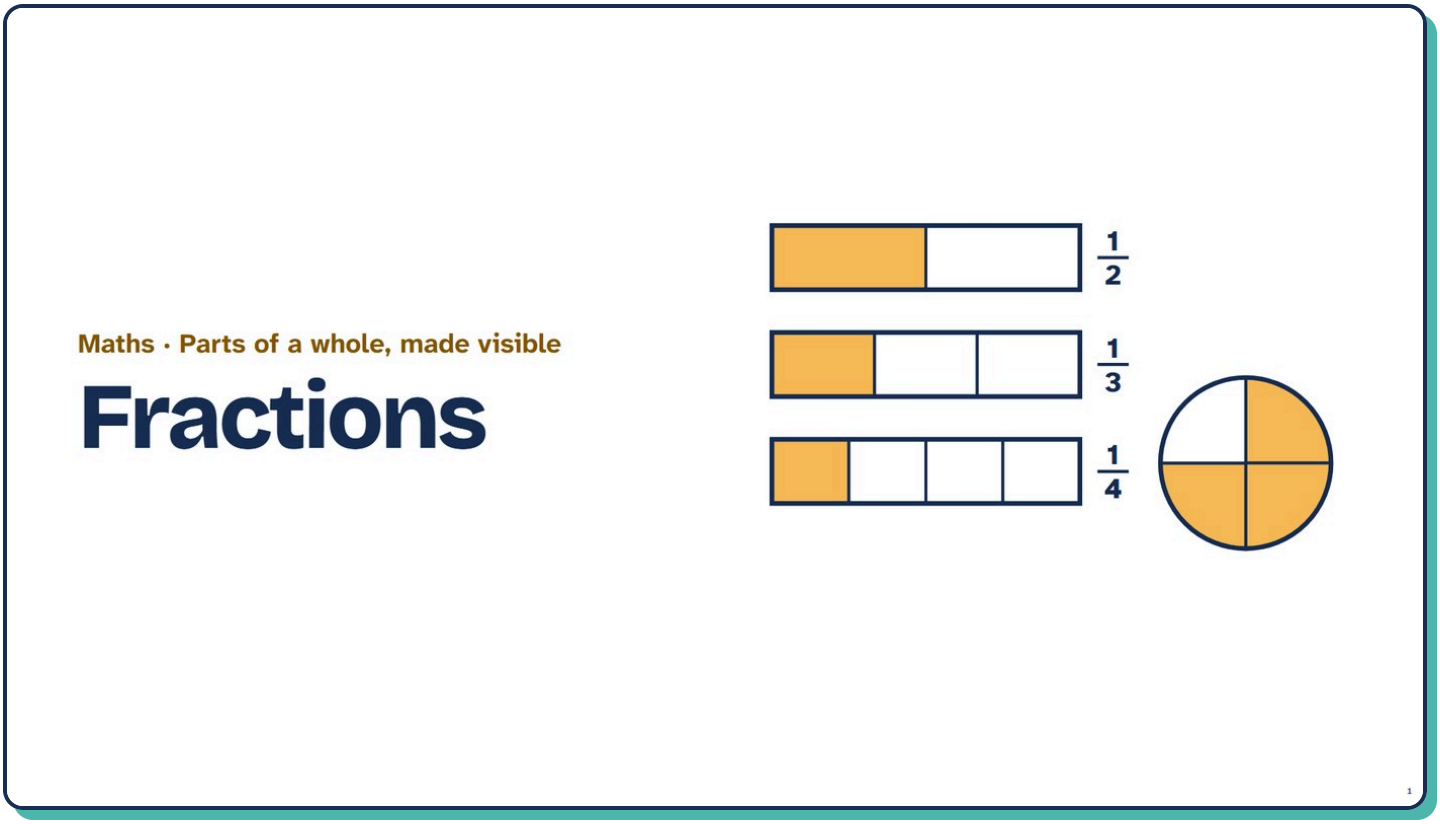


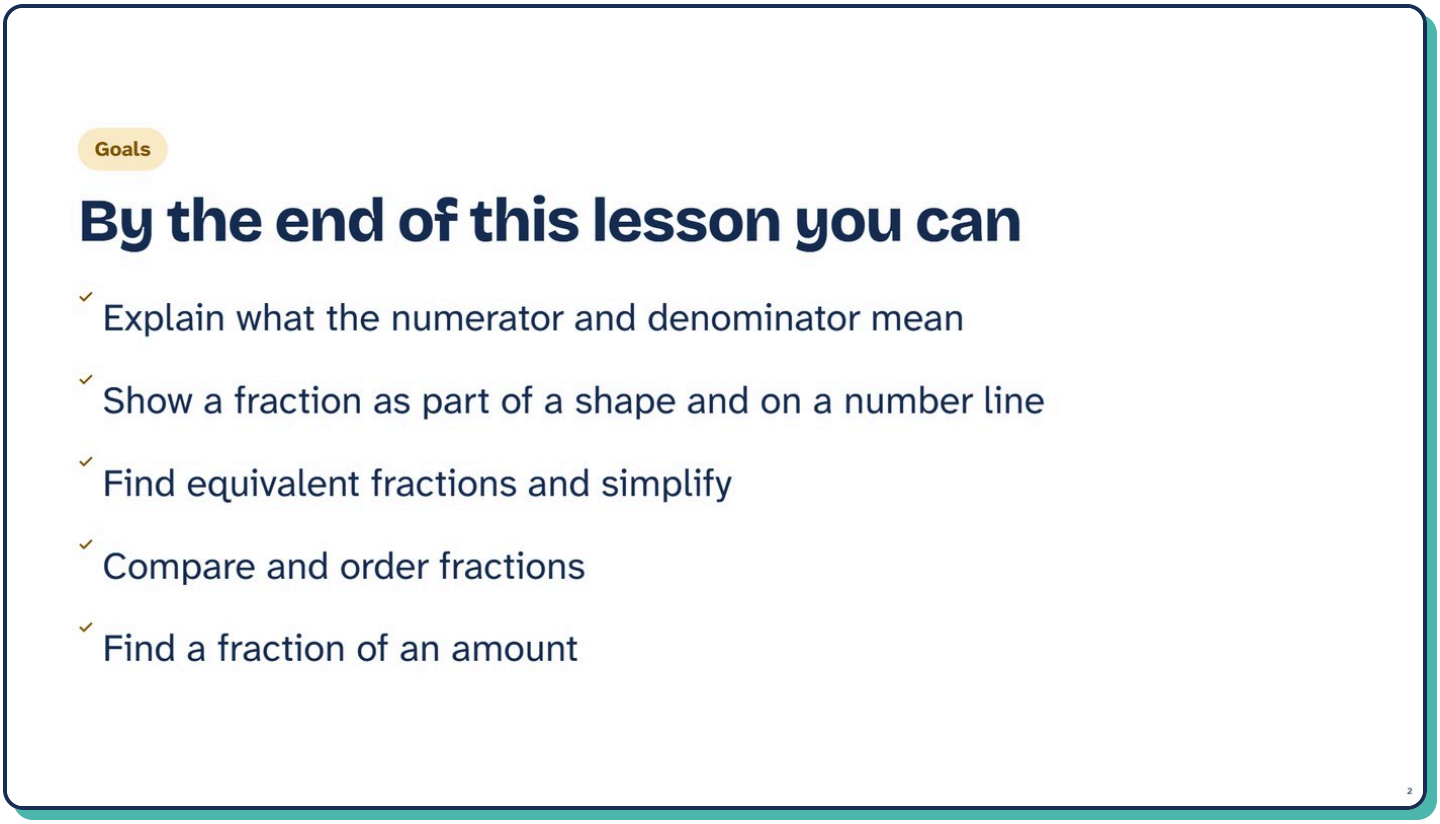
Fractions

Teacher notes

Open by asking students where they meet fractions: recipes, time (a quarter past), sports scores, sale