Statistics: Running Line Graphs

Aim:	**Success Criteria:**	**Resources:**
Solve comparison, sum and difference problems using information presented in a line graph. I can answer questions about data presented in a line graph.	I can interpret data in tables and line graphs. I can identify the features of a line graph. I can answer comparison, sum and difference questions about data presented in a line graph.	**Lesson Pack**
	Key/New Words: Line graph, table, data, axis, continuous data.	**Preparation:** **1500m Line Graph Handout** - as required **Warm Up Jog Line Graph Handout** - as required **Running Race Line Graph Handout** - as required Differentiated **Running Line Graphs Activity Sheets** - one per child **Find My Match Fun Run Line Graph Cards** - one per class **Fun Run Line Graph Handout** - as required

Prior Learning: It will be helpful if children have experience of interpreting data in tables and plotting coordinates in the first quadrant.

Learning Sequence

	1500m World Record Line Graph: Referring to the line graph displayed on the **Lesson Presentation** and on the **1500m Line Graph Handout**, the children answer questions about Mo Farah's 1500m world record time.	
	Jogging Line Graph: Discuss the line graph shown on the **Lesson Presentation** and on the **Warm Up Jog Line Graph Handout** which shows the time it took a child to jog four laps of the school playground (1000m). Discuss how the data has been plotted and joined to create a continuous line, which gives approximate timings for every 50m of the jog. The children then rehearse reading line graphs correctly by identifying if the statements about the time and distance of the jog are true or false.	
	Running Race Line Graph Challenge: Discuss the double line graph shown on the **Lesson Presentation** and on the **Running Race Line Graph Handout** interpreting what it is showing. Agree that the graph is showing two sets of distance/time data which can be compared. Draw attention to the use of a key/legend to identify the different sets of data. Demonstrate how to answer a question comparing the two sets of data by reading the line graph correctly.	
	Running Line Graphs: Children complete the differentiated **Running Line Graphs Activity Sheets**, to show they can answer questions about data presented in a line graph. Interpret the line graph correctly to answer simpler questions about the time of a run over 1000m. Interpret the line graph correctly to answer questions about the time of a run over 2000m. Interpret the double line graph correctly to answer questions about the time of two runs over 2000m.	
	Fun Run Line Graph Find My Match: Hand out the shuffled **Find My Match Fun Run Line Graph Cards**, one to each child. Each card displays either a question or answer that corresponds to the line graph shown on the **Lesson Presentation** and the **Fun Run Line Graph Handout**. The children have three minutes to quietly move around the classroom to find their matching card.	

Masterit

Doit: Collect data about the time and distance about your own class run. Draw line graphs to show the data and write and answer questions about them.

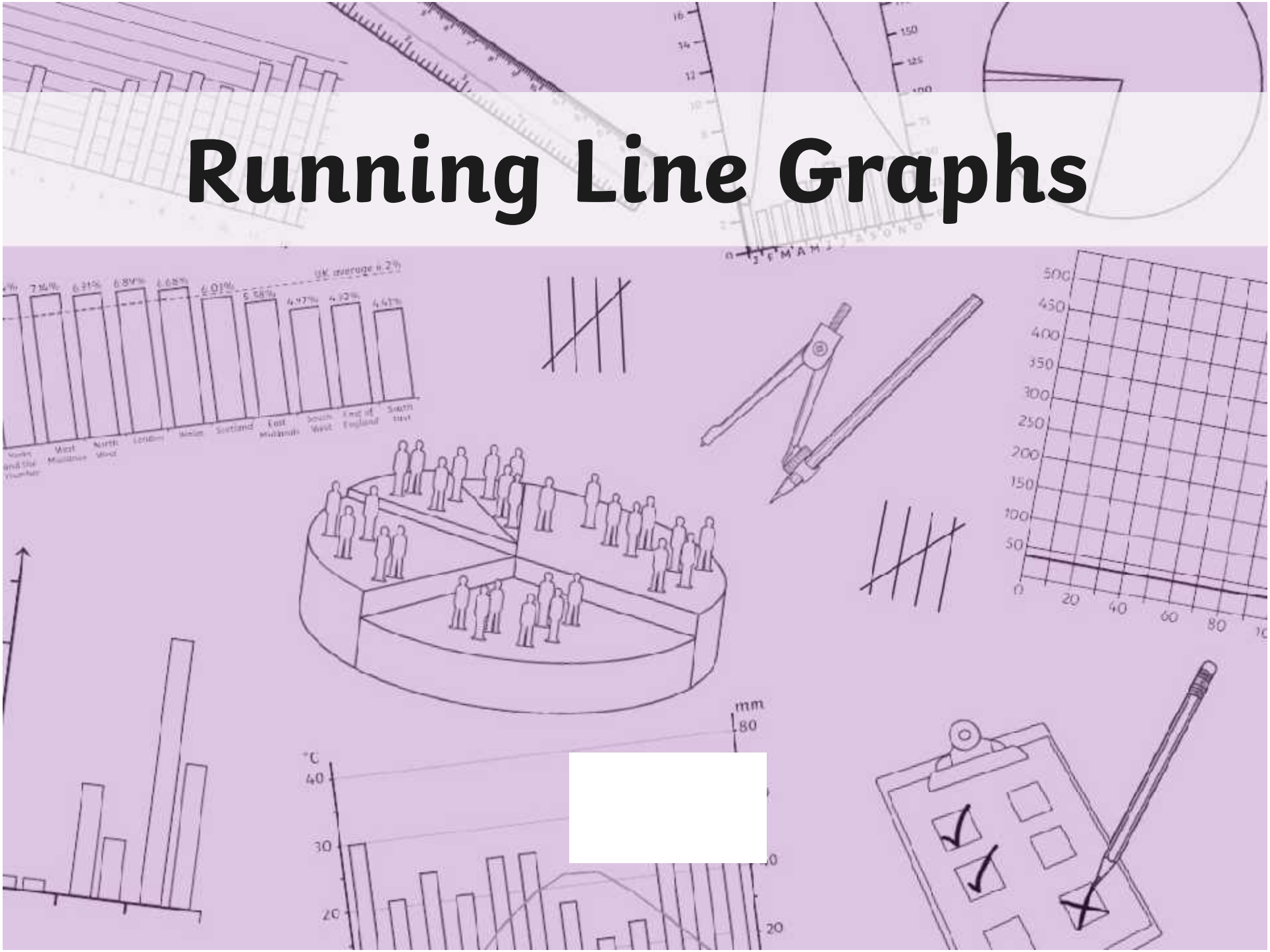
Extendit: Research the world record times for other distance races. Draw line graphs to show the data and write and answer questions about them.

