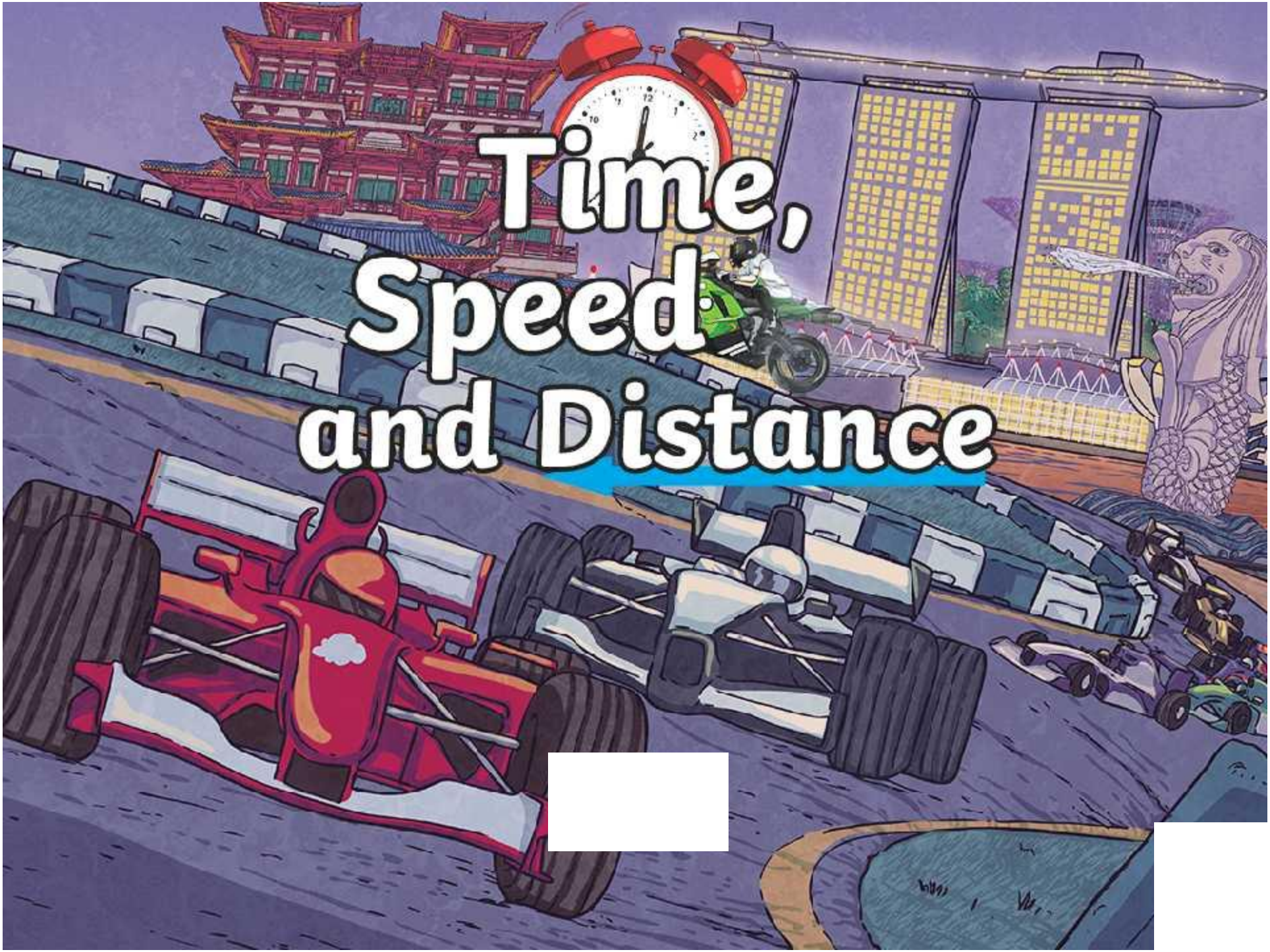
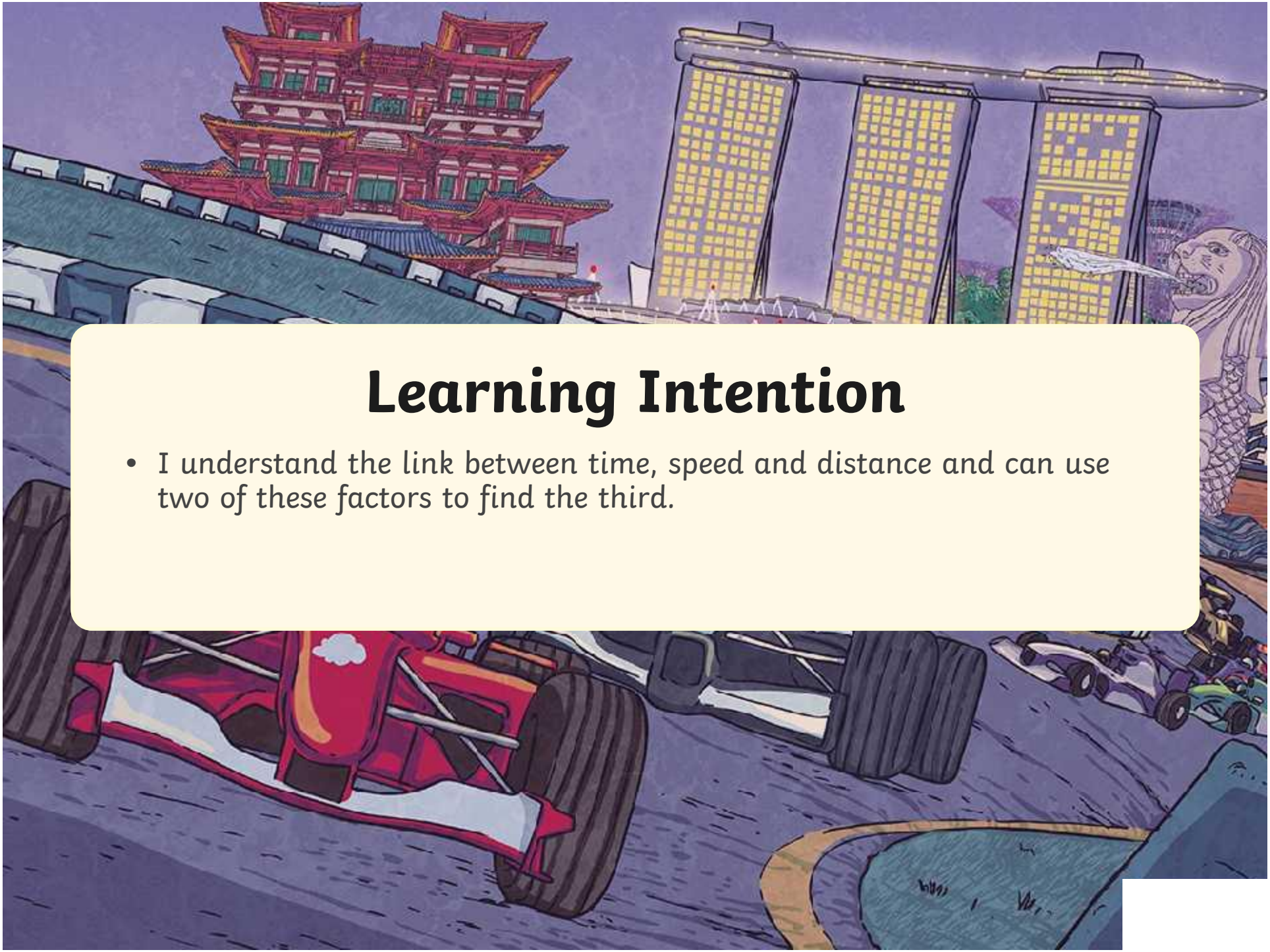
