



**THIRD SPACE
LEARNING**

Math Intervention Pack

Understanding equivalent
fractions

Grade 3

How To Use This Resource

1. Title Slide

Use this slide to activate prior knowledge needed for lesson. Students should be encouraged to initially attempt the question presented independently.

2. Let's Learn

Use this slide to introduce the concept. Tutors should work with the student to explore the concept together, usually using diagrams to support understanding.

3. Follow Me + Your Turn

The tutor should work through the follow me slide, modeling the process and explaining their thinking out loud.

Students should use the your turn slide as an opportunity to work through a question similar to the follow me questions. They should apply the method modeled by the tutor in the follow me slide. Students should be encouraged to explain their thinking out loud.

4. You Do

Students should work through a range of questions that build in complexity.

Tutors can offer support but students should initially be encouraged to attempt these questions independently.

5. Go Further

Use this slide to allow students to apply their understanding to a more challenging question in an unfamiliar context.

6. Support for Slides

The support slide is used to support students during the lesson. In the tutor notes, there will be guidance as to when to use the support slide.

7. Check Your Understanding

Tutors should use this slide to assess the student's knowledge and whether or not they have mastered the concept within the lesson.

Standard

3.NF.3 - Explain equivalence of fractions and compare fractions by reasoning about their size.

3.NF.3a - Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

Key Mathematical Ideas

1. Understand two fractions as equivalent when they represent the same amount of the whole
2. Understand two fractions as equivalent when they represent the same point on a number line

Overview

Terminology

- **Equivalent fractions:** Fractions that name the same amount or number but look different (example: $\frac{2}{3}$ and $\frac{6}{9}$)
- **Denominator:** The number of equal-sized pieces in a whole, the number of members of a set with an identified attribute. The bottom number in a fraction.
- **Fraction:** A part of a whole number
- **Number line:** A visual representation of numbers on a straight line
- **Numerator:** The number in a fraction that indicates the number of parts of the whole that are being considered. The top number in a fraction.

Sentence Stems

- $\frac{a}{b}$ is equivalent to $\frac{c}{d}$
- $\frac{a}{b} = \frac{c}{d}$

Overview

Common Misconceptions

Common Misconceptions	Tutoring Strategies	Checks for Understanding
Students may think that a fraction can only be equivalent to another fraction if the numerator and denominators are multiples of the fraction. (Such as $\frac{2}{4}$ and $\frac{4}{8}$ - you can multiply the top and bottom of $\frac{2}{4}$ by 2 to get $\frac{4}{8}$.) However, this is not true. For example $\frac{1}{2} = \frac{3}{6}$, $\frac{3}{6} = \frac{4}{8}$, etc.	Point out the relationship between each fraction's numerator and denominator. For example, $\frac{3}{6} = \frac{4}{8}$. Both of these fractions are equivalent to $\frac{1}{2}$ because 3 is half of 6 and 4 is half of 8.	How do you know these two fractions are equivalent?
Students may think that the same number of pieces equals an equivalent fraction, for example $\frac{1}{2}$ and $\frac{1}{3}$ each have a numerator of 1.	Point out that an equivalent fraction will have a different numerator AND denominator.	How do you know these two fractions are equivalent?

Title Slide

If stuck

- Point out that the shaded part of each square takes up the same amount of the whole square ($\frac{1}{2}$) but the first square is partitioned into 2 equal parts and the second is partitioned into 4 equal parts.

Let's Learn

If stuck

- If students need help labeling the fractions, remind students that the denominator is the bottom number of a fraction which tells the number of equal-sized pieces in the whole and the numerator is the top number of a fraction which tells the number of equal-sized parts of the whole that are shaded in

Questions

- How can each fraction be equivalent if they have different numbers and represent a different number of parts?

Watch out for

- Students incorrectly labeling the numerator and denominator of each fraction

Follow Me

Modeling prompts

- I can see that the first number line represents $\frac{1}{3}$. This is because the number line (which represents 1 whole) has been split into 3 equal parts. The orange bar covers 1 of those parts (1 out of 3 = $\frac{1}{3}$)
- The second number line has been cut into 6 equal parts. I need to find the fraction that is located at the same point on the number line as $\frac{1}{3}$ is located on the previous number line.
- Since the number lines are lined up exactly, I can follow the $\frac{1}{3}$ down to the 2nd number line and see what fraction I land on. The fraction is $\frac{2}{6}$. So I will draw a bar that covers 2 out of the 6 parts.
- So $\frac{1}{3} = \frac{2}{6}$.