Maths

Statistics

Regent Studies | www.regentstudies.com

Running Line Graphs



Aim

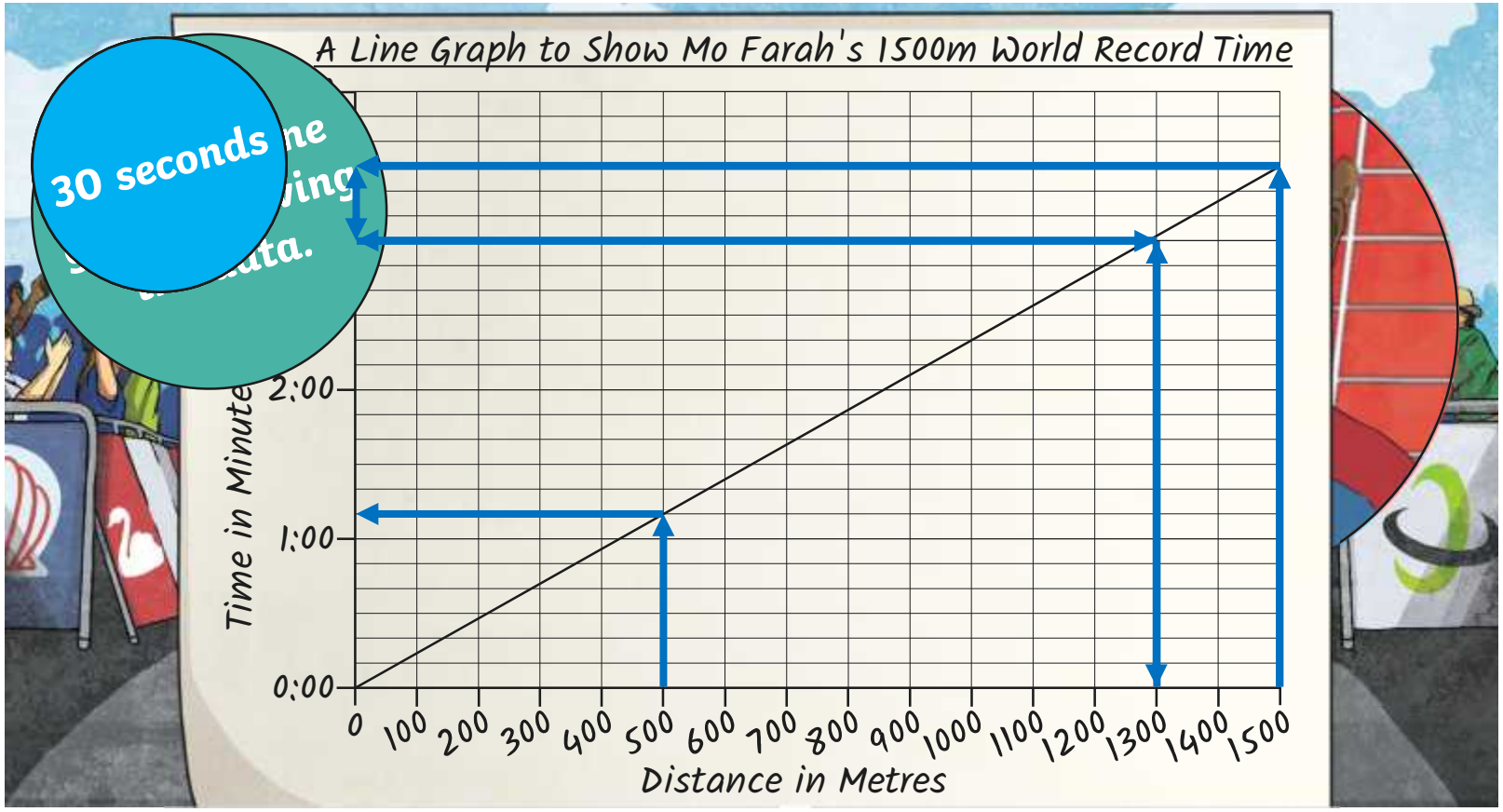
- I can answer questions about data presented in a line graph.

Success Criteria

- I can interpret data in tables and line graphs.
- I can identify the features of a line graph.
- I can answer comparison, sum and difference questions about data presented in a line graph.

1500m World Record Line Graph

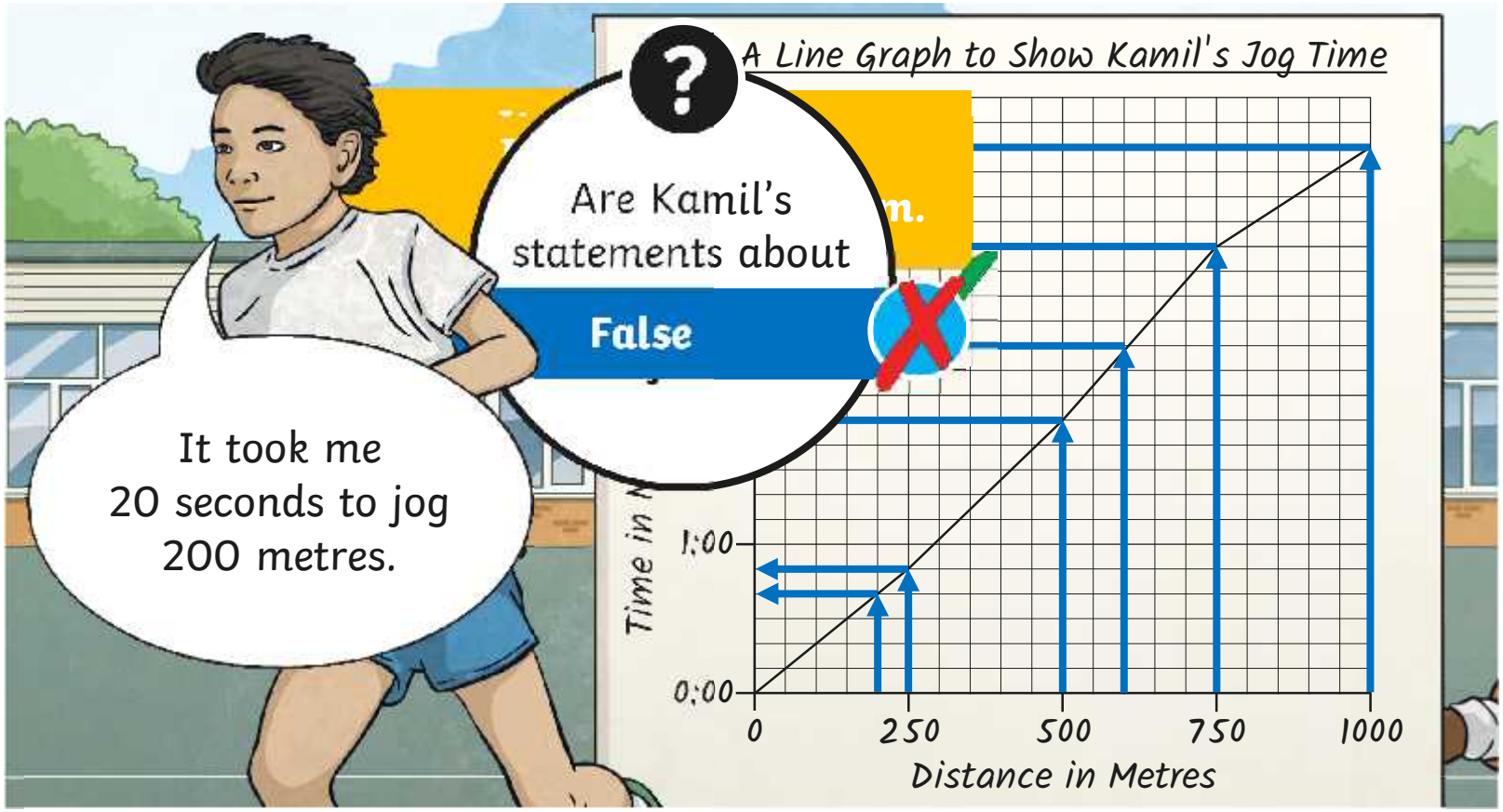
In 2013 [illegible] 1500m.



Jogging Line Graph

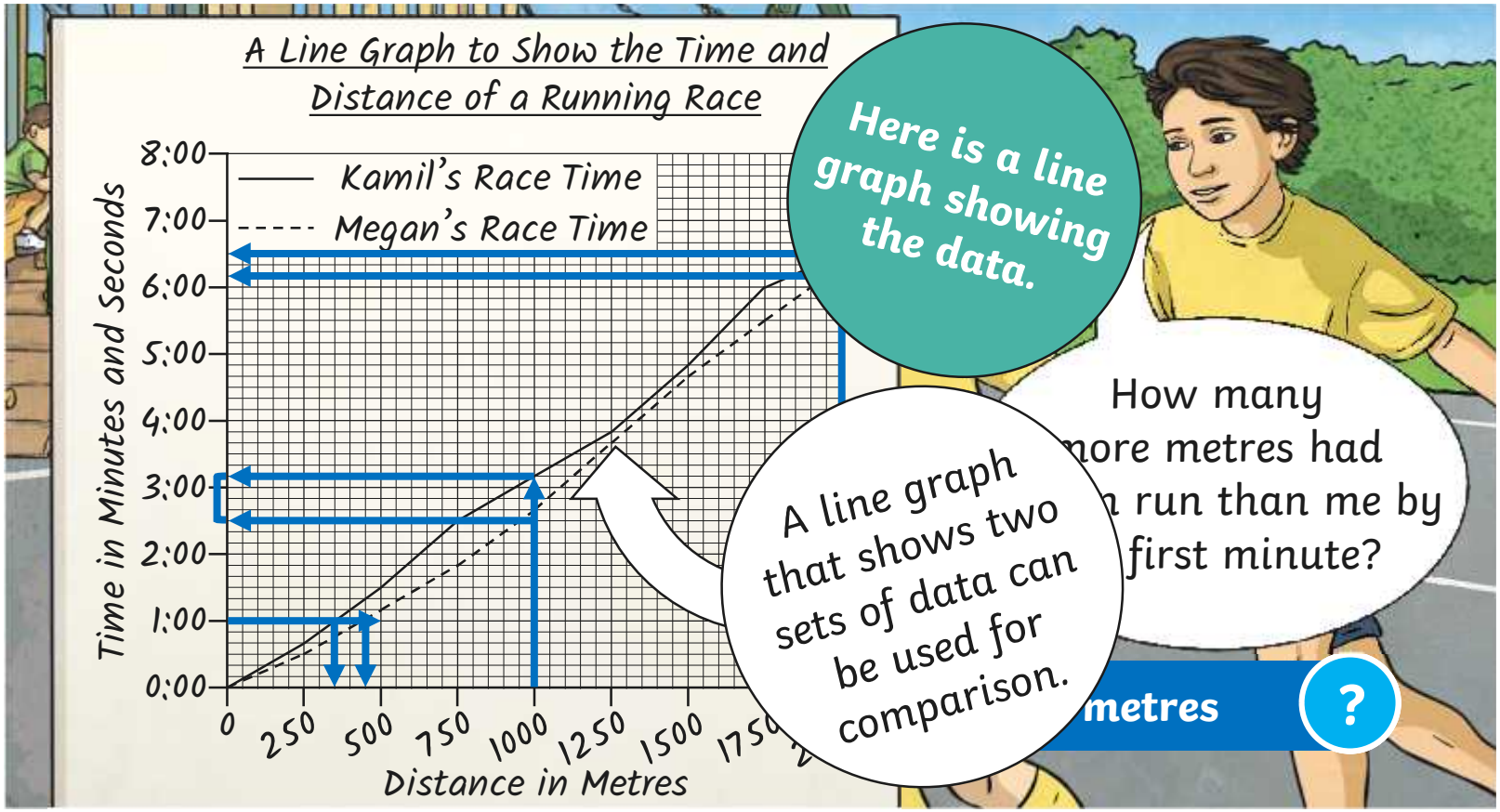
Kamil completed the warm up first. Mrs Chamber
a stopwatch to time how long it took Kamil to complete each 250m lap.