prices. Collect a few examples on the board and come back to them when you reach fractions of amounts.

Ask the class

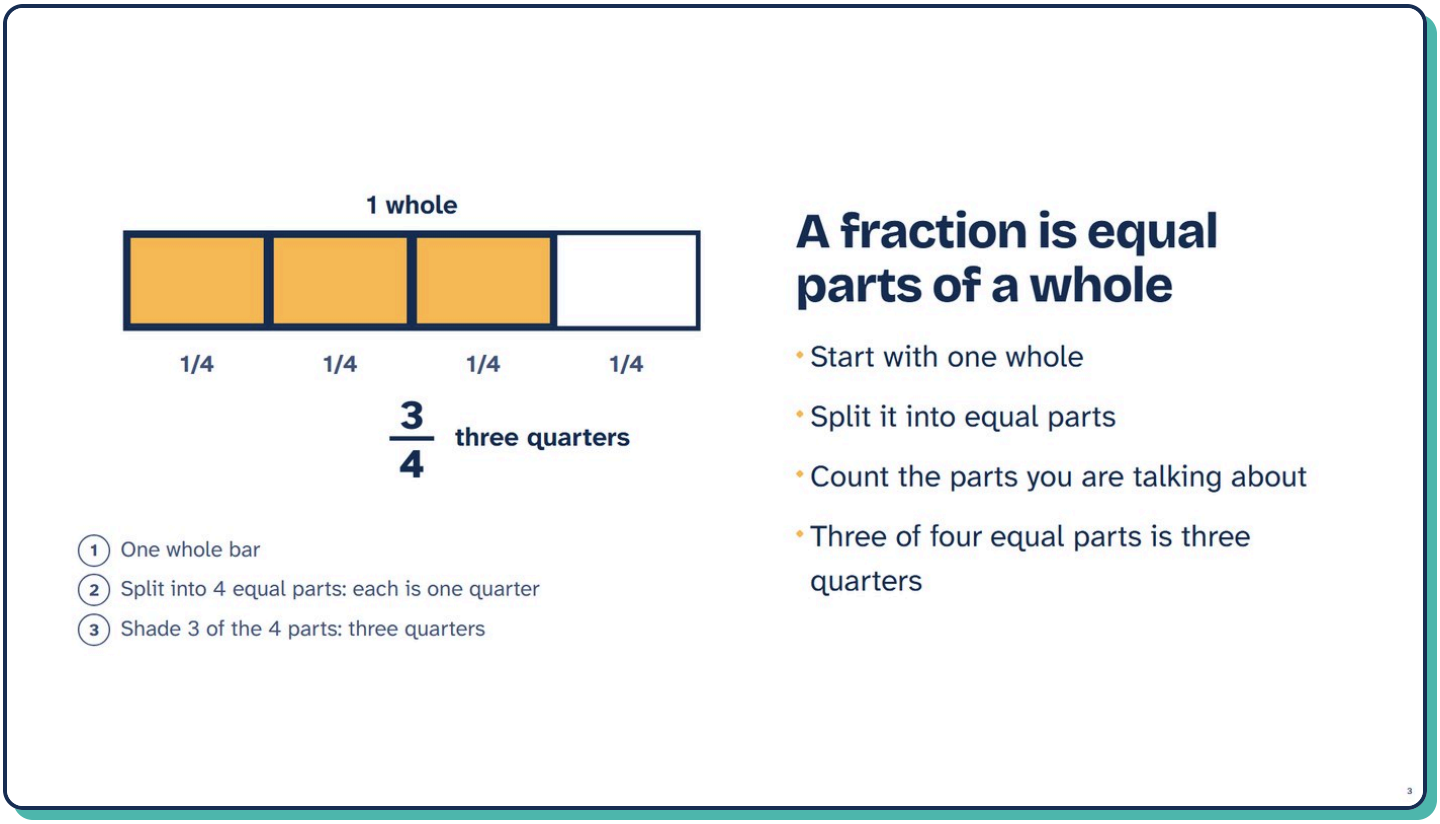
Where have you seen fractions outside a maths lesson today?