Your Turn

If stuck

- Ask students to draw a line straight down from the first number line to see what fraction is directly below it on the 2nd number line.

Questions

- How can you use a number line to find equivalent fractions?
- Why is it important that the wholes are the same size?
- Why is it important that the parts a number line is divided into are equal?
- What would happen if someone drew a number line but didn't make sure the parts were equal?

Watch out for

- Make sure students are lining up the correct fractions

You Do

If stuck

- Help students determine how much of each shape or number line will take up the same amount as the examples

Questions

- How did you know how much of the circle and rectangle to shade in order to create an equivalent fraction?
- How did you find the equivalent fractions on the number lines?

Watch out for

- Make sure that students don't think that they need to shade the same number of pieces - but the same portion of the shape

Go Further

If stuck

- Ask students to look and see which two pizzas have the same amount shaded

Questions

- How can you tell which two pizzas have the same amount eaten?

Watch out for

- Students may think that the first two pizzas are equivalent because they each have 1 piece eaten.

Support for Slide(s)

If stuck

- Use this slide to help students understand the number lines on the You do slide

Questions

- How does drawing a line and circling the fractions help us find the equivalent fraction correctly?

Assessment Question

Correct answer:

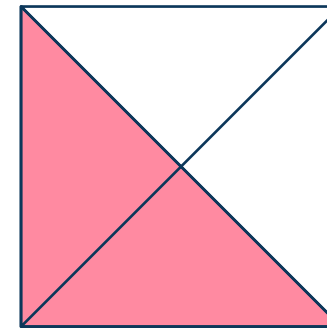
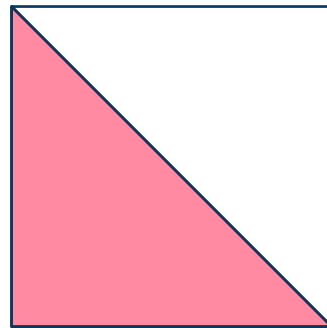
$$\frac{2}{12}$$

Today you will learn about

Understanding equivalent fractions

Warm up question

What is the same and what is different?

