

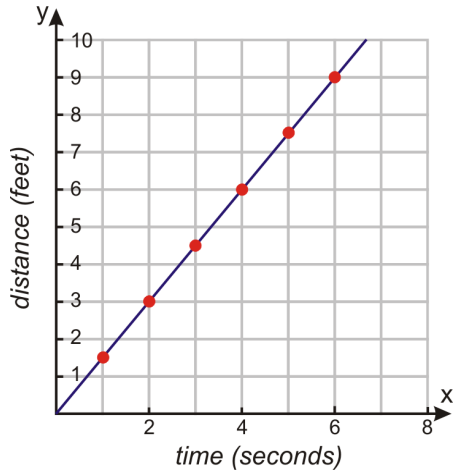


Making and Interpreting Distance-Time Graphs

Engage

Directions:

- 1. Look at the graph below.
- 2. Answer the questions.



Time is always plotted along the X-axis and Distance is always plotted along the Y-axis. Time is usually in seconds but can also be in minutes or hours. Distance is usually in meters but can be in feet or inches.

Questions:

- 1. What is the label for the x-axis? _____
- 2. What is the unit on the x-axis? _____
- 3. How many seconds are recorded on the graph? _____
- 4. What is the label for the y-axis? _____
- 5. What is the unit on the y-axis? _____
- 6. How many feet are recorded on the graph? _____
- 7. What distance was traveled after 2 seconds? _____
- 8. How long did it take the object to travel 9 feet? _____
- 9. What is missing from this graph? _____



Explore

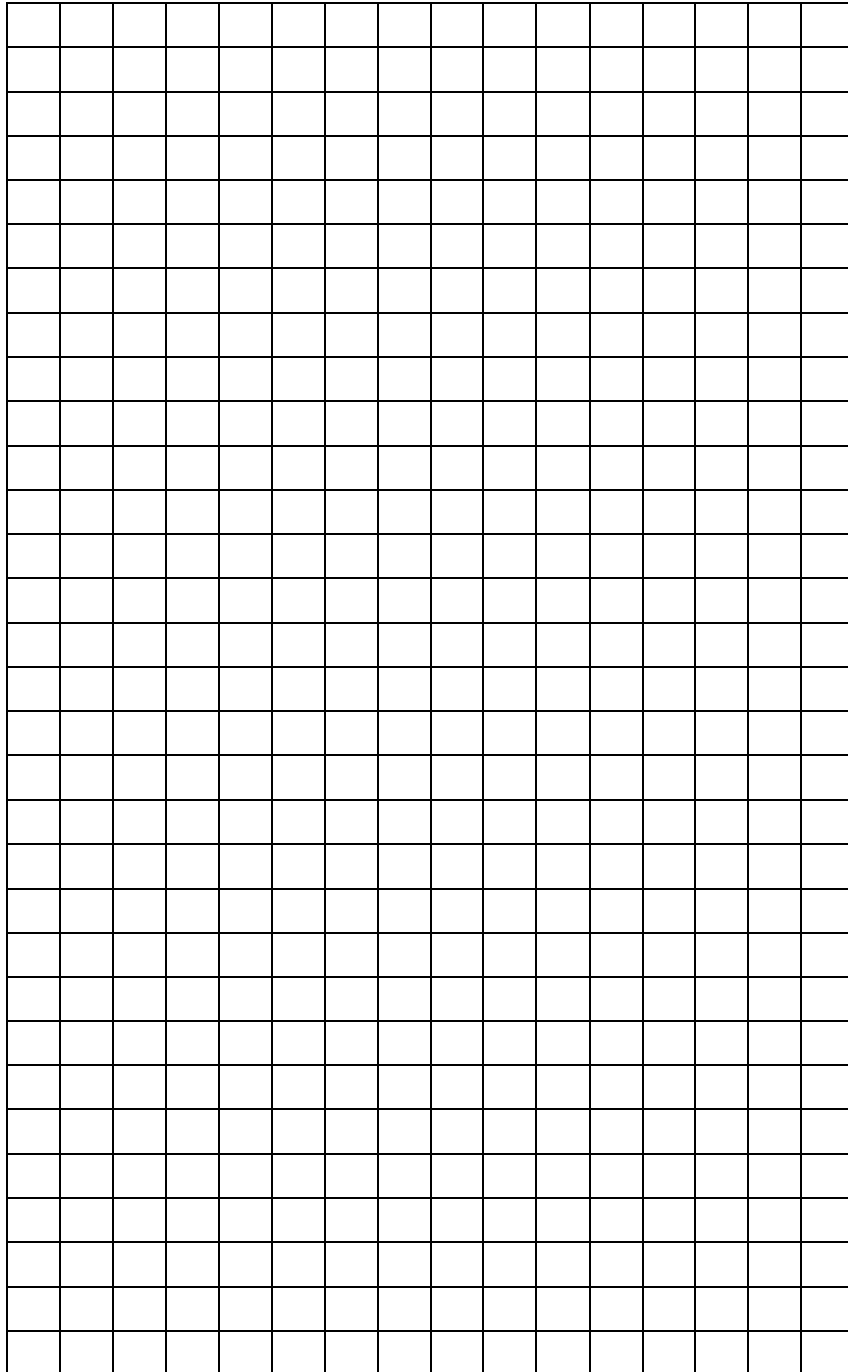
Materials: timer, notebook, pen/pencil, colored pencils or markers,