By the end of this lesson you can

Teacher notes

Read the goals aloud. Tell students that the five-question quiz at the end checks one goal per question, so they should listen for each goal as it comes up.



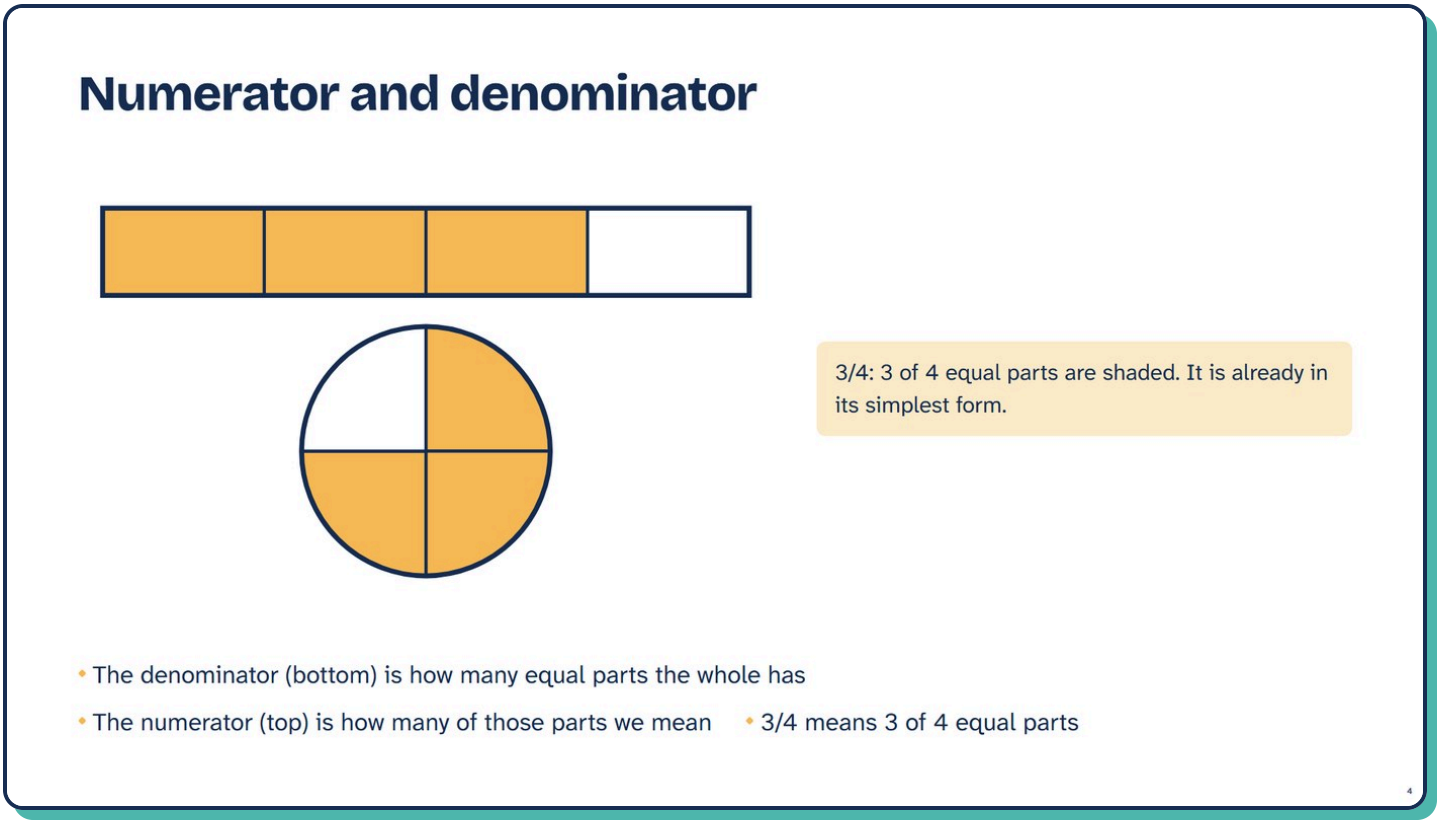
A fraction is equal parts of a whole

Teacher notes

Stress the word equal. Draw a rectangle cut into four unequal strips and ask whether each strip is a quarter. The most common early error is to count pieces without checking they are the same size.

Ask the class

If a bar is cut into four pieces of different sizes, is each piece a quarter? Why not?



Numerator and denominator

Teacher notes

Let students suggest fractions to build. Ask them to predict the picture before you press the buttons. Point out that when numerator and denominator are equal the whole is shaded, which is why 4/4 = 1.

Ask the class

Keep the numerator at 1 and make the denominator bigger. What happens to the size of the shaded part?

