

Mathematics

# Calculating speed, distance and time

## Lesson 6 of 8

Downloadable resource

Miss Kidd-Rossiter



# Try this

Binh and Yasmin are discussing how quickly they can walk to school.

If I walk 50% faster, I'll get there in 50% of the time.

Binh

I'm not sure that's right...

Yasmin

Who do you agree with?

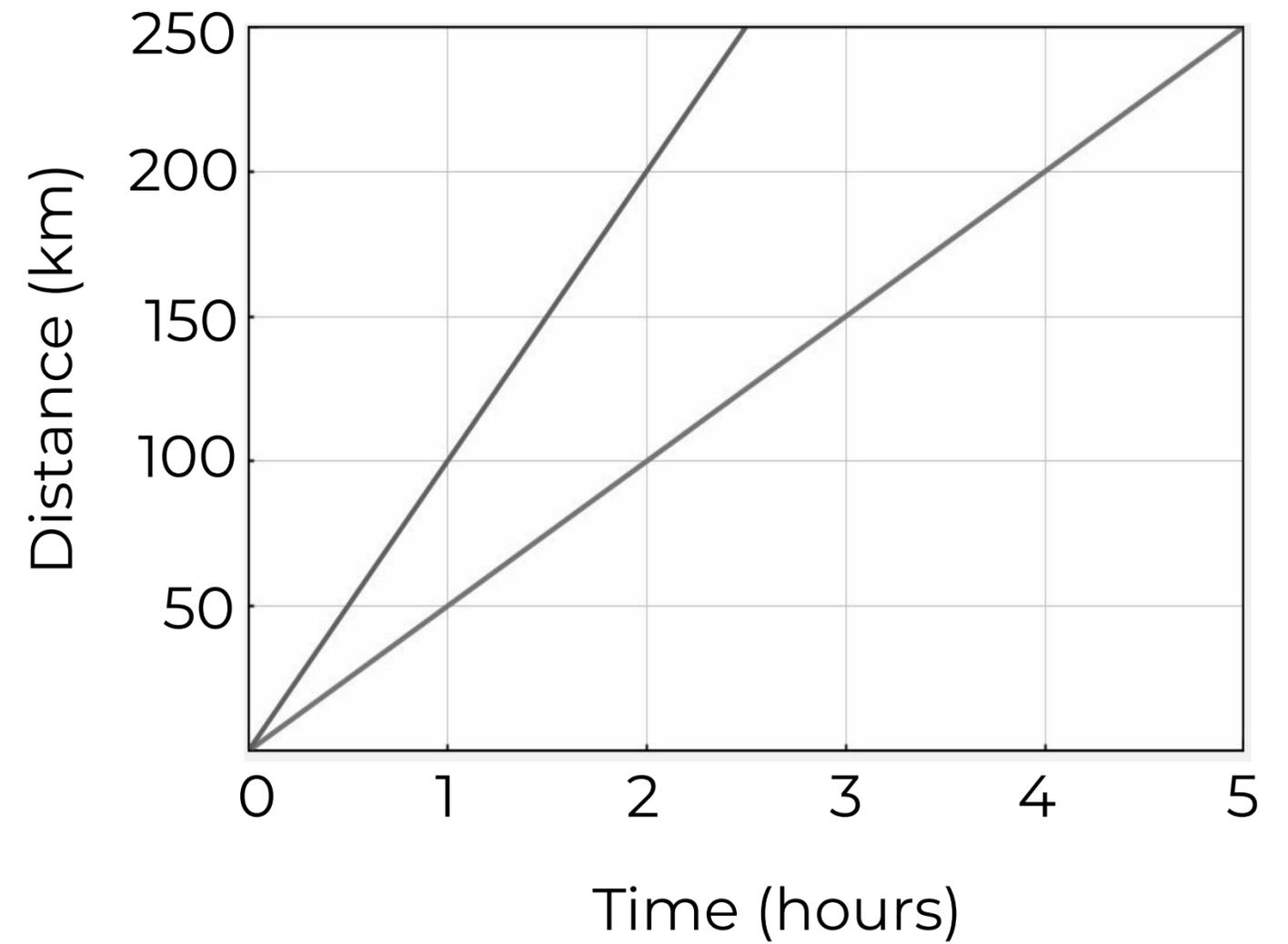


# Connect

This graph represents the journey of two cars.

Which car is travelling more quickly?

How do you know?



# Connect

**Speed** can be thought of as the **distance** travelled in **one unit of time**.

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$



# Connect

**Three** of these formulae are correct. Explain why.

$$\text{Distance} = \frac{\text{Time}}{\text{Speed}}$$

$$\text{Speed} = \text{Distance} \times \text{Time}$$

$$\text{Time} = \frac{\text{Speed}}{\text{Distance}}$$

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$\text{Distance} = \text{Speed} \times \text{Time}$$

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$



# Independent task

Answer the following questions, remember to give the correct units:

1. A cheetah takes 4 seconds to travel 100 m.

What is the speed of the cheetah?

2. Antoni drives a distance of 260 km. His journey takes 5 hours.

What is his average speed?

3. Binh cycles at an average speed of 6 km/h on a journey of 42 km.

How long does she take?



# Independent task

4. Cala runs at 9 km/h for half an hour.  
How far does she run?
5. Xavier drives for 60 000 m at an average speed of 40 km/h.  
He starts his journey at 9.50 am.  
At what time does his journey end?



# Independent task

Newcastle University is 285 miles from London

## Travelling direct

A train leaves London at 13:23 and arrives at Newcastle at 16:33.

## Travelling via Leeds

It takes 2 hours 10 minutes to travel 195 miles to Leeds.

A 10 minute wait on the platform.

A second train which travels at 75 miles per hour to Newcastle.

- a. Compare the two journeys. What are their average speeds?
- b. Why might we talk about average speed rather than speed in this problem? What does it mean?



# Explore

How could you complete Binh's sentence in different ways using the cards?

If I increase my speed by , I'll get there in  of the time.

Binh

25%

$\frac{2}{3}$

50%

?%

$\frac{5}{8}$

80%

60%

20%

$\frac{?}{?}$

Can you spot a pattern?