Implied Lesson, Class 5 Mrs Chamber
jogging around the playground for time.



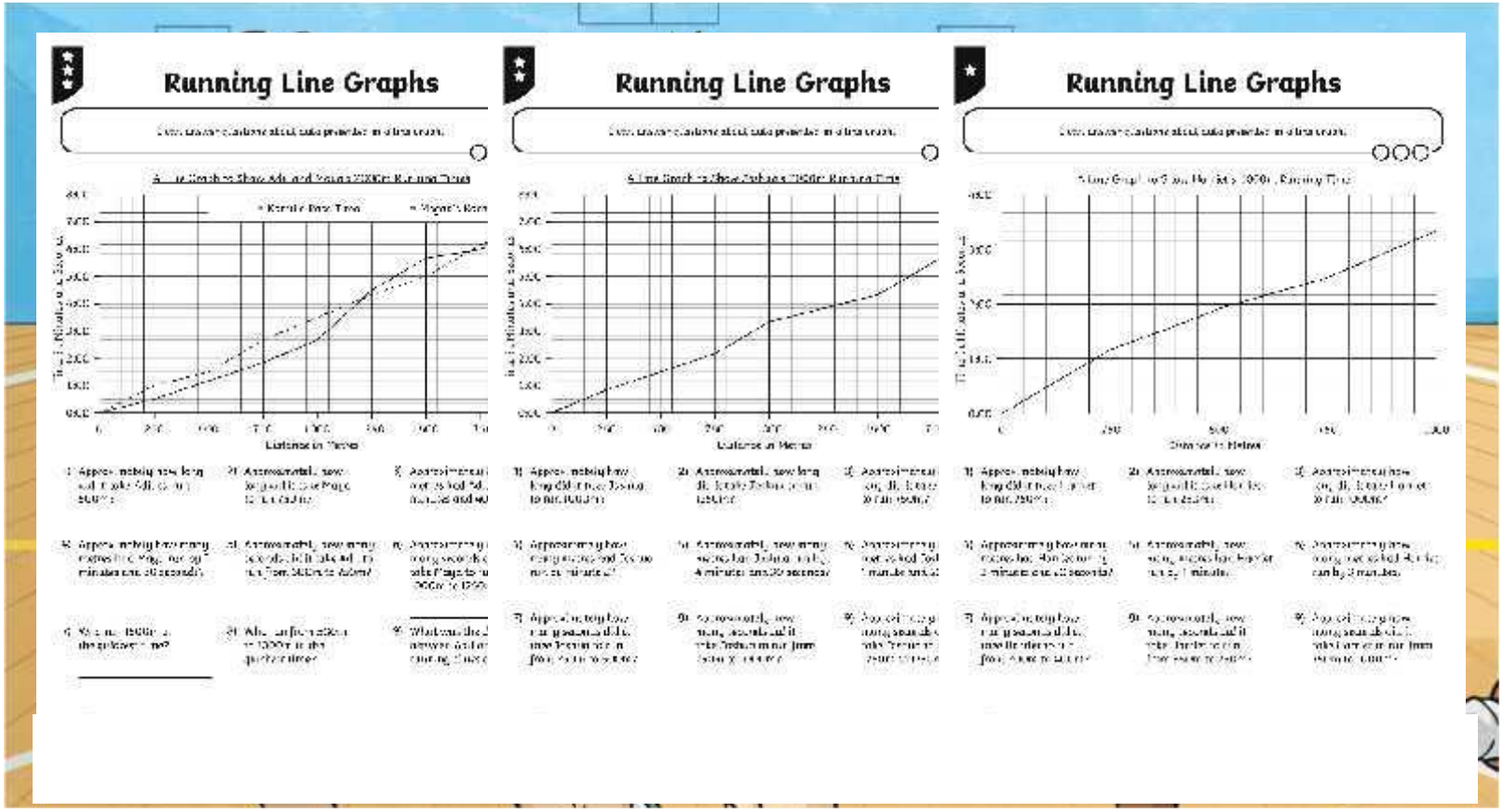
Running Race Line Graph Challenge

At playtime, Kamil and his friend Megan raced each other to see who could complete eight laps of the playground in the fastest time.

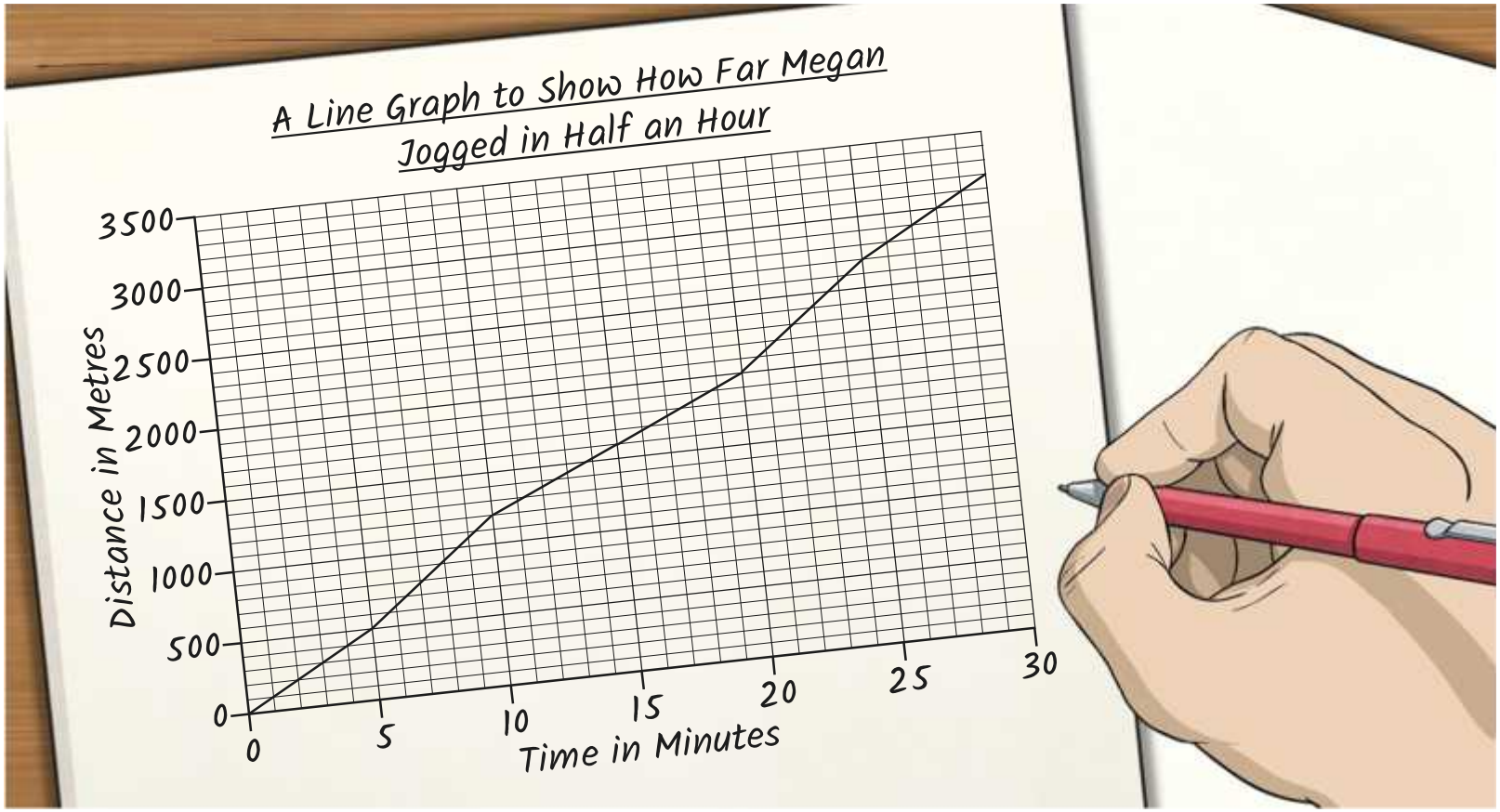


Running Line Graphs

Use your stunning statistics skills to complete these activity sheets:



Find My Match Fun Run Line Graph



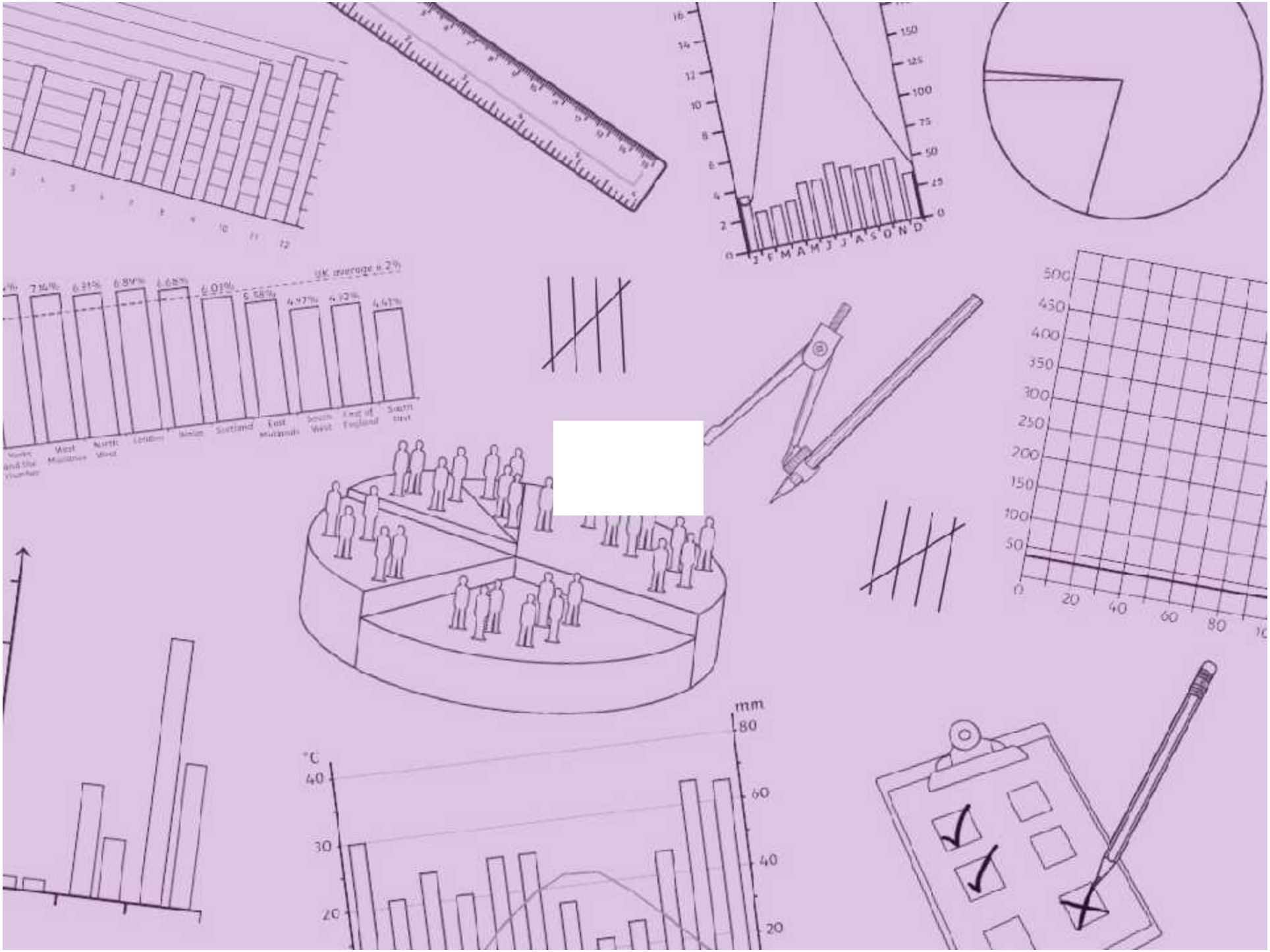
Find My Match Fun Run Line Graph

Aim

- I can answer questions about data presented in a line graph.

Success Criteria

- I can interpret data in tables and line graphs.
- I can identify the features of a line graph.
- I can answer comparison, sum and difference questions about data presented in a line graph.


J F M A M J J A S O N D
UK average = 2%
mm
°C

Aim: Solve comparison, sum and difference problems using information presented in a line graph.				**Date:**					
				Delivered By:			**Support:**		
Success Criteria	**Me**	**Friend**	**Teacher**	**T**	**PPA**	**S**	**I**	**AL**	**GP**
I can interpret data in tables and line graphs.				**Notes/Evidence**					
I can identify the features of a line graph.									
I can answer comparison, sum and difference questions about data presented in a line graph.									

Next Steps

- _____
- _____

T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

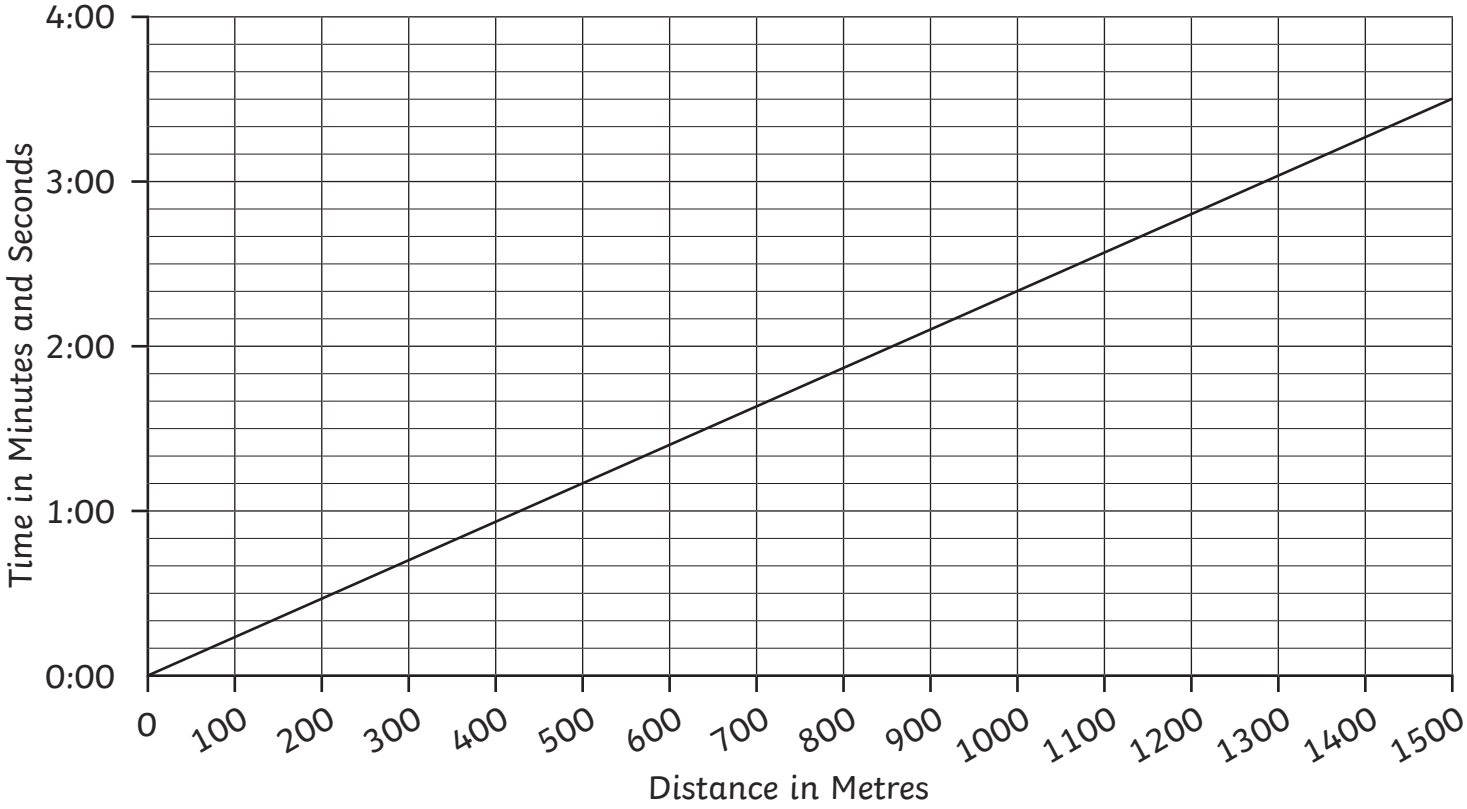
Aim: Solve comparison, sum and difference problems using information presented in a line graph.				**Date:**					
				Delivered By:			**Support:**		
Success Criteria	**Me**	**Friend**	**Teacher**	**T**	**PPA**	**S**	**I**	**AL**	**GP**
I can interpret data in tables and line graphs.				**Notes/Evidence**					
I can identify the features of a line graph.									
I can answer comparison, sum and difference questions about data presented in a line graph.									