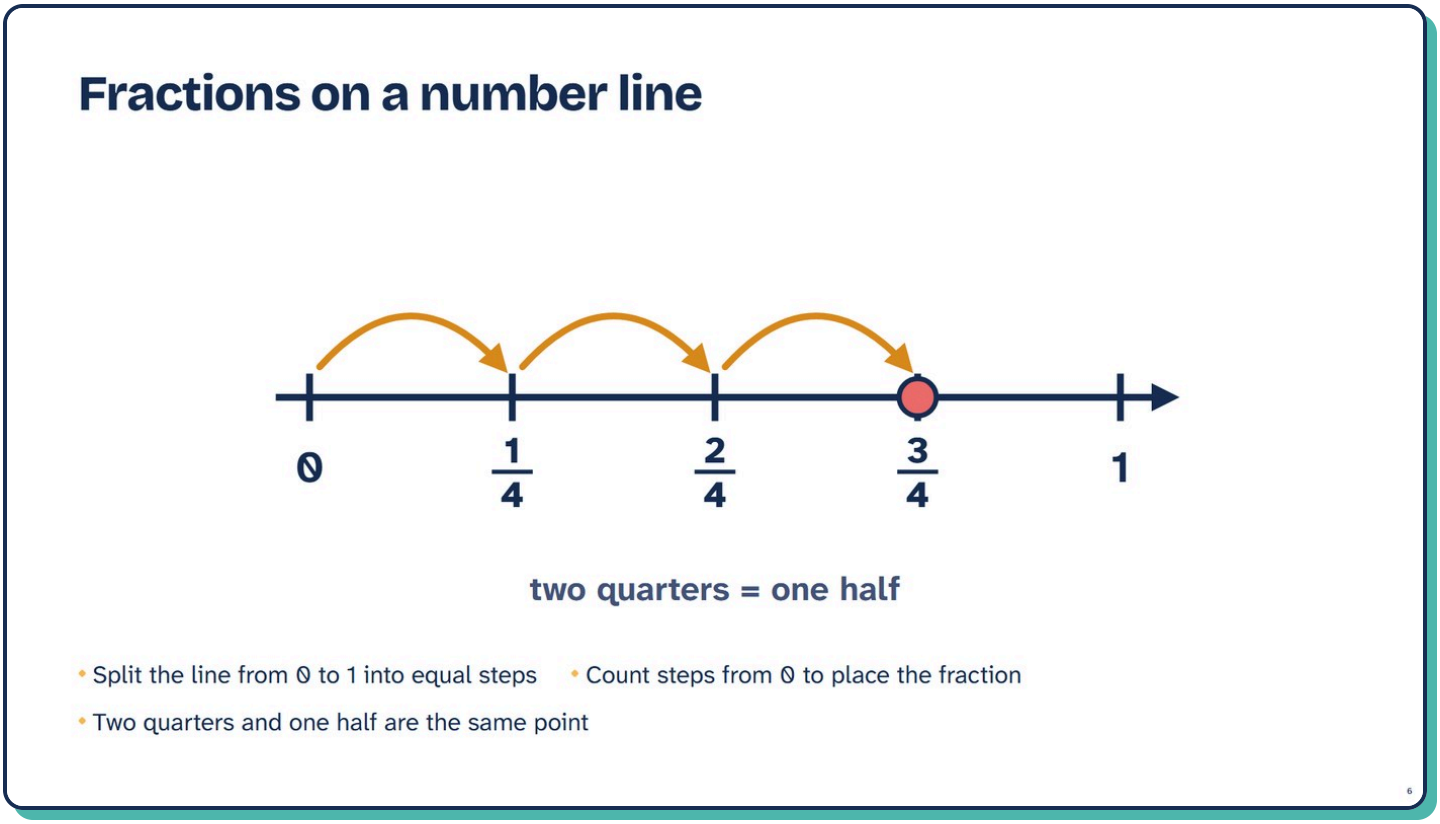
Halves, thirds and quarters

Teacher notes

Fractions with numerator 1 are called unit fractions. Many students think 1/4 is bigger than 1/3 because 4 is bigger than 3; the aligned bars make the opposite obvious. Ask students to put 1/2, 1/5 and 1/10 in order without drawing.

Ask the class

Would you rather have one third or one quarter of the same bar of chocolate? Explain using the picture.