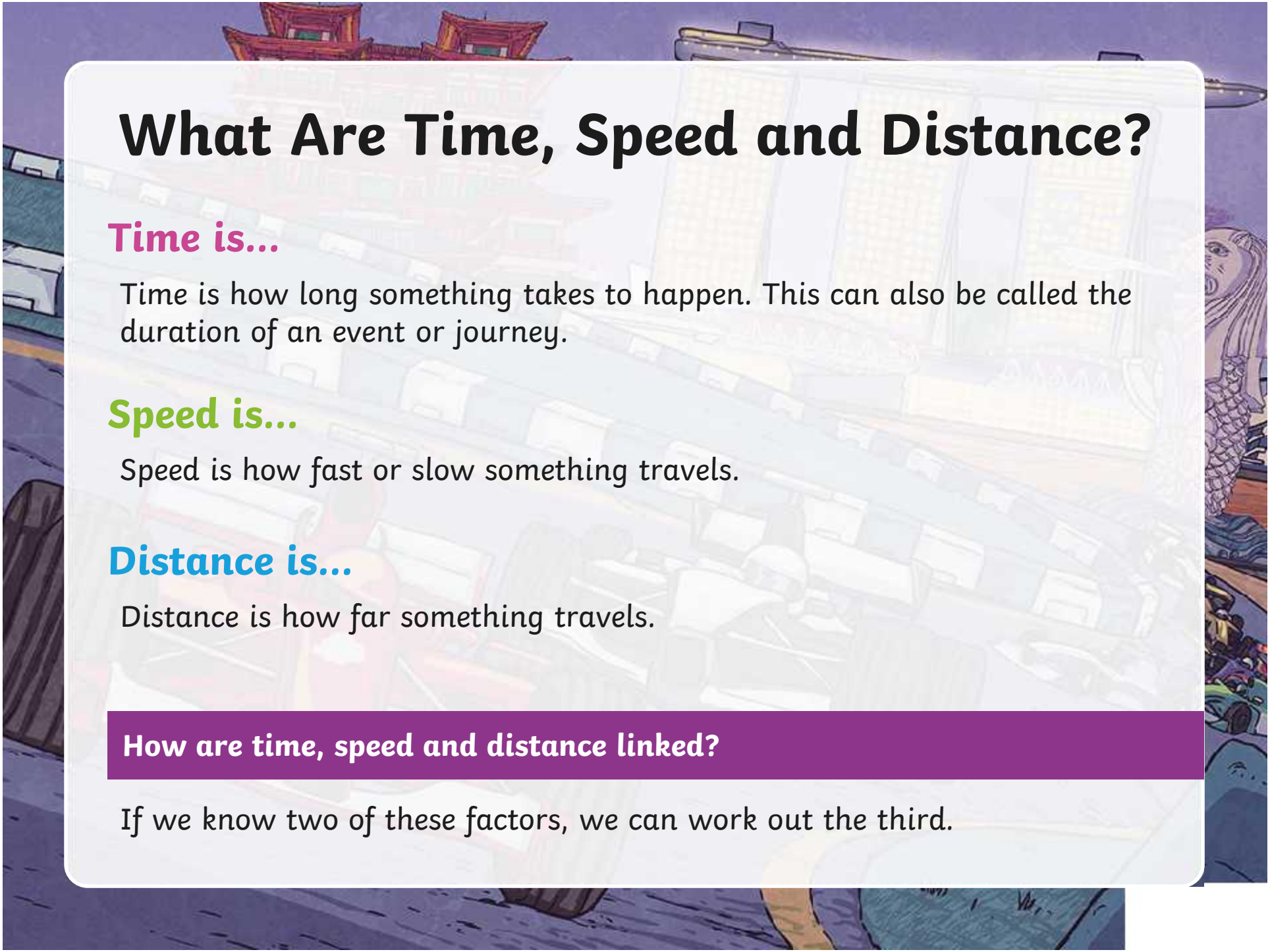