What To Do:

- 1. You and a partner will choose whose 1st three classes you will walk in this activity.
- 2. Both of you will walk the route of the class schedule and count the number of strides you take to get from your locker to the class and back again.
- 3. While one person is counting, the other will be timing how long it takes to get from one place to another. Don't zero the time. Keep it going for a running total.
- 4. Be sure to record the amount of time in each class period.
- 5. Look at the example your teacher shows you. Ask questions if you are confused.
- 6. When you are finished, graph the data you have collected.

Location	Time (in minutes)	Distance from locker in strides
At Locker		
Locker to first class		
First class		
First class back to locker		
Locker to second class		
Second class		
Second class to locker		
Locker to third class		
Third class		

Use the long side of the next page to place the time and the short side to place the distance.



7. Trace over the horizontal lines with a red color.
8. Trace over the diagonal lines with a blue color.
9. Put a slash mark (/) over the diagonal lines that show the time you spent going back to the locker.

Questions:

1. What were you doing during the time of the red horizontal lines? _____
2. What do the red horizontal lines represent on a graph? _____
3. What were you doing during the time of the blue diagonal lines? _____
4. What do the blue diagonal lines represent on a graph? _____
5. What were you doing during the time of the blue diagonal lines with the hatch marks? _____
6. What do the blue diagonal lines with the slash marks represent on a graph? _____
7. Why might some groups' diagonal lines rise more steeply when compared to other groups? _____
8. Suppose you and your friend have the exact same class schedule. Would your time-distance graphs look identical? _____ Why or why not? _____

Instructions for the next page.

DO NOT Glue until cut out.

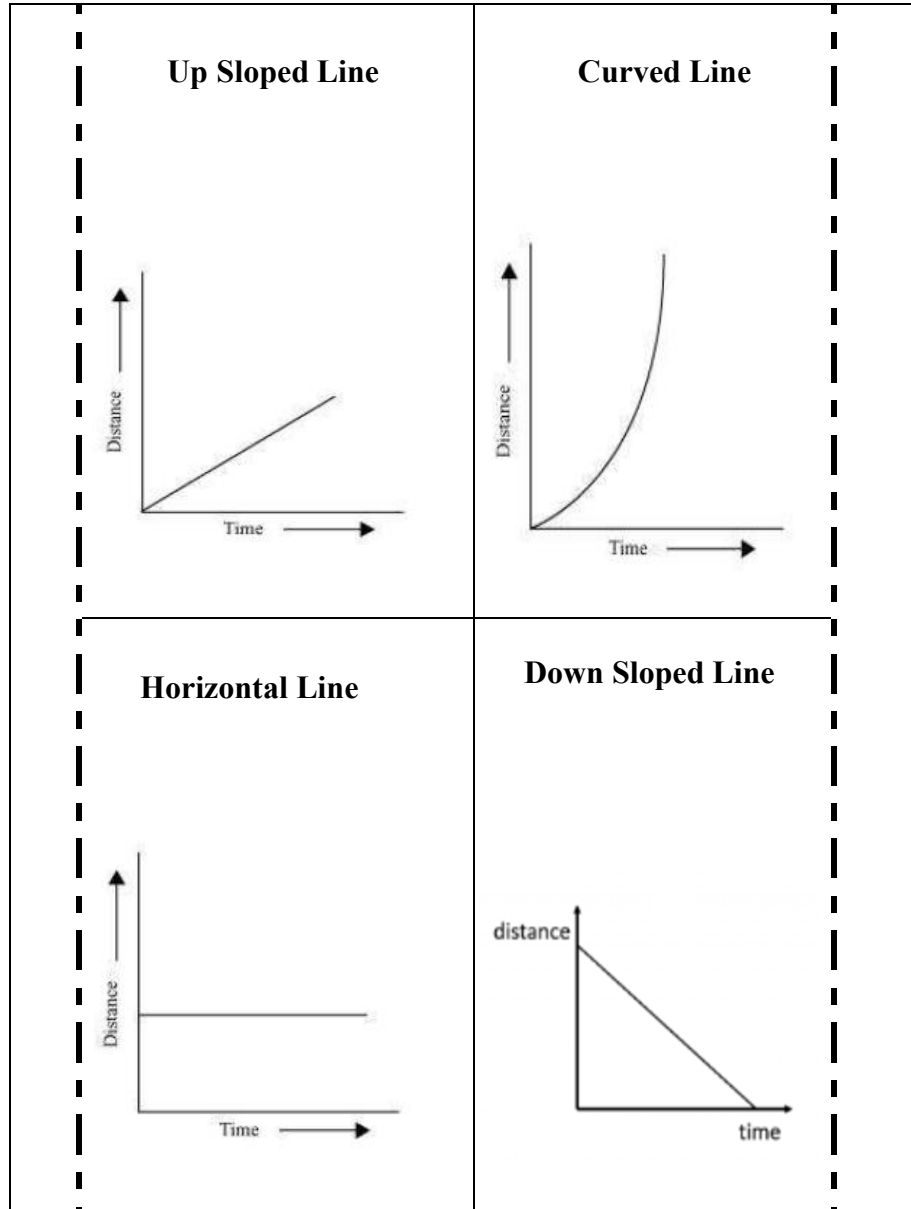
Cut on the **solid lines**.