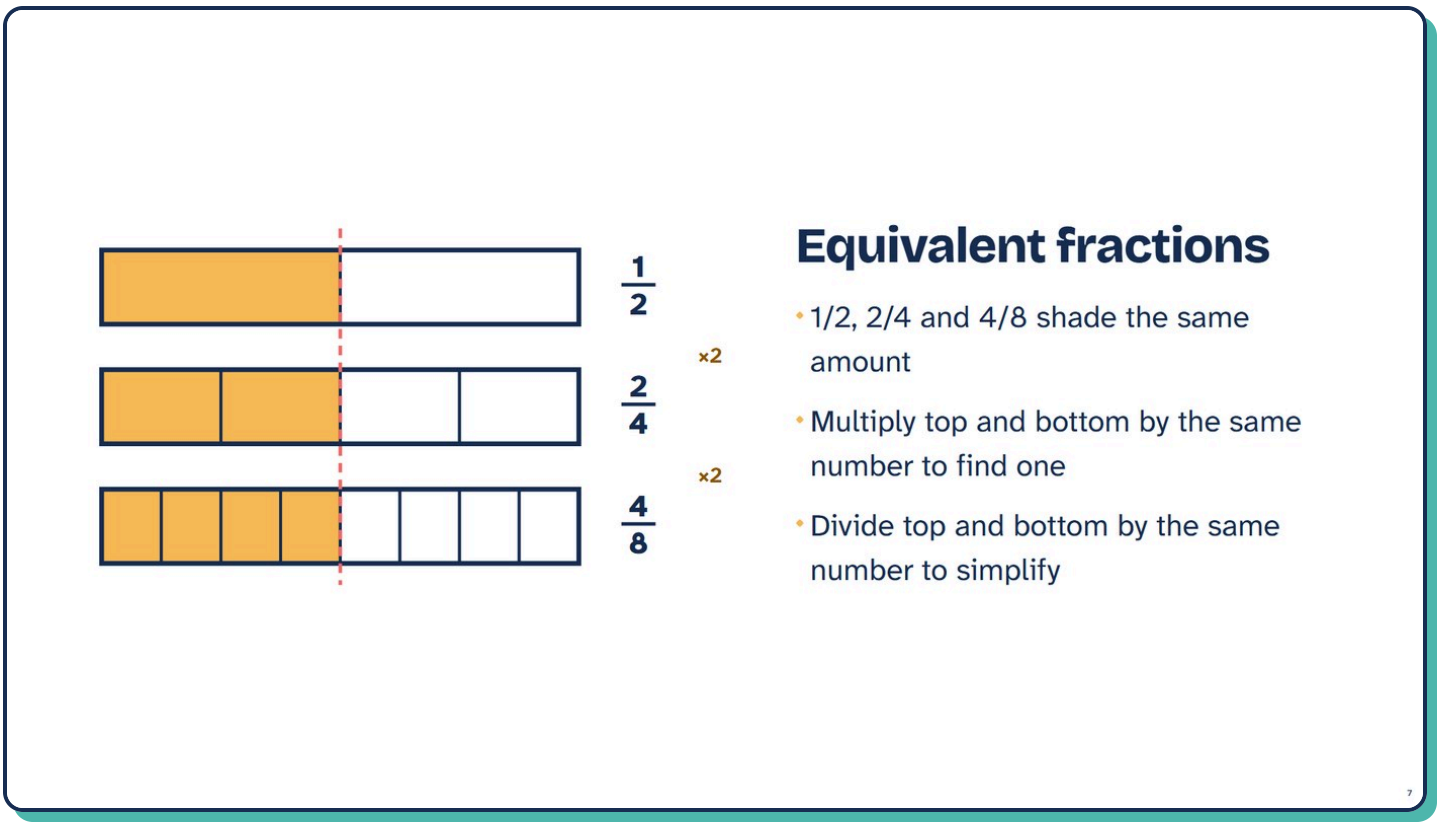
Fractions on a number line

Teacher notes

Number lines move students from seeing a fraction as a piece of a shape to seeing it as a number. If time allows, extend the line past 1 and place 5/4, linking to improper fractions.

Ask the class

Where would five quarters go on this number line? Is it more or less than 1?



Equivalent fractions

Teacher notes

Make the link explicit: cutting every part in half doubles the denominator, and the shaded parts double too. Warn against adding the same number to top and bottom: 1/2 is not equal to 2/3.

Ask the class

Why does multiplying only the numerator by 2 not give an equivalent fraction?

Worked example

Write 12/18 in its simplest form

- Find a number that divides both 12 and 18: the biggest is 6
- 12 ÷ 6 = 2 and 18 ÷ 6 = 3
- So 12/18 = 2/3
- Check: 2 and 3 have no common factor except 1