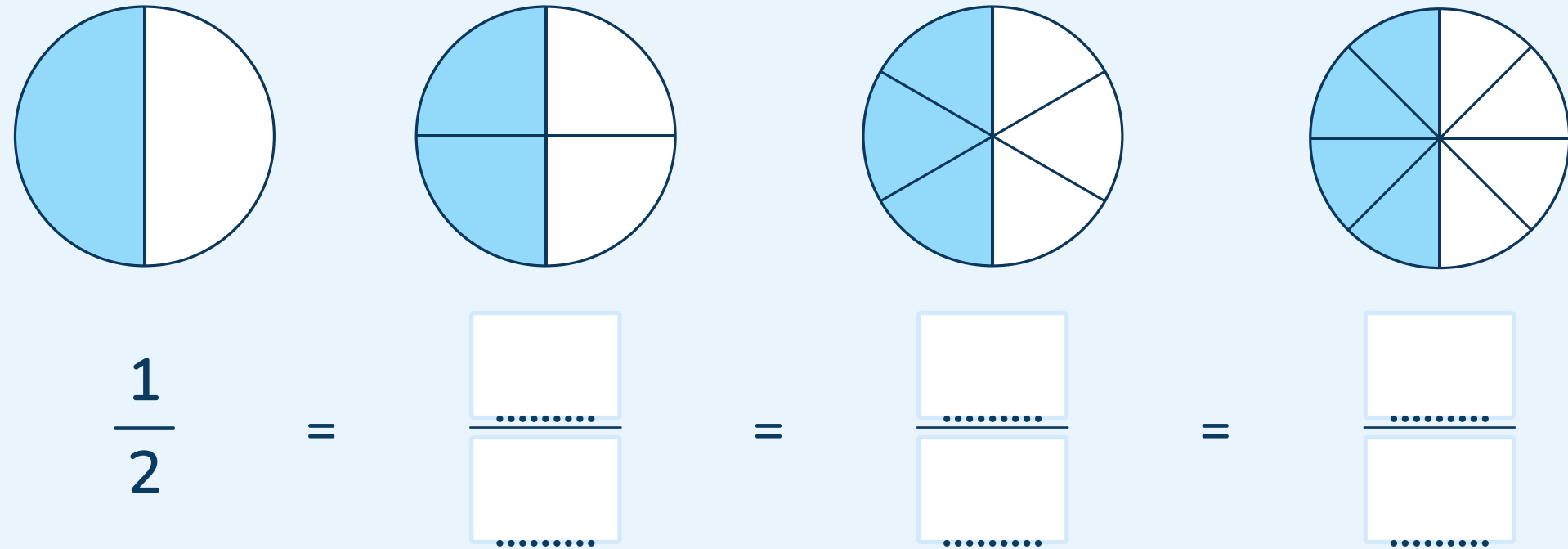


Let's learn

Equivalent fractions are fractions that have different numerators and denominators but have the **same value**.

Each circle has been split into a different number of parts, but the shaded portion of the whole circle remains the same.

Equivalent fractions
are **equal** in value.



- a Each remaining fraction has a different numerator and denominator than $\frac{1}{2}$, but still represents $\frac{1}{2}$ of the whole circle. Fill in the remaining fractions.

Follow me

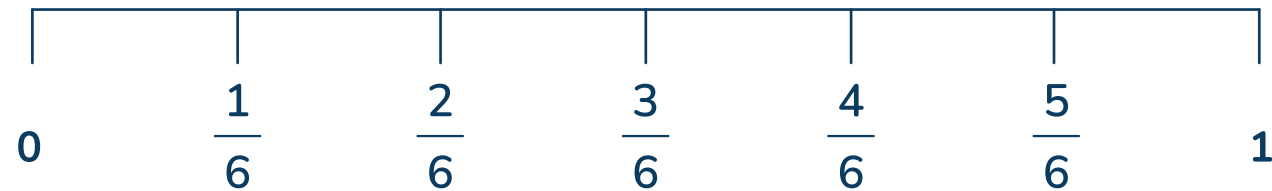
We can also use number lines to represent equivalent fractions.

On a number line, equivalent fractions are different fractions that fall on the same point or location.

a The first number line represents



b Draw a bar to the fraction that is equivalent to

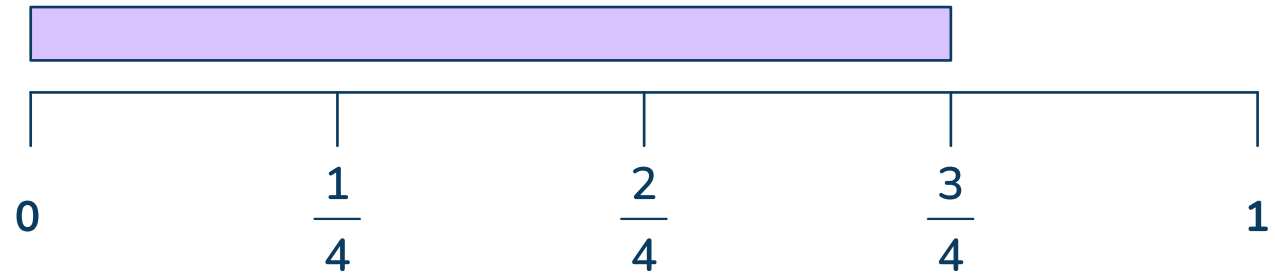


c $\frac{1}{3} = \frac{\boxed{}}{\boxed{}}$

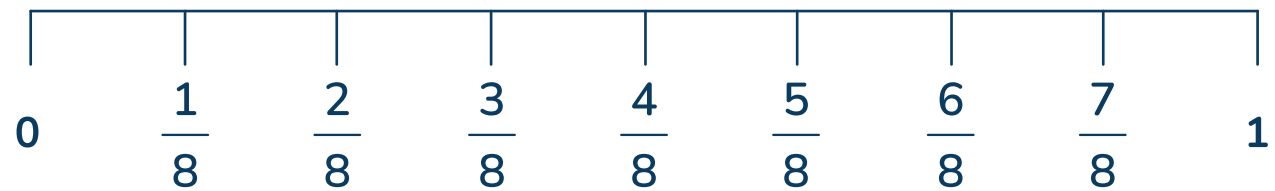
Your turn

Draw a bar on each number line to represent the equivalent fraction.

