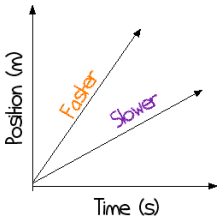
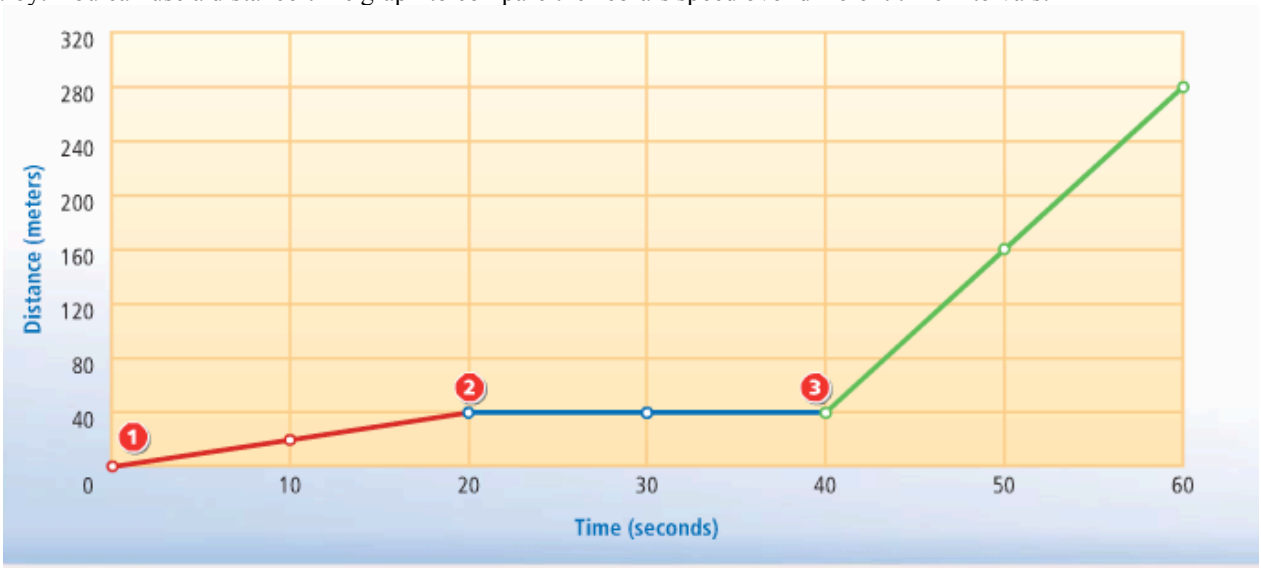
NOTES: POSITION-TIME GRAPHS



- Show an object's position at a given time
- Position or _____ on ____ -axis
- Time on ____ -axis
- An object moving at a _____ speed creates a _____ line.
- The _____ an object moves, the _____ its slope.
- A flat line means the object's position is _____, or the object has _____.
- A line that slopes downwards means the object is _____
- Most importantly, these graphs are used to calculate an object's _____.

$$\text{Slope} = \frac{\text{Change in Position}}{\text{Change in Time}} \qquad \text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

Interpret a Distance-Time Graph: A zebra's speed will change throughout the day, especially if a hungry lion is nearby. You can use a distance-time graph to compare the zebra's speed over different time intervals.