8

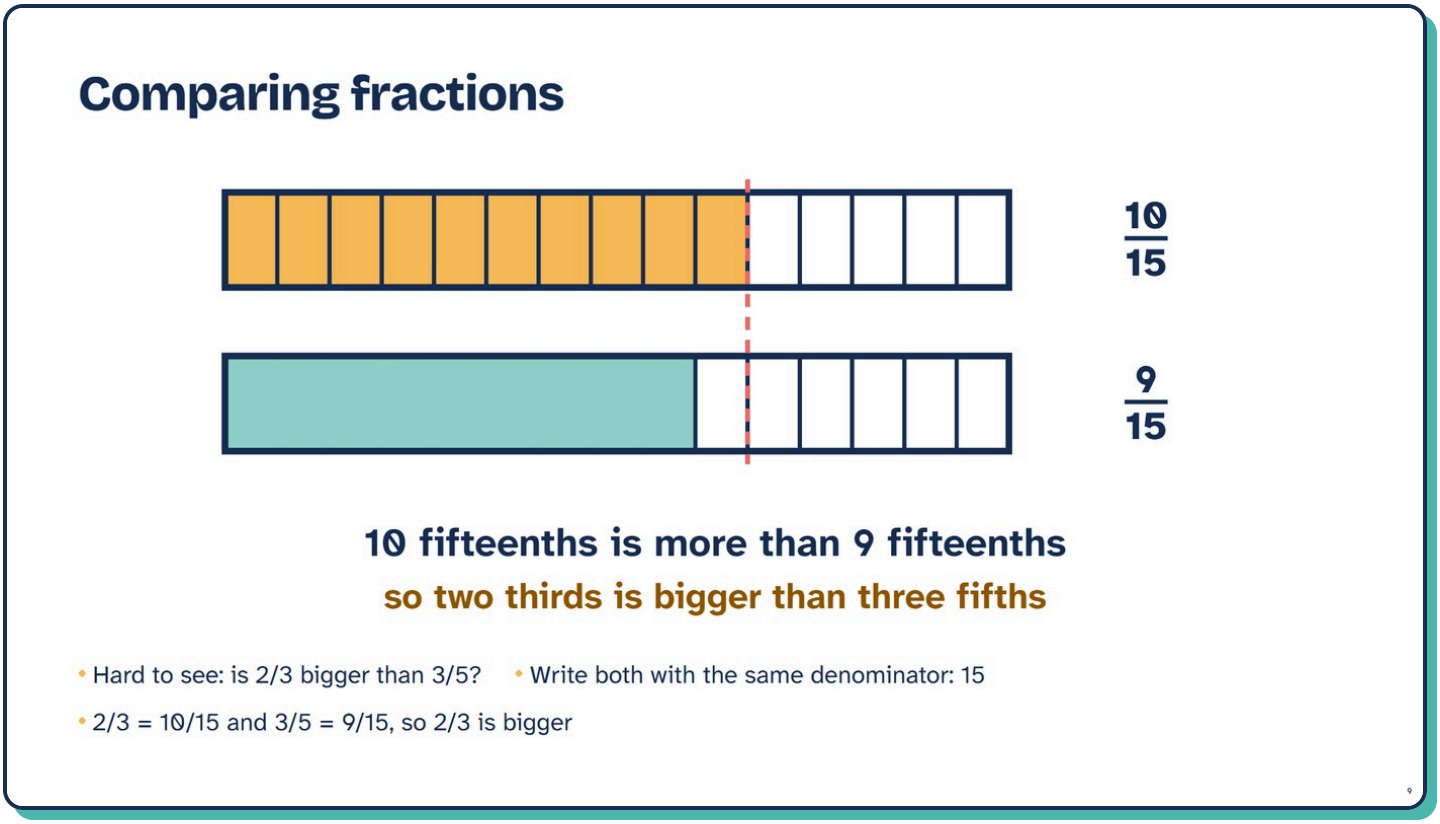
Write 12/18 in its simplest form

Teacher notes

Show that dividing by 2 then 3 also works (12/18 = 6/9 = 2/3). Ask students to simplify 15/20 and 8/12 on mini whiteboards before moving on.

Ask the class

Could you simplify 12/18 in two smaller steps instead? Which numbers would you divide by?



Comparing fractions

Teacher notes

Use the lowest common multiple of the denominators. For 2/3 and 3/5 that is 15. Ask a student to explain why the parts in both bars are now the same size, so counting them is fair.

Ask the class

Why is 15 a good choice of common denominator for thirds and fifths?

Two shortcuts

Same denominator

- Compare the numerators
- 3/8 is less than 5/8
- The parts are the same size

Same numerator

- The bigger denominator is smaller
- 2/5 is more than 2/7
- Sevenths are smaller than fifths

10

Two shortcuts

Teacher notes

These shortcuts save time but only work in these two cases. For anything else, find a common denominator.

Ask the class

Which shortcut works for 4/9 and 4/11? Which fraction is bigger?

Worked example

Order 3/4, 2/3 and 5/6

- The lowest common denominator of 4, 3 and 6 is 12
- 3/4 = 9/12, 2/3 = 8/12, 5/6 = 10/12
- Order the numerators: 8, 9, 10
- Smallest first: 2/3, 3/4, 5/6