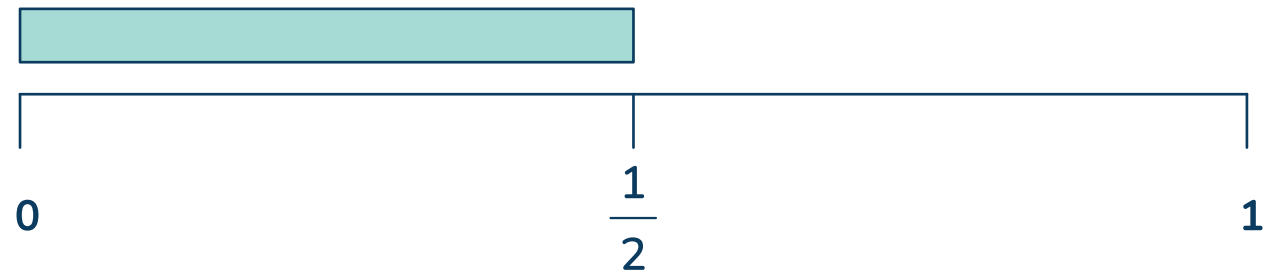
a



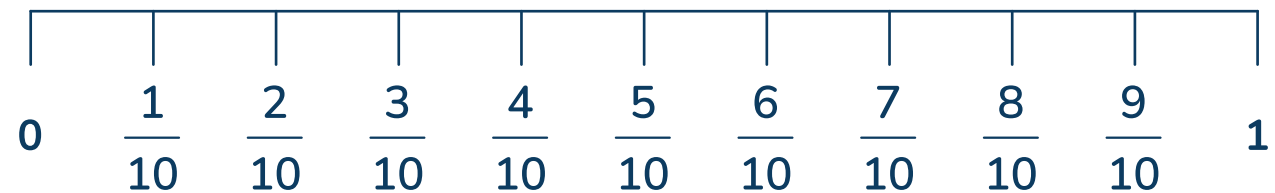
$\frac{3}{4} = \frac{\boxed{}}{\boxed{}}$



b



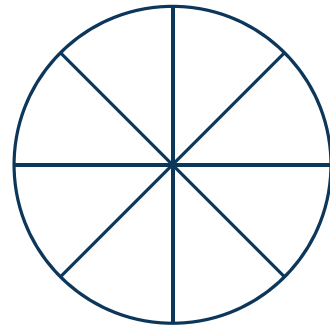
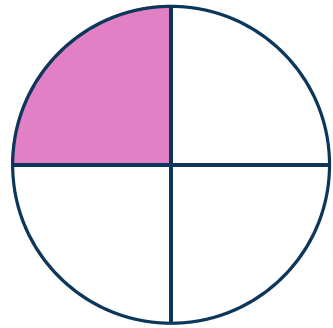
$\frac{1}{2} = \frac{\boxed{}}{\boxed{}}$



You do

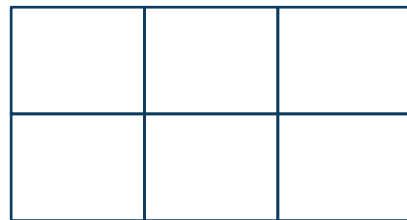
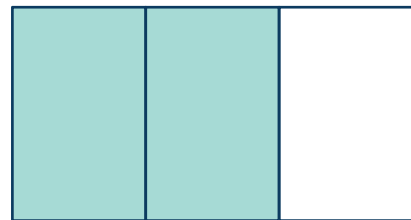
Shade the second model to show equivalent fractions.
Then complete the equation.