Time,
Speed
and Distance



# Learning Intention

- I understand the link between time, speed and distance and can use two of these factors to find the third.



# What Are Time, Speed and Distance?

## Time is...

Time is how long something takes to happen. This can also be called the duration of an event or journey.

## Speed is...

Speed is how fast or slow something travels.

## Distance is...

Distance is how far something travels.

**How are time, speed and distance linked?**

If we know two of these factors, we can work out the third.

# How to Calculate Distance

If we know the time and speed of a journey, we can work out the distance that has been travelled. To calculate distance **(D)**, we multiply time **(T)** by speed **(S)** or speed by time.

## For example:

Time (How long did you travel for?) = 1 hour
Speed (How fast did you travel?) = 60km per hour or 60km/h

**so**

Distance (How far did you travel?) = 1 × 60km = 60km

Time (How long did you travel for?) = 2 hours
Speed (How fast did you travel?) = 40km per hour or 40km/h

**so**

Distance (How far did you travel?) = 2 × 40km = 80km

# How to Calculate Distance

A car travels at a speed of 70mph. How far will it travel in 3 hours?

**D** = **T** × **S** = 3 × 70 = 210 miles

You walk at 3km/h. How far will you walk in 5 hours?

**D** = **T** × **S** = 5 x 3 = 15km

# How to Calculate Speed

If we know the time and distance of a journey, we can work out the speed. To calculate speed **(S)**, we divide distance **(D)** by time **(T)**.