11

Order 3/4, 2/3 and 5/6

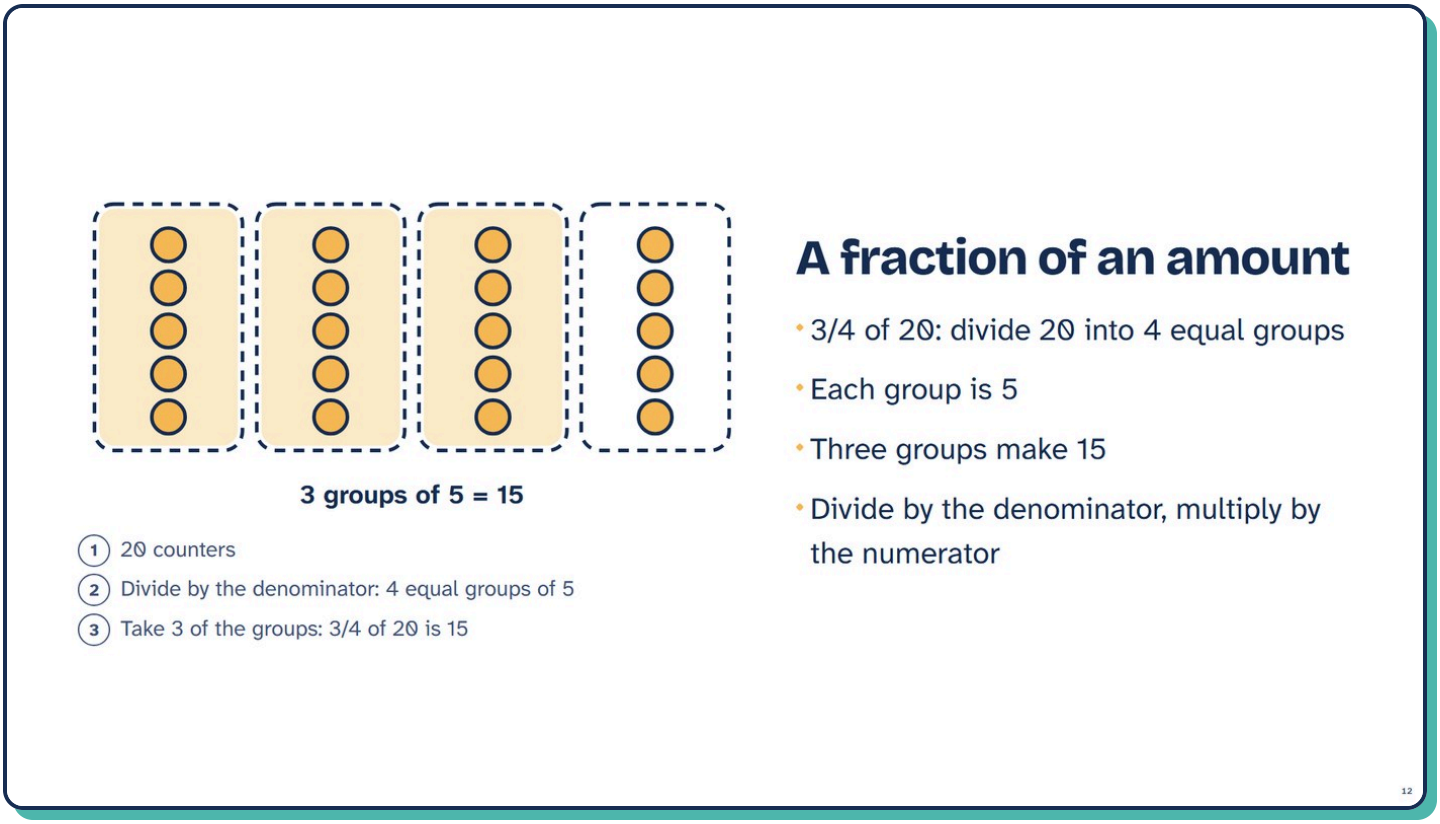
Teacher notes

Students often stop at 8/12, 9/12, 10/12 and forget to give the answer in the original form. Model writing the final line in full.

Ask the class

Where would 7/12 go in this list?

learnbyslides.com · free under CC BY-NC 4.0



A fraction of an amount

Teacher notes

Connect back to the opening examples from everyday life. Then practise: 2/5 of 30, 5/8 of 24, 3/10 of 70. Students who are secure can try finding the whole when they know a fraction of it.

Ask the class

A jacket costs 40 dollars and is reduced by a quarter. How much is taken off, and what is the new price?

Common mix-ups

Often said

A bigger denominator means a bigger fraction.

What is true

For the same whole, more parts means smaller parts: 1/8 is less than 1/3.

Often said

Any four pieces of a shape are quarters.

What is true

Only if the four pieces are equal. Fractions always mean equal parts.

Often said

2/4 is more than 1/2 because the numbers are bigger.

What is true

They are equivalent: both shade exactly the same amount.

Often said

1/2 + 1/3 = 2/5

What is true

Use a common denominator first: 3/6 + 2/6 = 5/6.