a



$$\frac{1}{4} = \frac{\boxed{}}{\boxed{}}$$

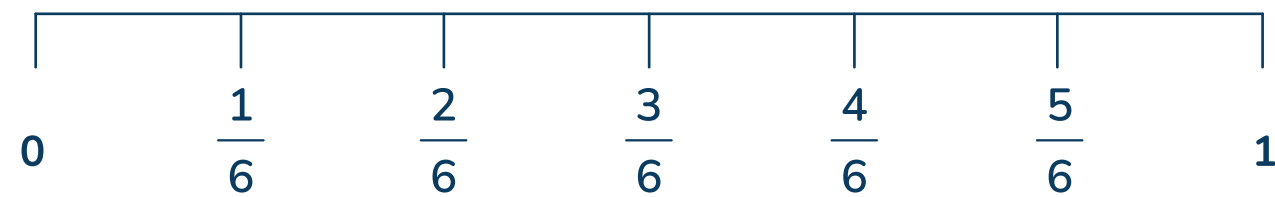
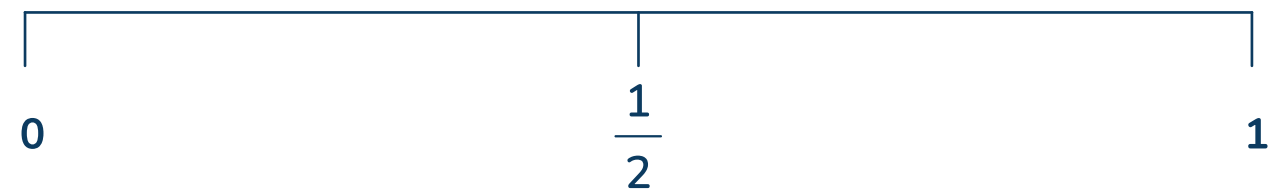
b



$$\frac{2}{3} = \frac{\boxed{}}{\boxed{}}$$

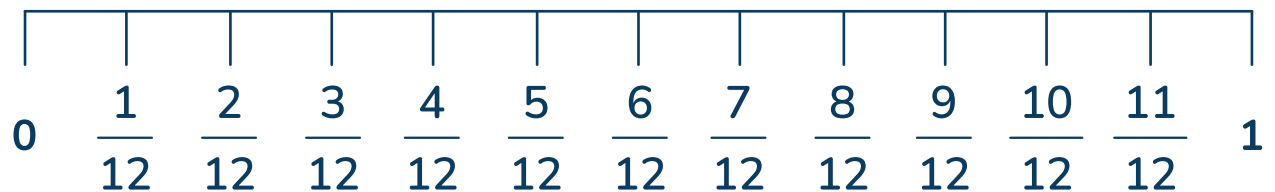
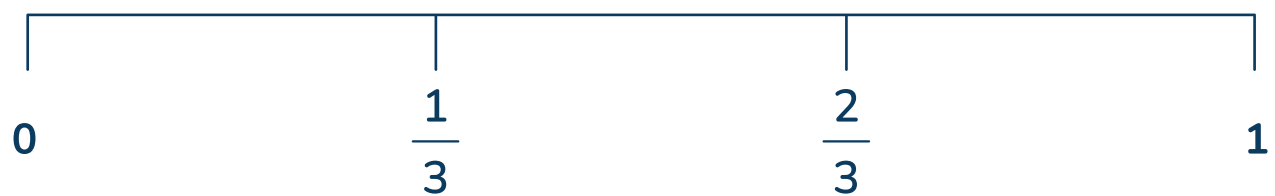
Draw a bar on the second number line to show equivalent fractions.
Then complete the equation.

a



$$\frac{1}{2} = \frac{\boxed{}}{\boxed{}}$$

b

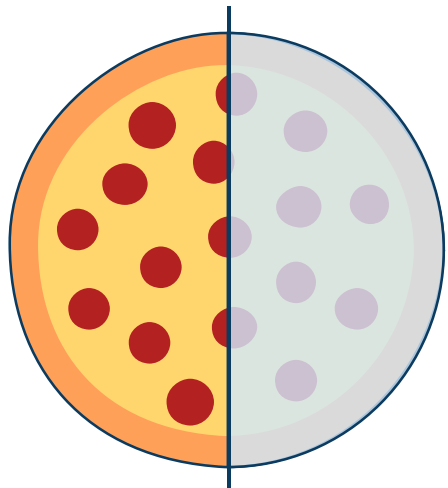


$$\frac{1}{3} = \frac{\boxed{}}{\boxed{}}$$

Go further

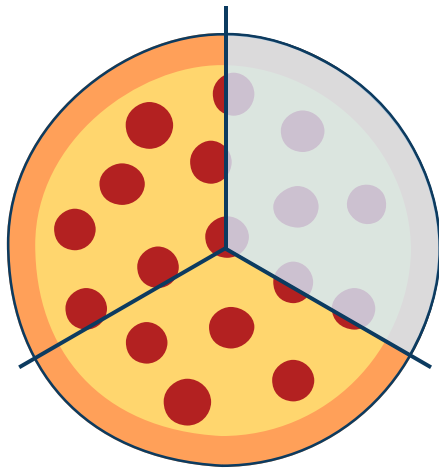
Four friends each ordered a small pizza.

a Label each pizza with the fraction of the pizza that was eaten.