Next Steps

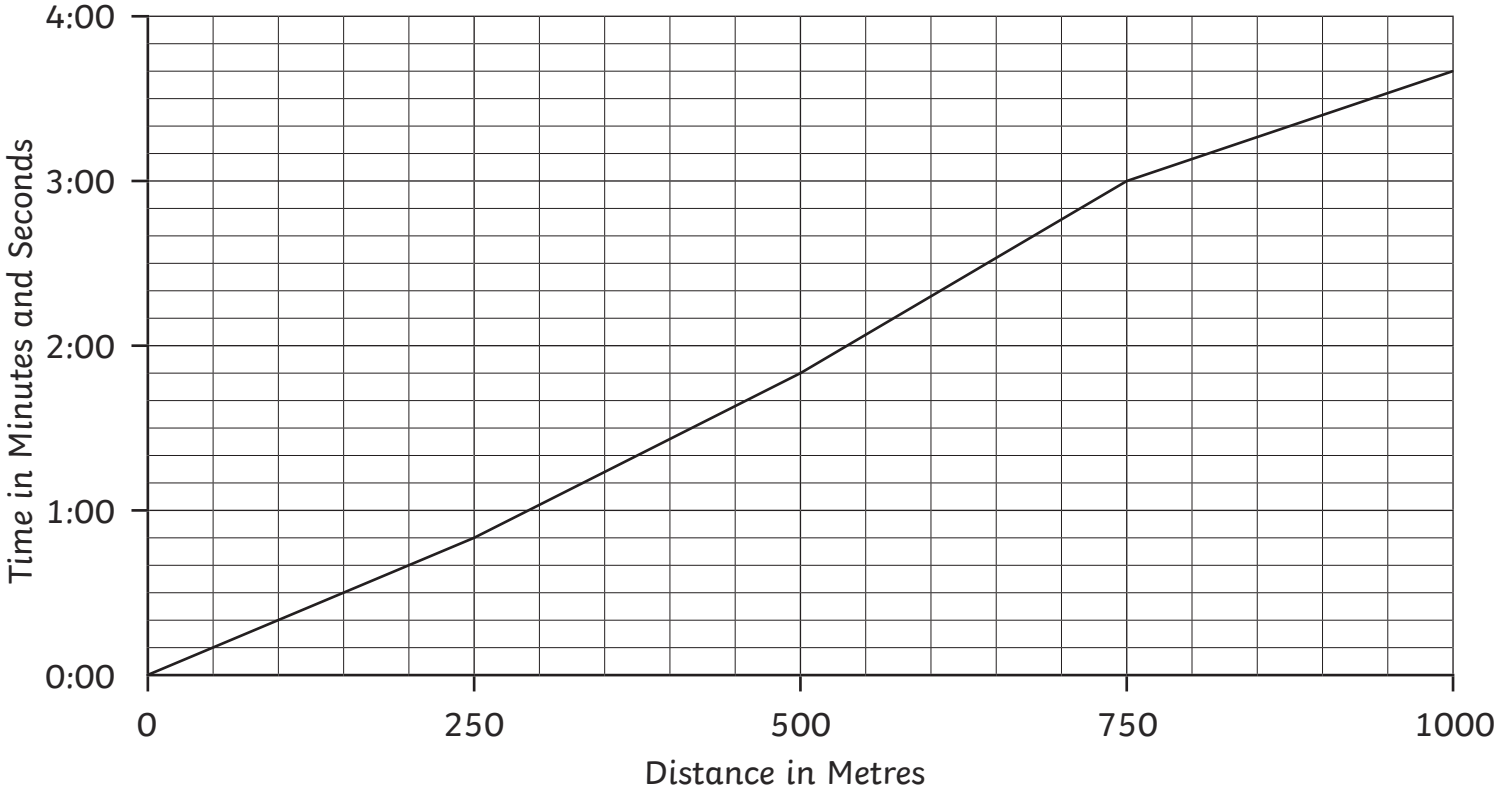
- _____
- _____

T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

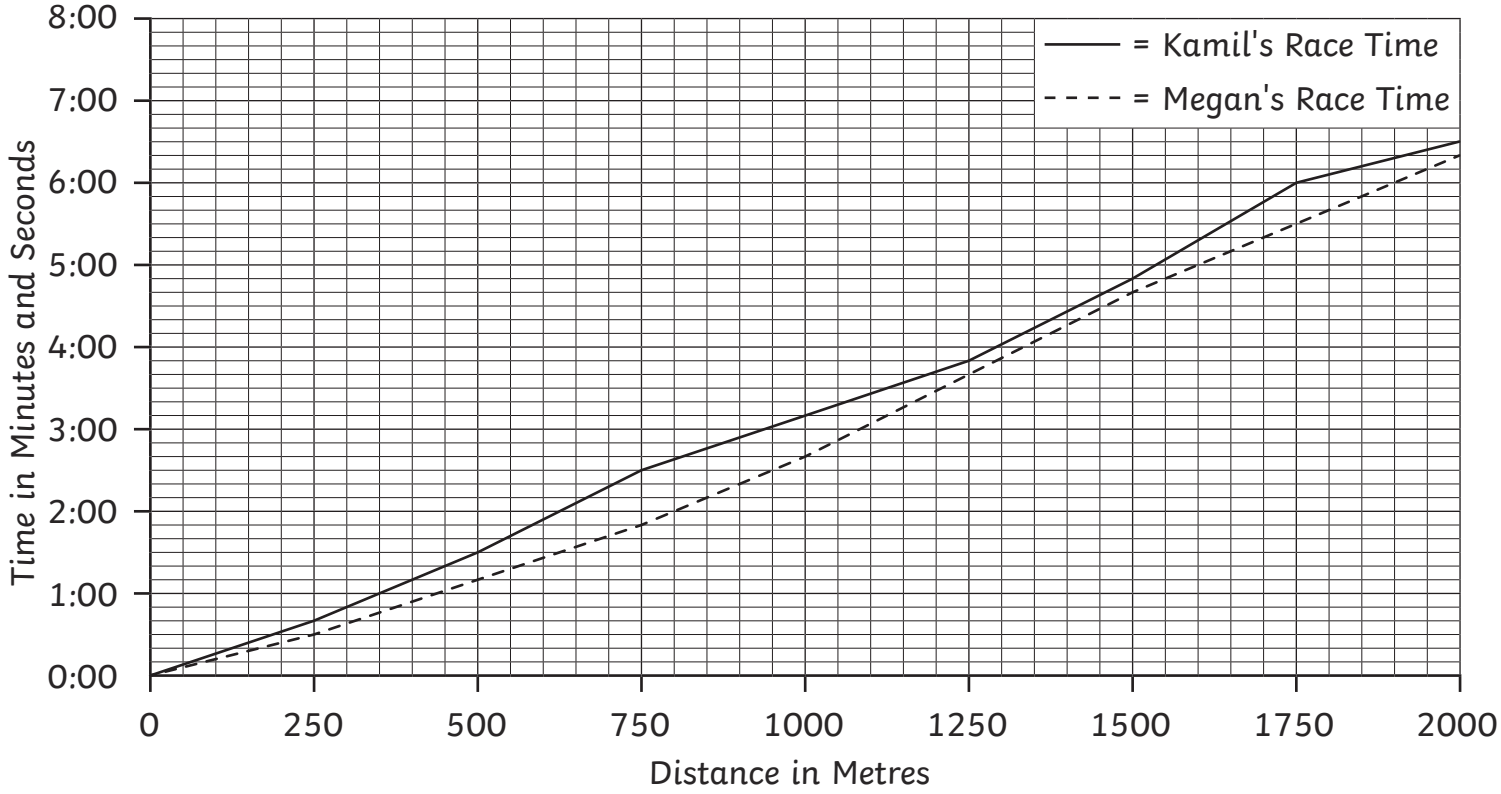
A Line Graph to Show Mo Farah's 1500m World Record Time



