L.O – To know how to draw an accurate time-distance graph (Option C) 22.4.20
S.C. I can create a time-distance graph that tells a story accurately.

Key vocabulary: Try to use these words in your discussion today.
Variable, time, distance, gradient, constant, stationary, realistic, axis.

Hello Year 6! This week in English you are studying stories. Yesterday in Maths you learnt how graphs can also tell stories when using the variables TIME and DISTANCE. Today it's your turn at creating graphs that tell a story. Watch the video before you start if you can. Good luck!

VERY useful video: https://www.youtube.com/watch?v=mMHlhmZ10G8

Task 1
Today you will be drawing your own time-distance graphs. They must be REALISTIC!! This means that the journey time and distance achieved are accurate and true to life.

Which of these are statements are REALISTIC and which are not REALISTIC? Record 'Realistic' or 'Not realistic' in your book.

(a) Mr. Whiting running the 100 metres in 5 seconds.
(b) Mr. Whiting walking 100 metres in 30 seconds.
(c) Mr. Whiting driving 120 miles in 1.5 hours.
(d) Mr. Whiting cycling 80 miles in 40 minutes.

Task 2

It is important that you check that the story told by the lines on a time-distance graph is REALISTIC.

Only one of the story descriptions below of this graph is REALISTIC and accurate?
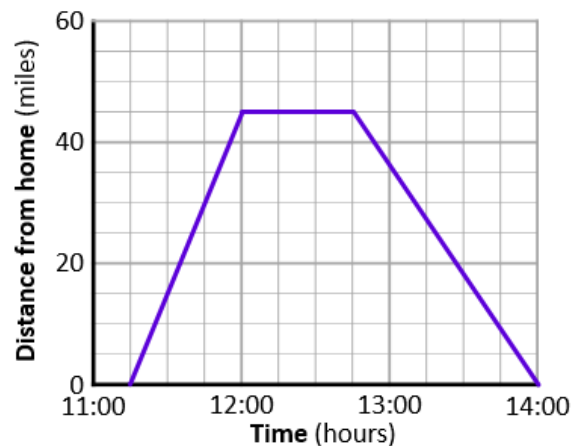
Can you work out which one? A, B, or C?

(a) Mr. Whiting leaves his house on his bicycle at 11.15 a.m. and arrives at his parent's house at 12.00. He enjoys lunch and a nice of tea before leaving to go home at 12.45 p.m. He then gets back on his bicycle and rides home arriving at 2p.m.

(b) Miss Orson leaves home at 11.20 a.m. on her motorbike. She drives to a friend's house outside of London to collect a jacket she left behind on a previous visit. While at her friend's house she has lunch and a chat. Unfortunately, when returning to her motorbike, she finds that it has been stolen! Disaster! She needs to reach home for a very important meeting by 2p.m! Thankfully her friend lends Miss Orson a bicycle and she cycles home at 12.45p.m. before arriving just in time at 2p.m.

(c) Miss Martens is looking forward to a holiday in Spain. She leaves her home at 11.15 a.m. in her car and drives for 45 miles to London Stansted Airport arriving at 12.00. She is looking forward to spending a lot of time eating well and sunbathing on the Costa Del Sol. Unfortunately, when she arrives at the airport at 12.00 she realises she has left her passport at home. Disaster! To make things worse her car won't start! She leaps out of her car and jumps on a coach that departs at 12.45 p.m. back to London. Thankfully the coach station is right next to her house; so she arrives safely home at 2 p.m. Meanwhile back at Stansted Airport her plane has taken off and left her behind! (Never mind she got a plane later that evening!)