## For example:

Time (How long did you travel for?) = 1 hour
Distance (How far did you travel?) = 60km

**so**

Speed (How fast did you travel?) = 60 ÷ 1 = 60km per hour or 60km/h

Time (How long did you travel for?) = 2 hours
Distance (How far did you travel?) = 80km

**so**

Speed (How fast did you travel?) = 80 ÷ 2 = 40 km per hour or 40 km/h

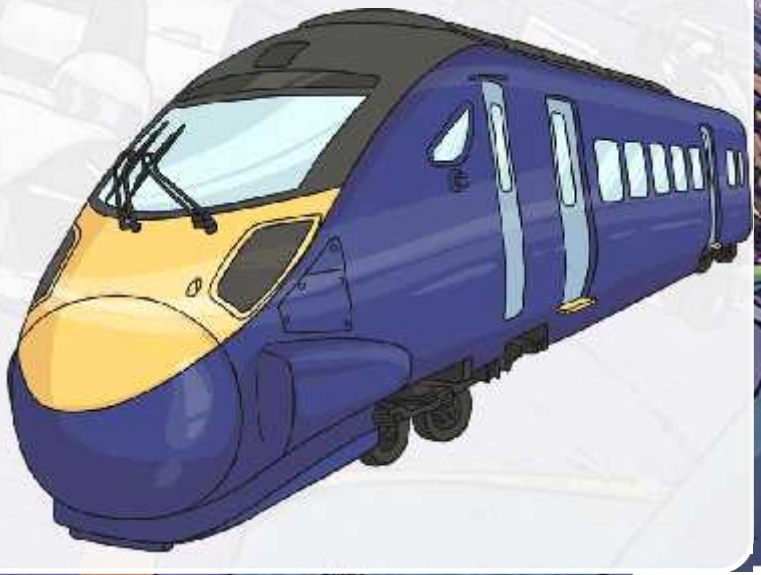
# How to Calculate Distance

I walked 16km in 4 hours, what speed was I walking at?

**S** = **D** ÷ **T** = 16 ÷ 4 = 4km/h

A train travelled 900 miles in 5 hours. What speed was it travelling at?

**S** = **D** ÷ **T** = 900 ÷ 5 = 180mph



# How to Calculate Time

If we know the distance and speed of a journey, we can work out the time. To calculate time **(T)**, we divide distance **(D)** by speed **(S)**. This can also be shown as: **T** = **D** ÷ **S**

## For example:

Distance (How far?) = 60km
Speed (How fast?) = 60km per hour or 60km/h
**so**
Time (How long?) = 60 ÷ 60 = 1 hour

Distance (How far?) = 80km
Speed (How fast?) = 40km/h
**so**
Time (How long?) = 80 ÷ 40 = 2 hours

# How to Calculate Time

I walked 20km at a speed of 4km/h. How long did it take me?

**T** = **D** ÷ **S** = 20 ÷ 4 = 5 hours

The lorry travelled 600 miles at an average speed of 60mph. What was the total driving time?

**T** = **D** ÷ **S** = 600 ÷ 60 = 10 hours

# Remember...

To calculate distance **(D)**, we multiply time **(T)** by speed **(S)** or speed by time. **D** = **S** × **T**

To calculate speed **(S)**, we divide distance **(D)** by time **(T)**. **S** = **D** ÷ **T**

To calculate time **(T)**, we divide distance **(D)** by speed (**S**). **T** = **D** ÷ **S**

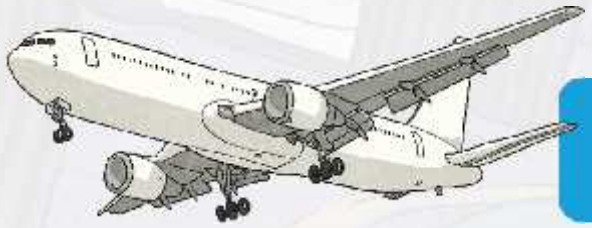
# Questions

**Can you work out the time, distance or speed for the following?**

Charlie walks at 2mph. He walks for 6 hours. How far has he walked?

Amira completes a 10km race in 1 hour. What was her speed?

A plane flies 6000km in 10 hours. How fast was the plane travelling?



Answers

# Answers

Charlie walks at 2mph. He walks for 6 hours. How far has he walked?

**D = S × T = 2 × 6 = 12 miles**

Amira completes a 10km race in 1 hour. What was her speed?

**S = D ÷ T = 10 ÷ 1 = 10km/h**

A plane flies 6000km in 10 hours. How fast was the plane travelling?

**T = D ÷ S = 6000 ÷ 10 = 600km/h**