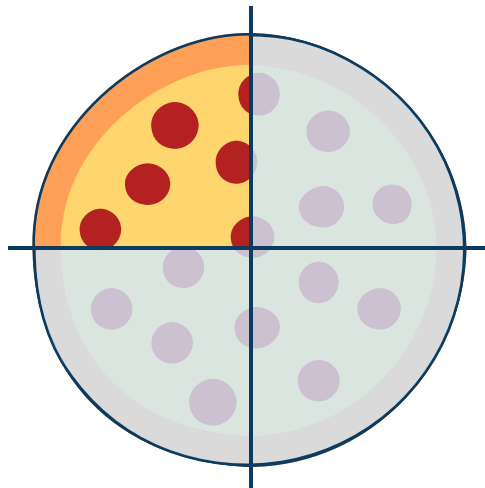
Anna cut her pizza into 2 equal pieces. She ate 1 piece.

.....



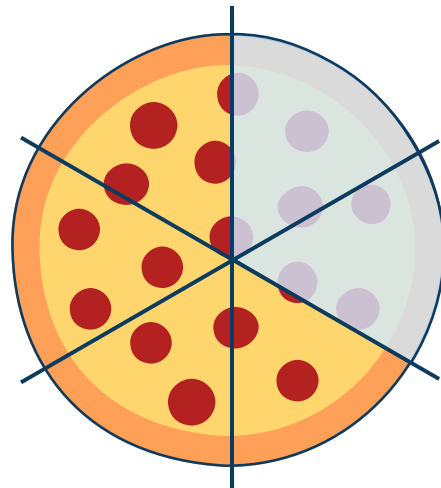
Brett cut his pizza into 3 equal pieces. He ate 1 piece.

.....



Carlos cut his pizza into 4 equal pieces. He ate 3 pieces.

.....



Delia cut her pizza into 6 equal pieces. She ate 2 pieces.

.....