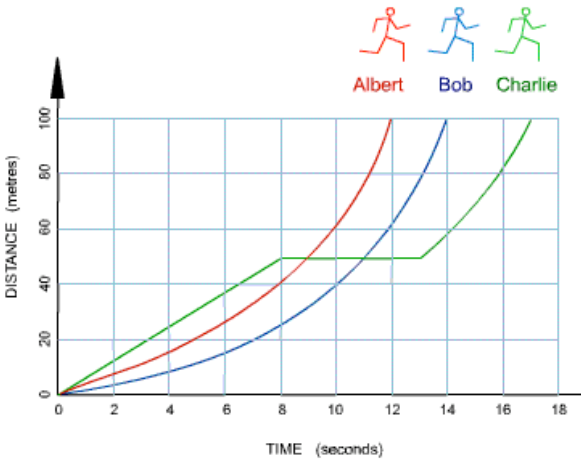


1. When the zebra is walking, its distance from its starting point increases. You can see this motion on the graph as a climbing line.
2. When the zebra stops to graze, it no longer changes its distance from the starting point. Time, however, continues to pass. Therefore, the graph shows a flat, or horizontal, line.
3. As soon as the zebra notices the lion, it stops grazing and starts to run for its life. The zebra is covering a greater distance in each time interval than it was before the chase started, so the line is steeper.

1. How far does the zebra walk in the first 20 seconds? _____
2. How long does the zebra rest for? _____
3. What total distance does the zebra travel? _____
4. During what time interval did the zebra travel the fastest? _____
5. What is the speed of the zebra during the time interval from 0 seconds to 20 seconds? _____
6. What is the speed of the zebra during the time interval from 40 seconds to 60 seconds? _____

Interpret a Distance-Time Graph #2

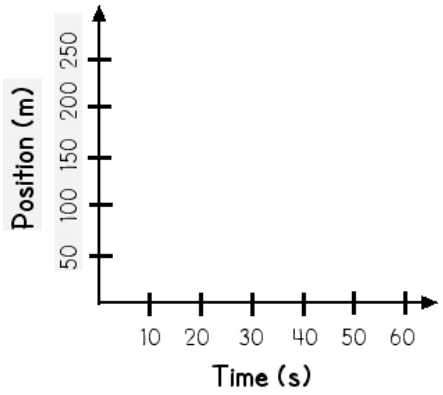
1. Which runner won the race? _____
2. Which runner stopped for a rest? _____
3. How long did he stop for? _____
4. How long did Bob take to complete the track? _____
5. Calculate Albert's average speed.



Drawing Position-Time Graphs

Your friend is training for a track meet and wants to know if she is running at a constant speed. You mark the track in 50-meter increments record her time. **Create a position-time graph using her data.**

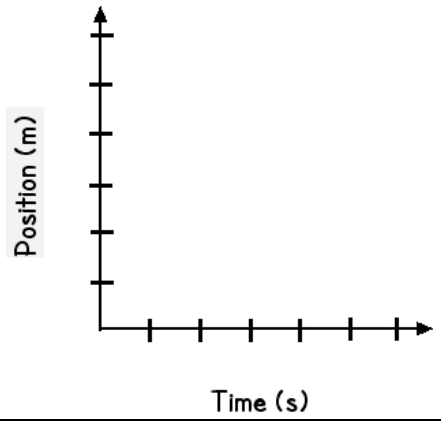
Time (s)	Position (m)
0	0
10	50
20	100
30	150



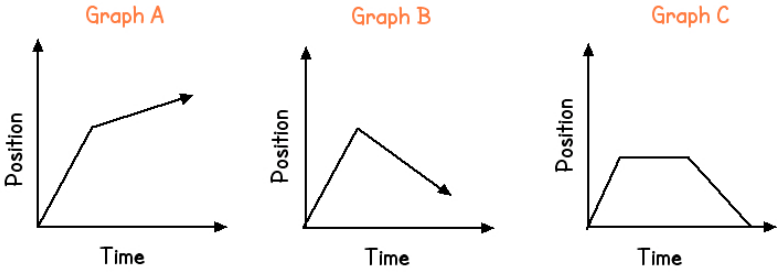
1. What is her average speed?
2. Is she running at a constant speed? How do you know?

The data table shows the position and time of Snookie running down the beach. **Make a graph of the data and use it to calculate her speed.**

Time (s)	Position (m)
0	0
2	6
4	9
6	12
8	15
10	18



1. What is her average speed?
2. Is she running at a constant speed? How do you know?



Interpreting Position-Time Graphs Without Numbers: Describe the motion of the 3 graphs.