Y9 Maths Knowledge Organiser Topic 15: Distance-Time Graphs

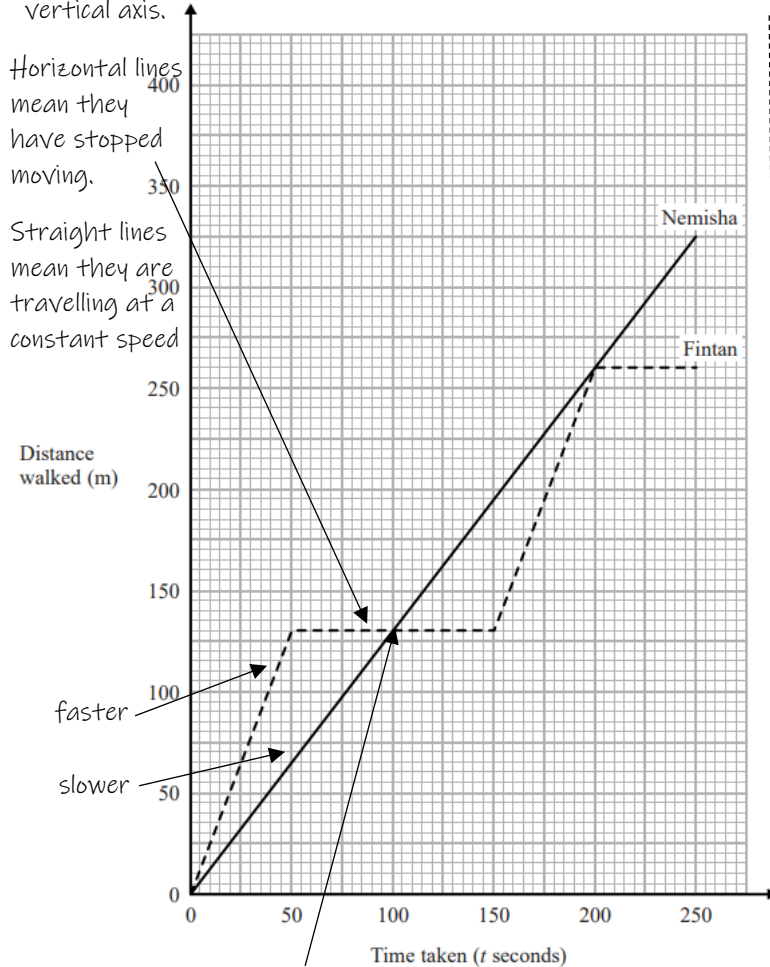| What must I be able to do?	Key vocabulary	
New content: ☐ Interpret distance-time graphs and speed-time graphs ☐ Understand that the gradient of a distance-time graph represents speed ☐ Find speed and distance from information on a travel graph ➢ Sparx M581, M551, M247	Distance-time graph	A graph where time is plotted against distance from a fixed point. <u>Time</u> will always be the <u>horizontal axis.</u>

Key Features of a Distance-Time graph

The **gradient** of the line represents the **speed** they are travelling. Time is on the horizontal axis and distance on the vertical axis.

Horizontal lines mean they have stopped moving.

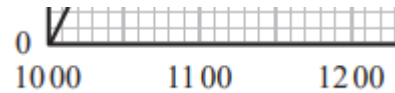Straight lines mean they are travelling at a constant speed

faster

slower

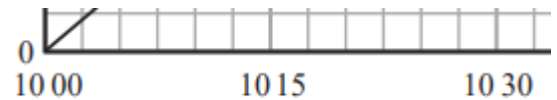Where the graphs meet they are at the same place at the same time

Always check the scales used before answering a question
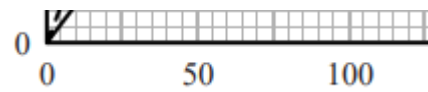
This scale is 50 seconds in 10 small squares. Each small square is 50 ÷ 10 = 5 seconds.

This scale is 60 minutes in 10 small squares. Each small square is 60 ÷ 10 = 6 minutes.

This scale is 15 minutes in 6 small squares. Each small square is 15 ÷ 6 = 2.5 minutes.

A better way to think of this is it represents 5 minutes for every 2 small squares

Speed-Time graphs

Time is on the horizontal axis, speed on the vertical axis.

The gradient of the line represents the acceleration or deceleration of the object (how quickly it is speeding up or slowing down). A straight line means they have constant acceleration/deceleration.

Where the graphs intersect the objects are travelling at the same speed, they may not be in the same place.