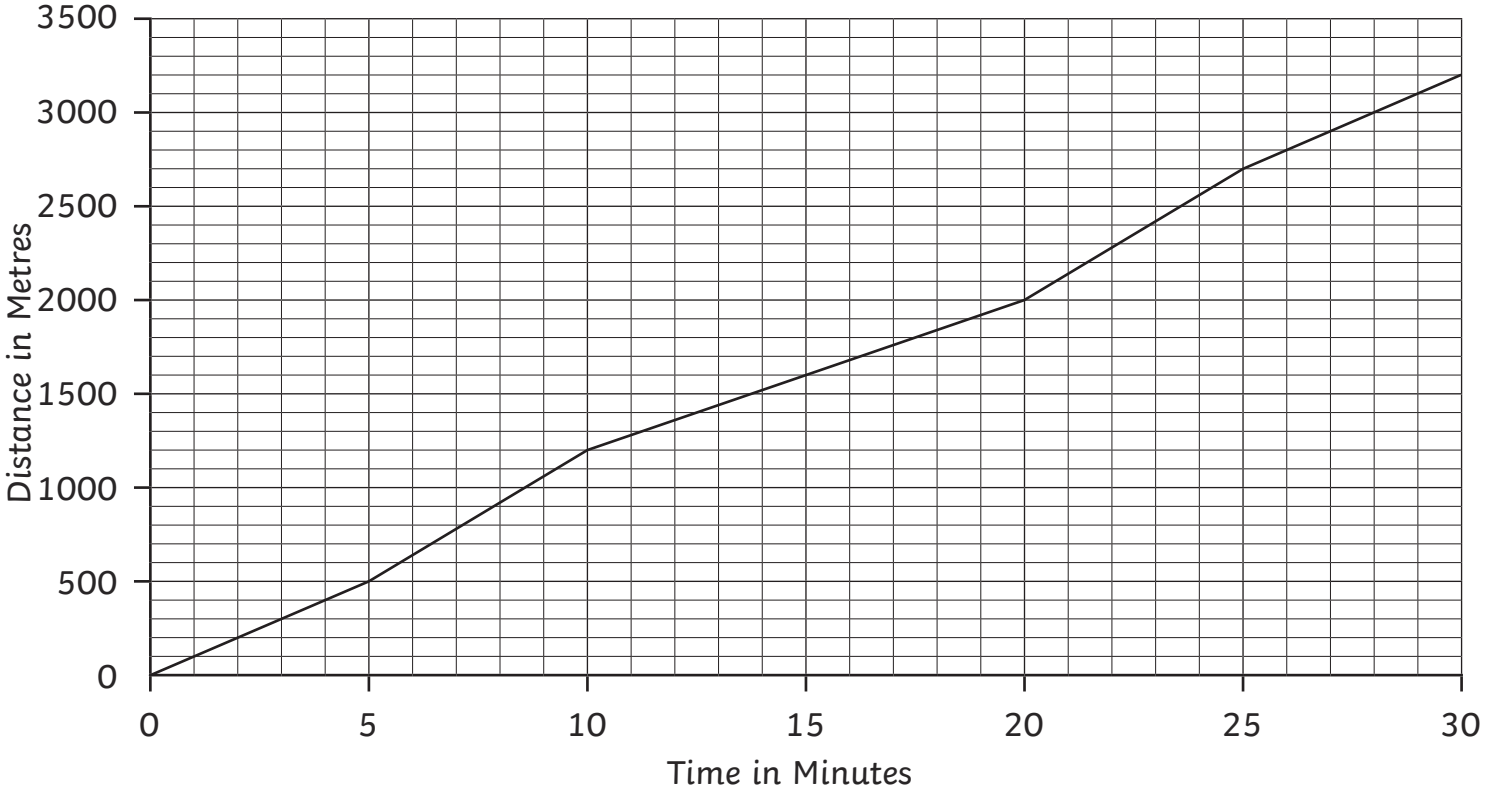
A Line Graph to Show Kamil's Jog Time



A Line Graph to Show Kamil and Megan's Running Race



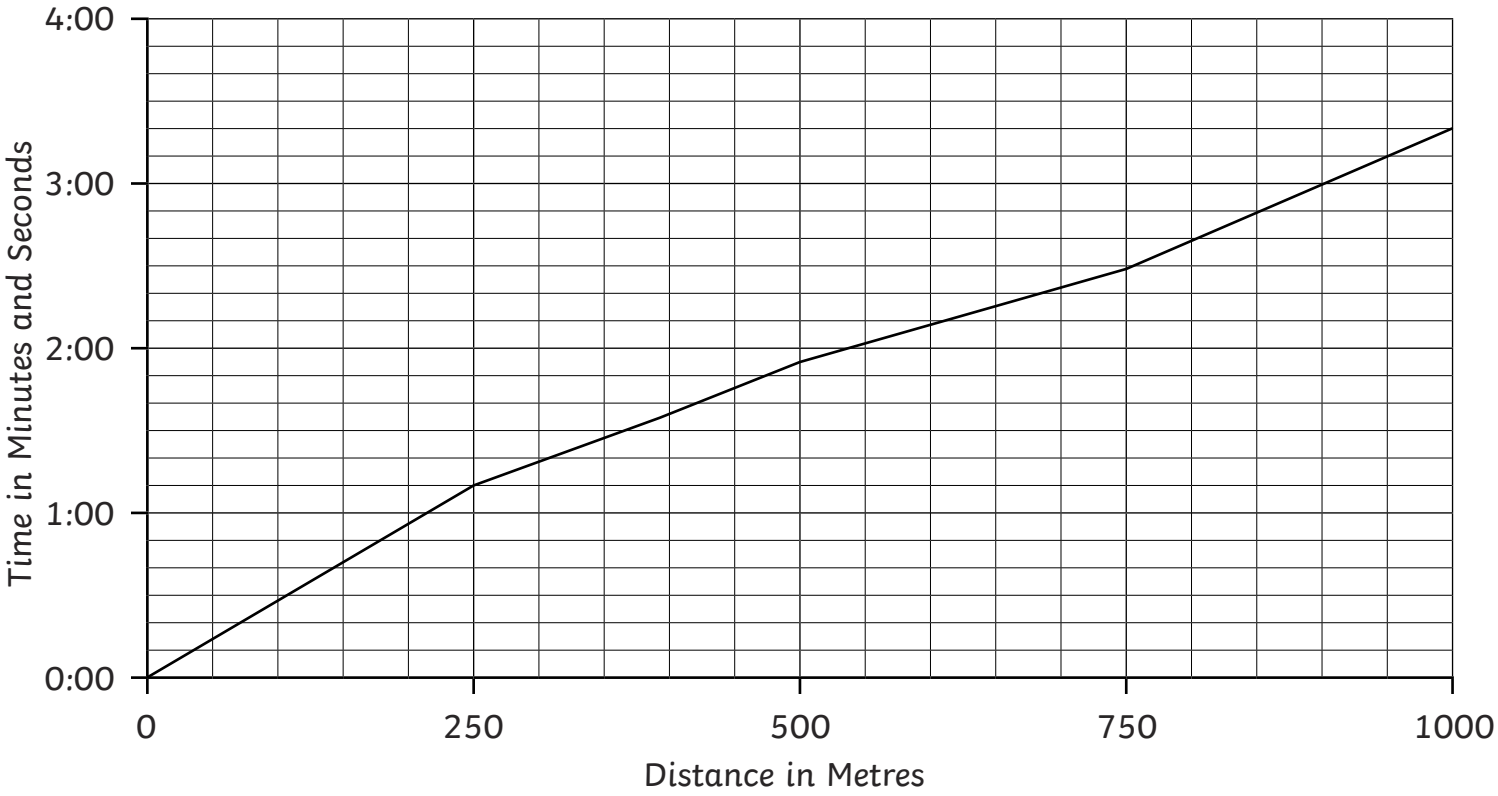
A Line Graph to Show Megan's Fun Run



Running Line Graphs

I can answer questions about data presented in a line graph.