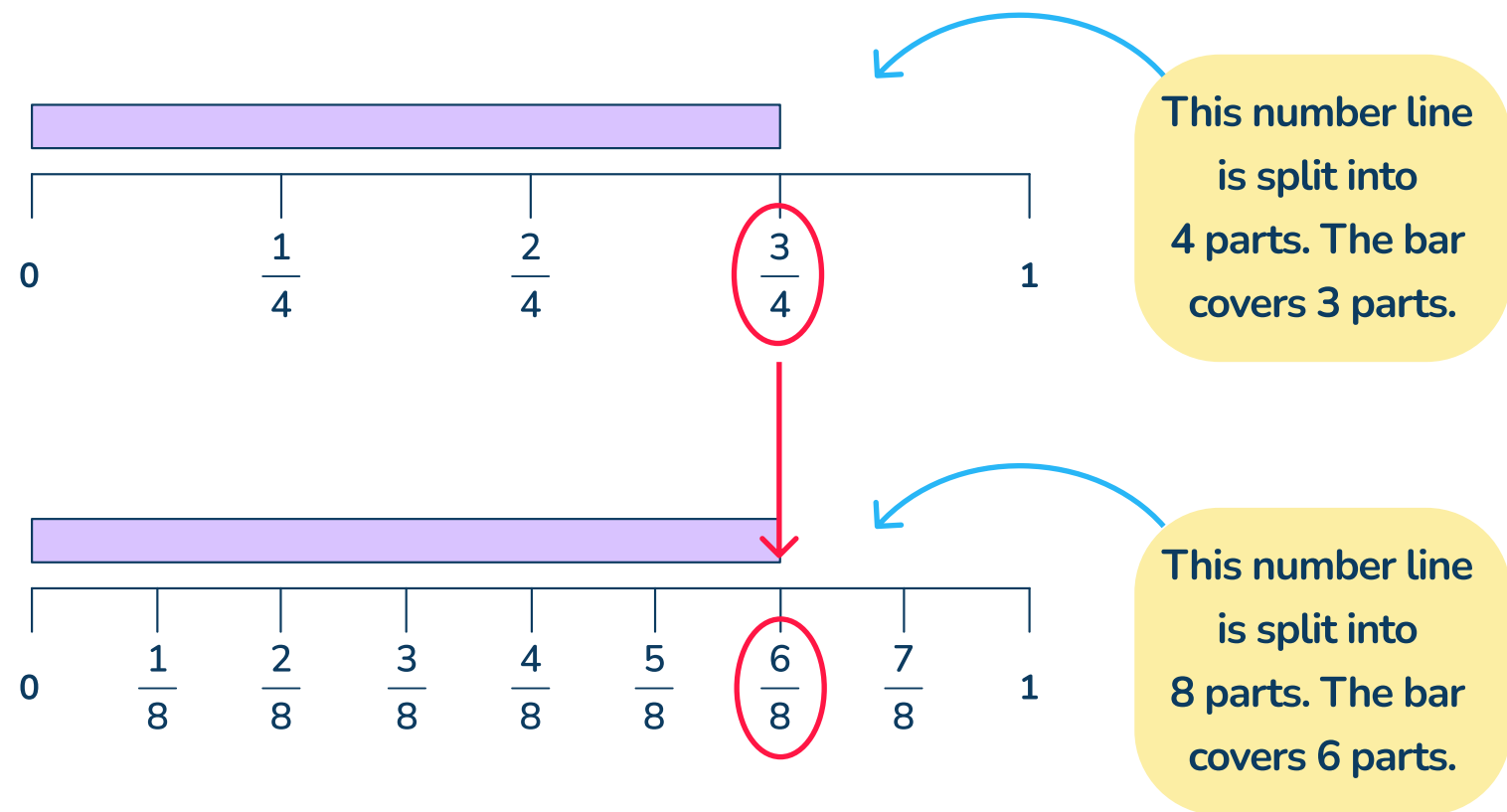
b Which two friends ate the same amount of pizza?

..... and

Let's explore this more

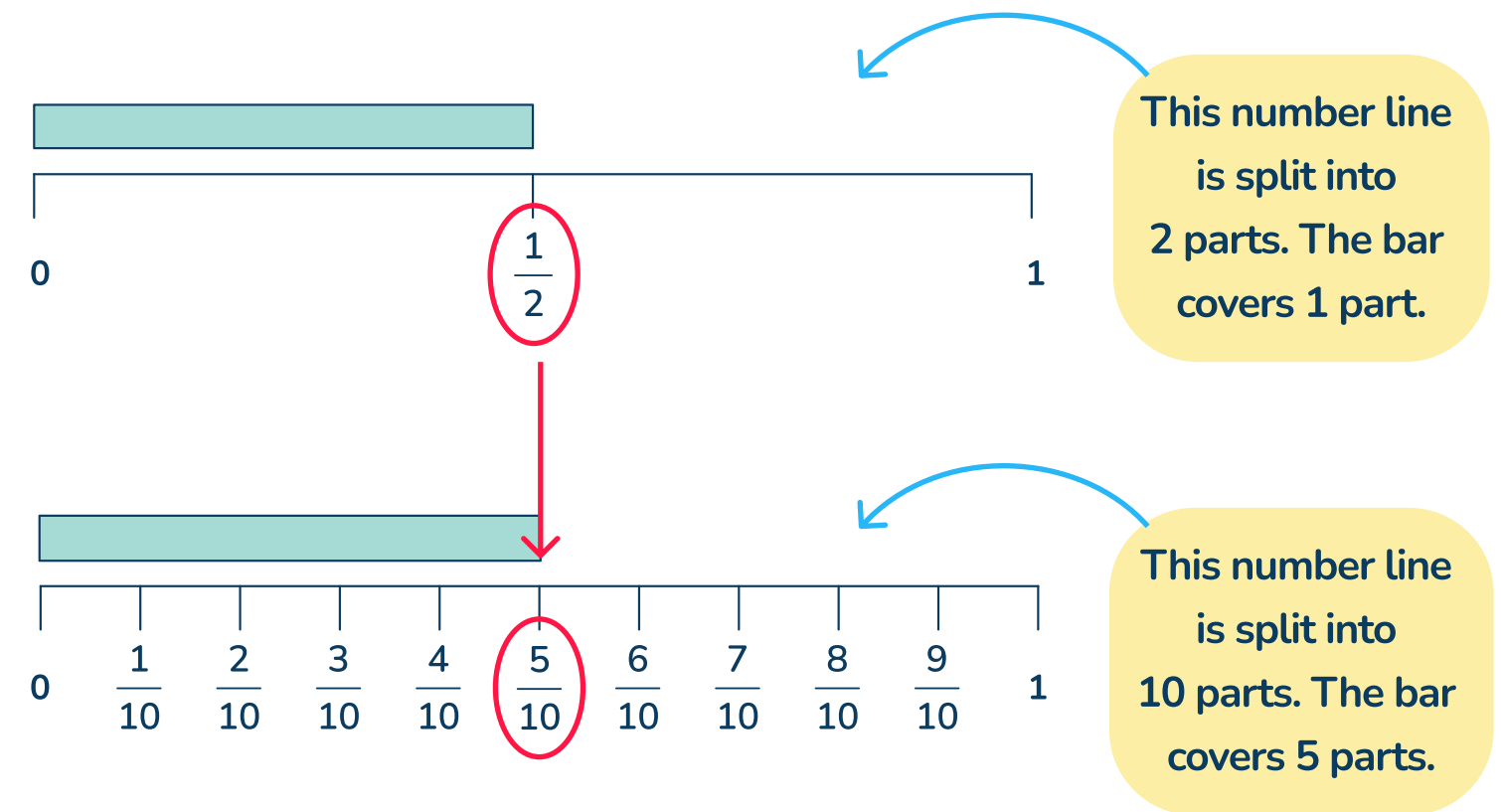
On a **number line**, equivalent fractions are different fractions that fall on the **same point** or **location**.