13

Common mix-ups

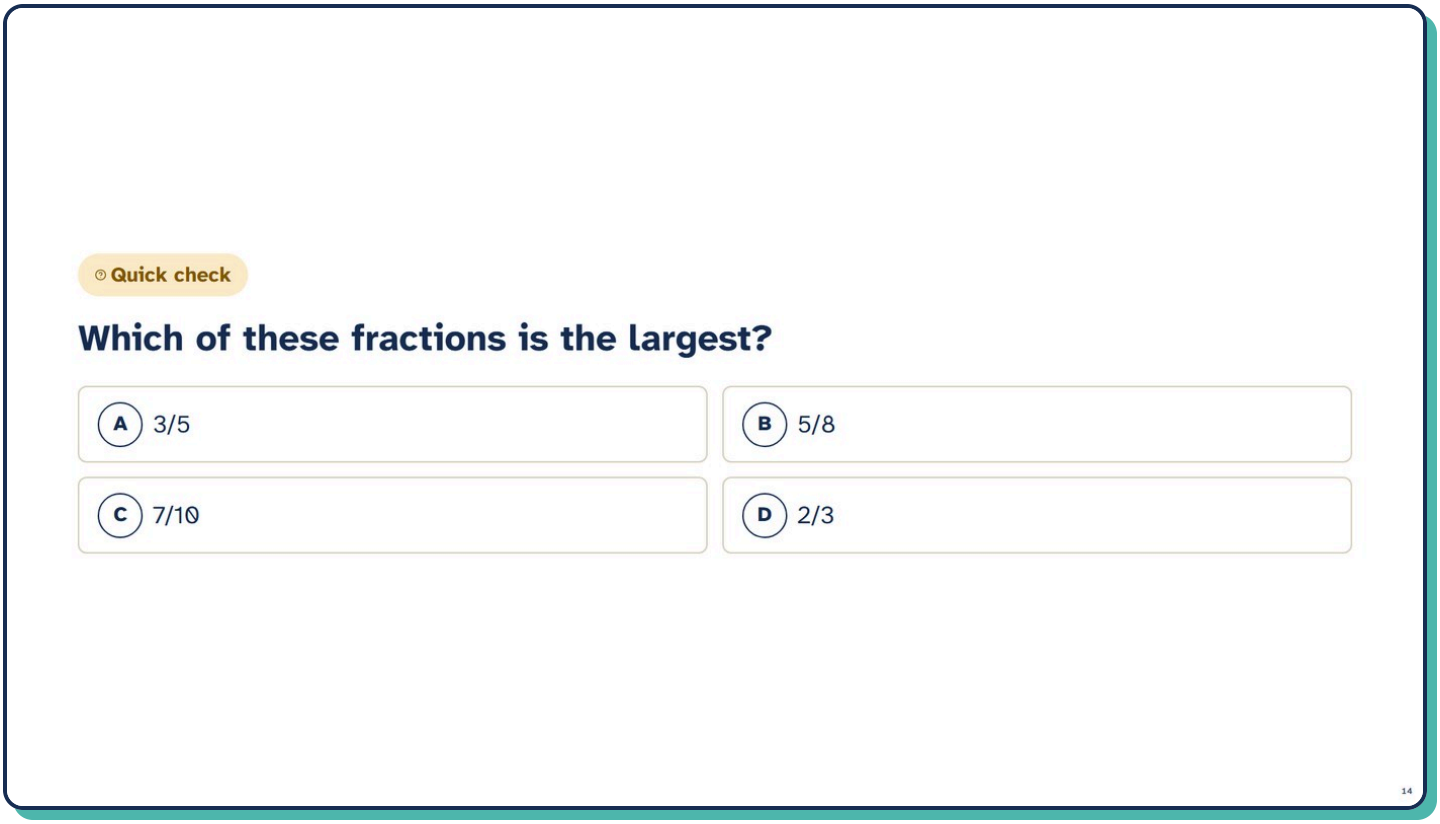
Teacher notes

The last card previews adding fractions, which is the next lesson. Use it only as a warning: to add fractions you need a common denominator, so 1/2 + 1/3 = 3/6 + 2/6 = 5/6.

Ask the class

Vote on each card before turning it. Which mistake have you made before?

learnbyslides.com · free under CC BY-NC 4.0

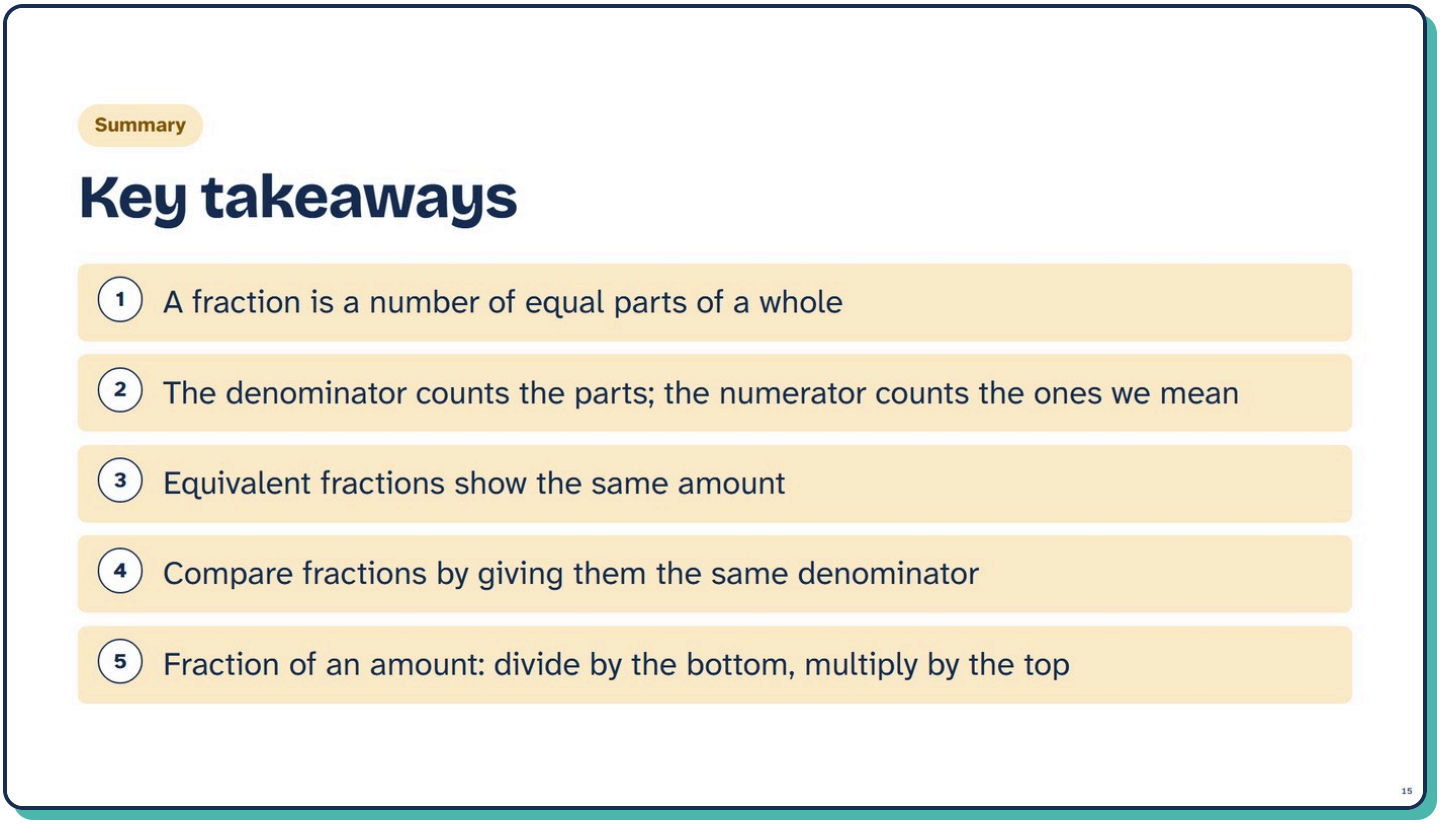


Quick check

Teacher notes

Answer: 7/10. Any common denominator works; 120 is the lowest common multiple of 5, 8, 10 and 3. A quicker route is to compare each with a benchmark: all are just over 1/2, so a common denominator is the safe method.

learnbyslides.com · free under CC BY-NC 4.0



Key takeaways

Teacher notes

Return to the everyday examples from the start and ask students to explain one of them using today's vocabulary. Then move to the five-question quiz. Homework idea: find three fractions in a recipe, a timetable or a shop and draw each one.

learnbyslides.com · free under CC BY-NC 4.0