A Line Graph to Show Harriet's 1000m Running Time



1) Approximately how long did it take Harriet to run 750m?

2) Approximately how long did it take Harriet to run 250m?

3) Approximately how long did it take Harriet to run 1000m?

4) Approximately how many metres had Harriet run by 2 minutes and 20 seconds?

5) Approximately how many metres had Harriet run by 1 minute?

6) Approximately how many metres had Harriet run by 3 minutes?

7) Approximately how many seconds did it take Harriet to run from 200m to 400m?

8) Approximately how many seconds did it take Harriet to run from 550m to 750m?

9) Approximately how many seconds did it take Harriet to run from 750m to 1000m?

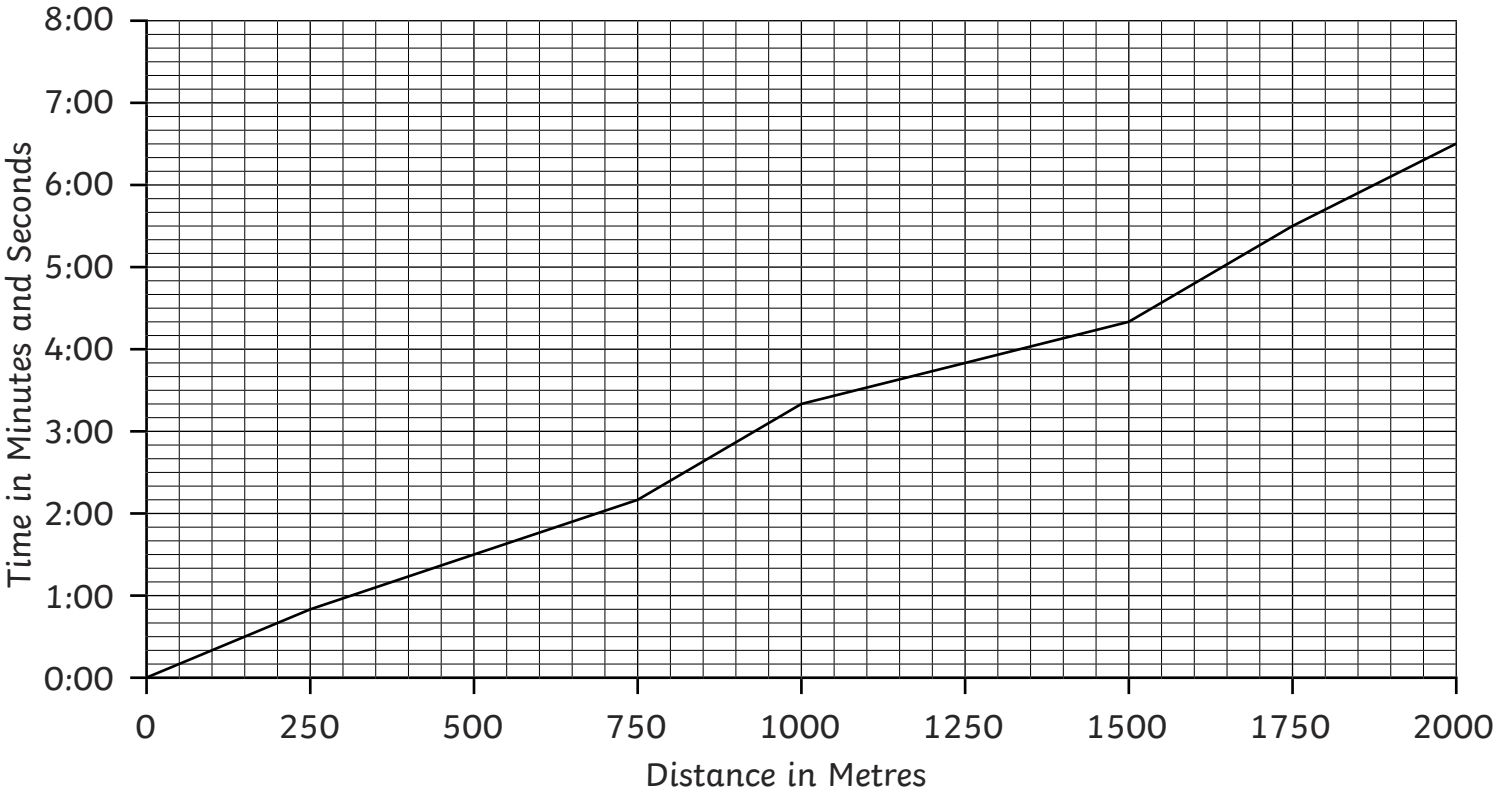
Running Line Graphs **Answers**

Question	Answer
1.	Approximately how long did it take Harriet to run 750m?
	2 minutes and 30 seconds
2.	Approximately how long did it take Harriet to run 250m?
	1 minute and 10 seconds
3.	Approximately how long did it take Harriet to run 1000m?
	3 minutes and 20 seconds
4.	Approximately how many metres had Harriet run by 2 minutes and 20 seconds?
	700m
5.	Approximately how many metres had Harriet run by 1 minute?
	200m
6.	Approximately how many metres had Harriet run by 3 minutes?
	900m
7.	Approximately how many seconds did it take Harriet to run from 200m to 400m?
	40 seconds
8.	Approximately how many seconds did it take Harriet to run from 550m to 750m?
	30 seconds
9.	Approximately how many seconds did it take Harriet to run from 750m to 1000m?
	50 seconds

Running Line Graphs

I can answer questions about data presented in a line graph.

A Line Graph to Show Joshua's 2000m Running Time



1) Approximately how long did it take Joshua to run 1000m?

2) Approximately how long did it take Joshua to run 1250m?

3) Approximately how long did it take Joshua to run 750m?

4) Approximately how many metres had Joshua run by minute 2?

5) Approximately how many metres had Joshua run by 4 minutes and 30 seconds?

6) Approximately how many metres had Joshua run by 1 minute and 50 seconds?

7) Approximately how many seconds did it take Joshua to run from 250m to 500m?

8) Approximately how many seconds did it take Joshua to run from 700m to 900m?

9) Approximately how many seconds did it take Joshua to run from 1150m to 1350m?