a



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

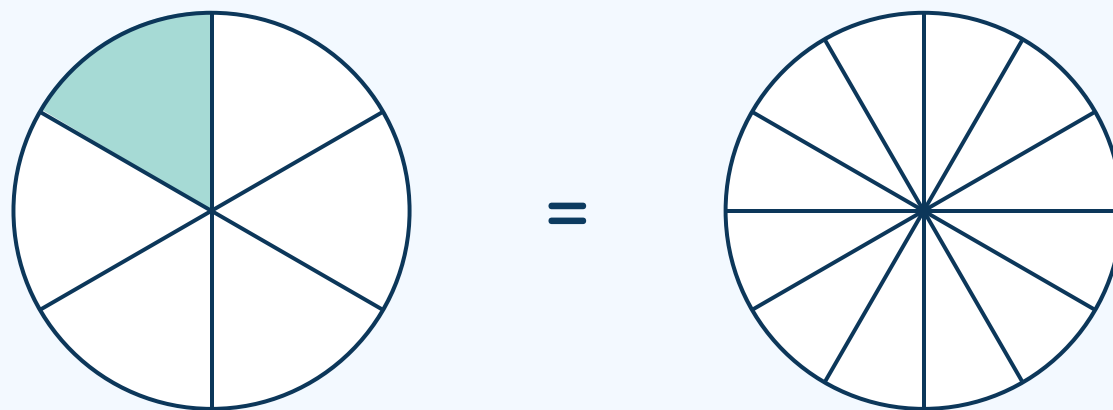
b



$$\frac{1}{2} = \frac{\boxed{}}{\boxed{}}$$

Check your understanding

Shade the circle to show an equivalent fraction.
Then complete the equation.



$$\frac{1}{6} = \frac{\boxed{}}{\boxed{}}$$

Why do I need to try this question
on my own first?

- To show your tutor what you understand
- To give you more practice
- To show your teacher how you are doing



Do you have a group of students who need a boost in math?

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- ✓ Differentiated instruction for each student
- ✓ Aligned to your state's standards
- ✓ Scaffolded learning to close gaps

“We just had our first session and it went great! The kids really liked it and felt like they were learning! One even said he finally felt like math was making sense.”



Michelle Craig, Instructional Coach,
Sherwood Forest Elementary, Washington

Speak to us

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