Place glue under the anchor tabs

Glue in your notebook



Explain

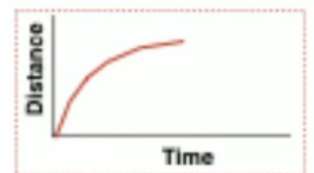
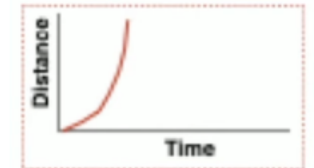
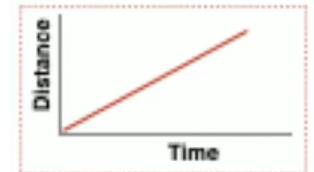


Elaborate



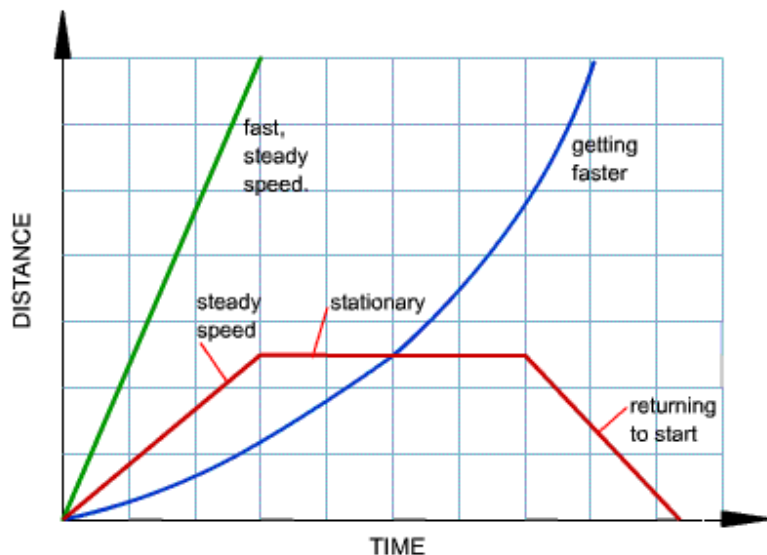
1. Watch the video “Motion Graphs: Interpreting distance and time graphs” from <https://www.youtube.com/watch?v=JGa4bz1sUIM>
2. Fill in the blanks as you watch.

1. A _____ line shows constant speed.
2. The faster the speed, the _____ the slope.
3. A downward _____ indicates a return back to _____.
4. Curving _____ shows increasing _____.
5. _____ down shows _____ speed.
6. A straight _____ line shows an object is _____ moving.
7. Pause the video and draw a line to the correct graph. Restart the video and check your work.



- A. No motion
- B. Increasing speed
- C. Constant speed
- D. Decreasing speed

The shape of the line will tell you what is happening to the motion of the object. Look at the graph below.



Questions:

1. What is the shape of the line if the object is moving at a steady speed? _____
2. What is the difference between the line that shows a steady speed and the one that shows the fast, steady speed?

3. What is the shape of the line if the object is stationary?

4. What happens to the line if the object is returning to start?

5. Is the object speeding up, slowing down or stationary at this time? _____
6. If the object is getting faster, how does the shape of the line change? _____

Name _____ Period _____

Exit Ticket

Making and Interpreting D-T Graphs

1. What does a horizontal line represent on a distance-time graph?
 - A. Slow movement
 - B. Going back to start
 - C. No movement
2. What does a diagonal line rising steeply represent on a distance-time graph?
 - A. No movement
 - B. Fast movement
 - C. Slow movement
3. What does a diagonal line going back to zero represent on a distance-time graph?
 - A. Slow movement
 - B. Going back to start
 - C. No movement
4. On which axis is time placed on a distance-time graph?
 - A. X-axis
 - B. Y-axis
 - C. Z-axis
5. On which axis is distance placed on a distance-time graph?
 - A. X-axis
 - B. Y-axis
 - C. Z-axis