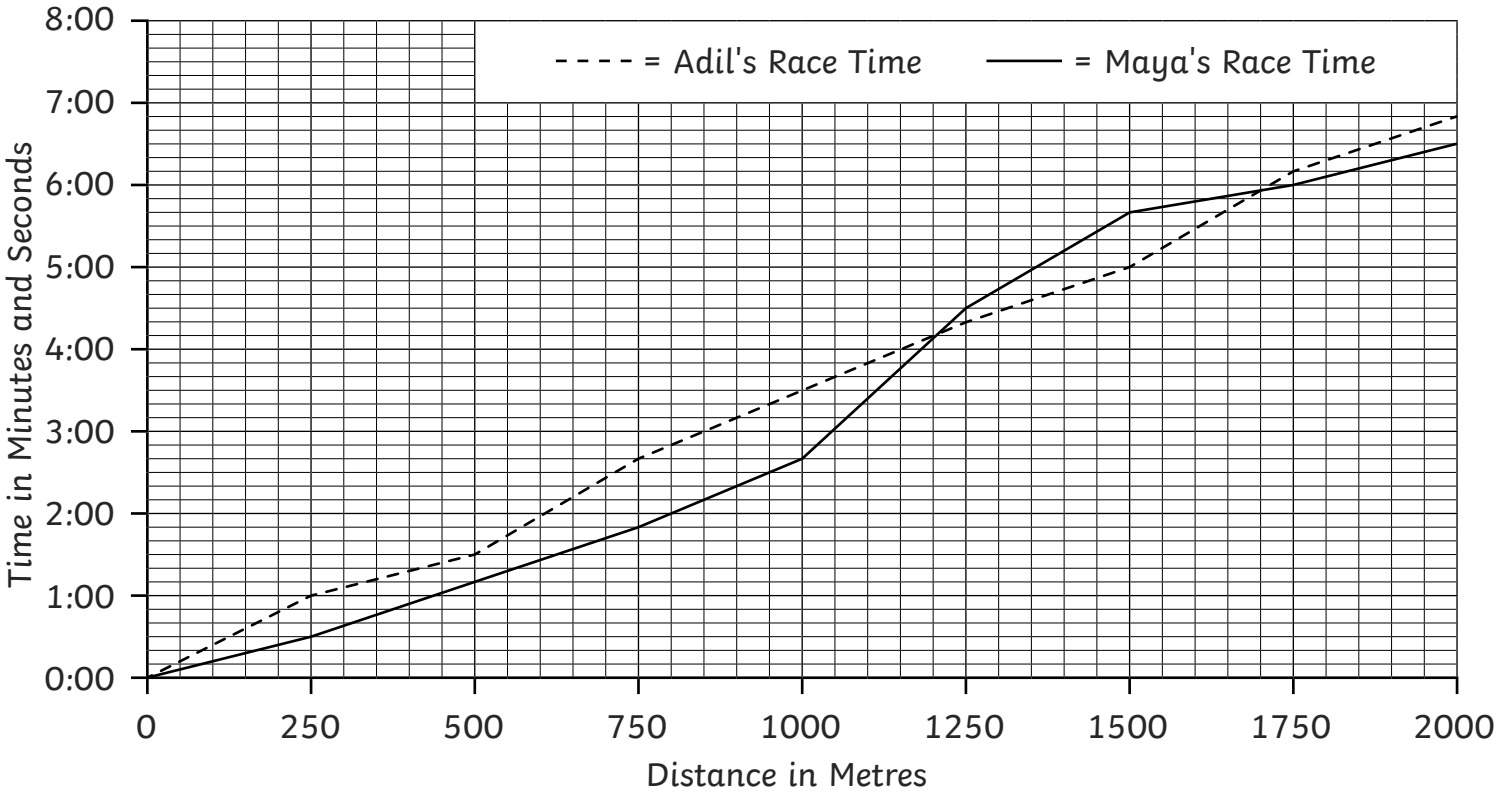
Running Line Graphs **Answers**

Question	Answer
1.	Approximately how long did it take Joshua to run 1000m?
	3 minutes and 20 seconds
2.	Approximately how long did it take Joshua to run 1250m?
	3 minutes and 50 seconds
3.	Approximately how long did it take Joshua to run 750m?
	2 minutes and 10 seconds
4.	Approximately how many metres had Joshua run by minute 2?
	700m
5.	Approximately how many metres had Joshua run by 4 minutes and 30 seconds?
	1550m
6.	Approximately how many metres had Joshua run by 1 minute and 50 seconds?
	650m
7.	Approximately how many seconds did it take Joshua to run from 250m to 500m?
	40 seconds
8.	Approximately how many seconds did it take Joshua to run from 700m to 900m?
	50 seconds
9.	Approximately how many seconds did it take Joshua to run from 1150m to 1350m?
	20 seconds

Running Line Graphs

I can answer questions about data presented in a line graph.

A Line Graph to Show Adil and Maya's 2000m Running Times



1) Approximately how long did it take Adil to run 500m?

2) Approximately how long did it take Maya to run 750m?

3) Approximately how many metres had Adil run by 3 minutes and 40 seconds?

4) Approximately how many metres had Maya run by 2 minutes and 30 seconds?

5) Approximately how many seconds did it take Adil to run from 500m to 750m?

6) Approximately how many seconds did it take Maya to run from 1000m to 1250m?

7) Who ran 1500m in the quickest time?

8) Who ran from 500m to 1000m in the quickest time?

9) What was the difference between Adil and Maya's running times at 1500m?

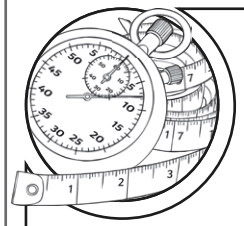
Running Line Graphs **Answers**

Question	Answer
1.	Approximately how long did it take Adil to run 500m?
	1 minute and 30 seconds
2.	Approximately how long did it take Maya to run 750m?
	1 minute and 50 seconds
3.	Approximately how many metres had Adil run by 3 minutes and 40 seconds?
	1050m
4.	Approximately how many metres had Maya run by 2 minutes and 30 seconds?
	950m
5.	Approximately how many seconds did it take Adil to run from 500m to 750m?
	70 seconds
6.	Approximately how many seconds did it take Maya to run from 1000m to 1250m?
	100 seconds
7.	Who ran 1500m in the quickest time?
	Adil
8.	Who ran from 500m to 1000m in the quickest time?
	Maya
9.	What was the difference between Adil and Maya's running times at 1500m?
	40 seconds

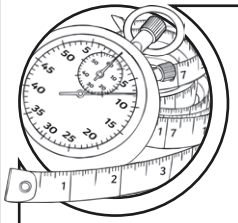
Find My Match Running Line Graphs Cards

Hand out the shuffled question and answer cards for the line graph shown on the presentation.

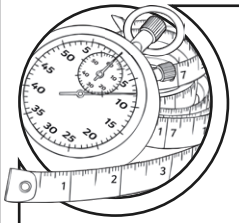
Move around the classroom to find the person with your matching card.



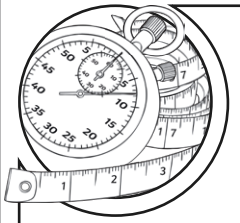
How many minutes did it take Megan to run 500m?



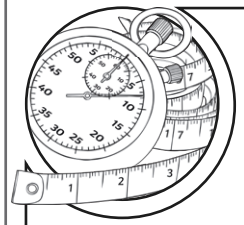
How many metres had Megan run by 8 minutes?



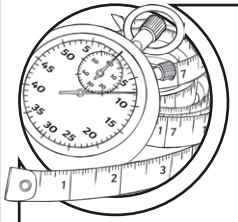
How many minutes did it take Megan to run from 500m to 1200m?



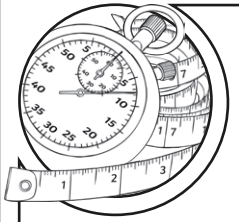
How far did Megan run from minute 5 to minute 10?



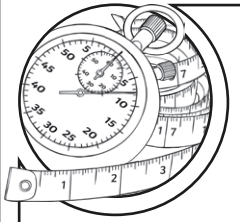
How many minutes did it take Megan to run 1200m?



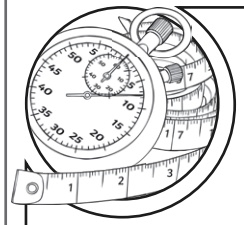
How many metres had Megan run by 14 minutes?



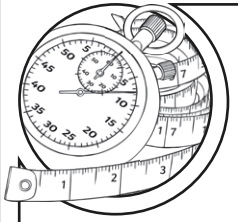
How many minutes did it take Megan to run from 900m to 1600m?



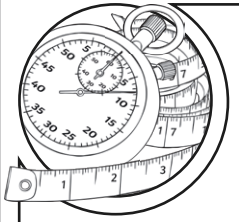
How far did Megan run from minute 10 to minute 15?



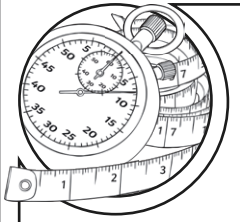
How many minutes did it take Megan to run 1600m?



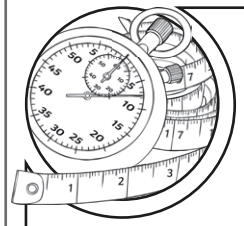
How many metres had Megan run by 23 minutes?



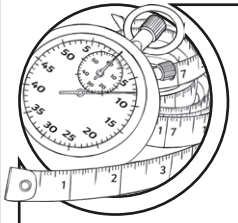
How many minutes did it take Megan to run from 400m to 900m?



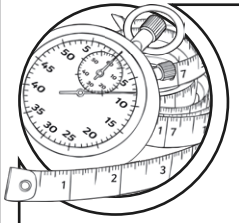
How far did Megan run from minute 14 to minute 20?



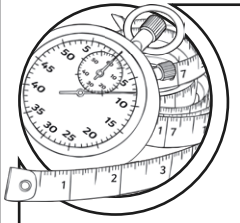
How many minutes did it take Megan to run 2700m?



How many metres had Megan run by 28 minutes?



How many minutes did it take Megan to run from 2000m to 3000m?



How far did Megan run from minute 5 to minute 7?

25 minutes

15 minutes

10 minutes

5 minutes

3000m

2400m

1500m

900m

8 minutes

4 minutes

7 minutes

5 minutes

300m

500m

400m

700m

Regent Studies | www.regentstudies.com

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Statistics | Running Line Graphs

I can answer questions about data presented in a line graph.		
I can interpret data in tables and line graphs.		
I can identify the features of a line graph.		
I can answer comparison, sum and difference questions about data presented in a line graph.		

Regent Studies | www.regentstudies.com