Task 3   Drawing a time-distance graph

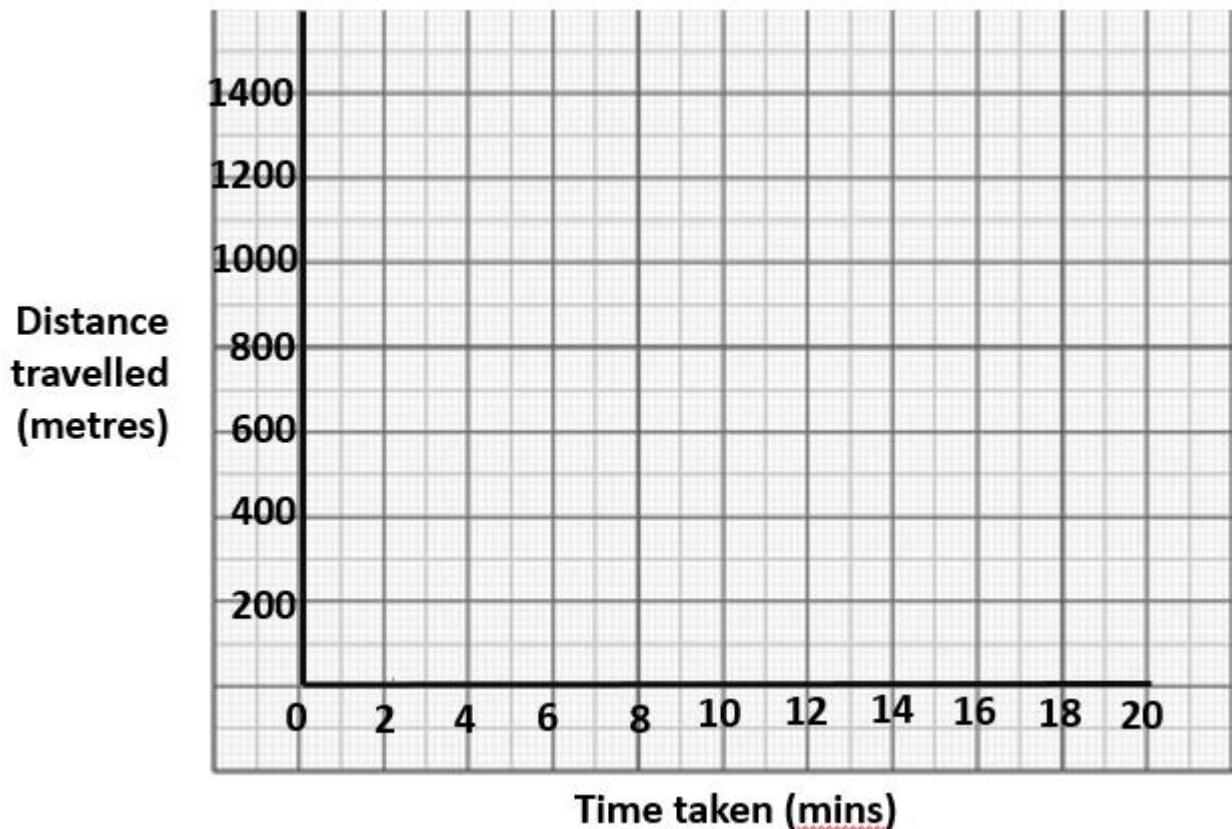Here is the story of Bart's journey home. You can decide whether this journey is realistic or not!

Can you draw a time-distance graph using the information below to help you?
Either cut out the graph or draw it in your maths book. Draw the line VERY precisely.

1. *Bart runs 250m away from home which takes 2 minutes.*
2. *He then jumps on his skateboard and takes 3 mins to dodge his way 550m through a crowd of people*
3. *Bart jumps off at Kwik-E-Mart store (shop) and stops for a chat with Apu for 5 minutes.*
4. *He then walks towards home for 150 metres taking him 2.5 minutes.*
5. *Finally, he jumps back on his skateboard and travels back home. The whole journey took him 20 minutes.*

| **Graph showing Bart's skateboard journey** |

Distance travelled (metres)

1400
1200
1000
800
600
400
200

0 2 4 6 8 10 12 14 16 18 20

Time taken (mins)

Task 4
Now it's your turn to draw your own graph. Your graph should:

1. Tell a realistic short story of 2 characters on a journey like the Olympic runners in yesterday's story. It might be a familiar story like the Hare and the Tortoise (see right) or a story you make up. They can walk, run, drive, or take public transport!

2. Show travel time and distance that makes sense.

3. Use one of the graph templates on the next pages. (Either cut it out or draw your own in your maths book). Check which works best for you but CHALLENGE yourself!

4. State whether **TIME** is seconds, mins, hours, or days.

5. State **DISTANCE** travelled as cm, metres, km, or miles.

6. Have a TITLE explaining what the graph is showing.

7. Have a half a page description of your story making sure you describe the time and distance of the journey throughout including when your character is stationary.

Tortoise
Hare

Distance (m) from start line

600

400

200

0

2 3 4 5 6 7 8

Time (minutes)

Distance from home ( )

11:30 12:00 12:30 13:00 13:30

Time

Distance from house ( )

140
120
100
80
60
40
20
0

0 10 20 30 40 50 60 70 80

Time taken ( )