Reading Graphs (Carefully)

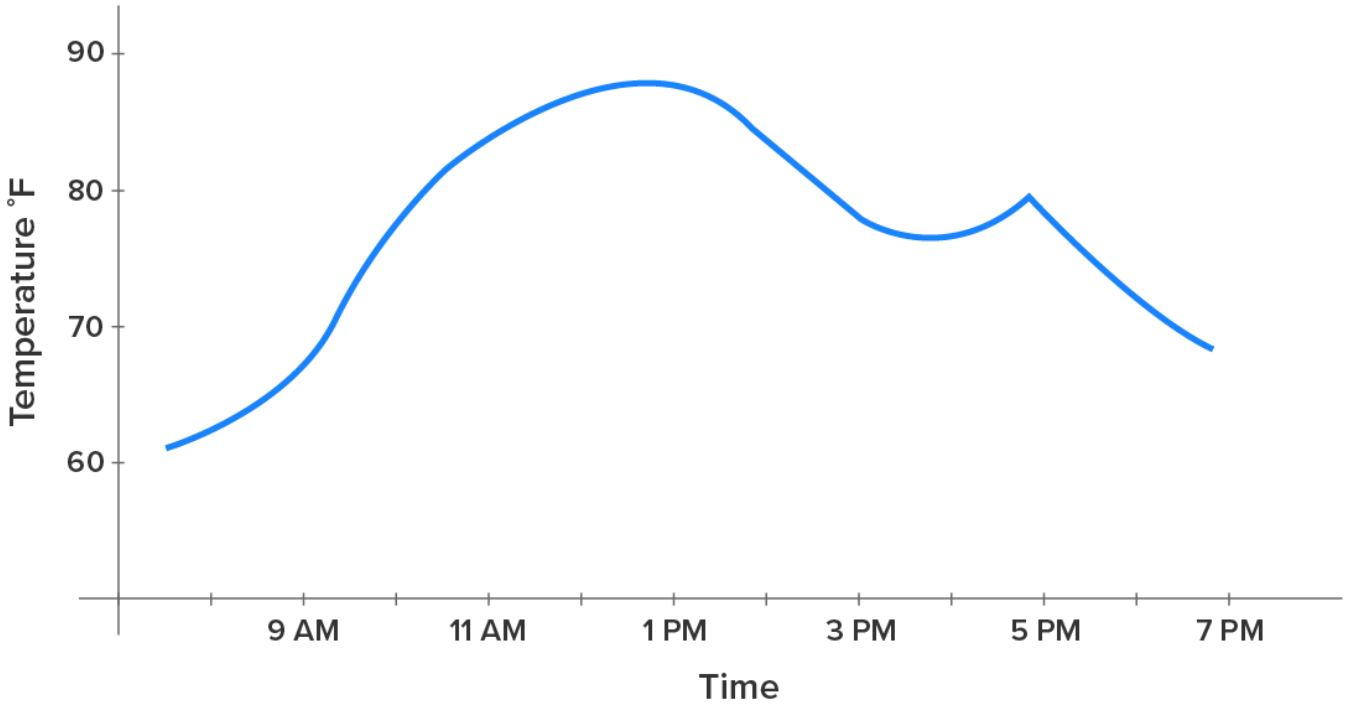
by Sophia

WHAT'S COVERED

In this lesson, you will investigate the different kinds of information that can be extracted from graphs. Specifically, this lesson will cover:

1. Information Related to a Graph

Consider the graph below, which shows the temperature throughout the day.



1a. Using Specific Points on a Graph

Using the graph above, we can extract the following information by examining points on the graph:

- At 9 AM, the temperature is roughly 65°F.
- The high temperature of the day was recorded at 12:30 PM and was about 87°F.

1b. Using the Shape of a Graph

Using the same graph, we can extract the following information by observing the shape of the graph.

- The temperature appears to have risen most sharply at 9 AM.
- The temperature dropped after 1 PM, but then rose slightly around 3:30 PM, then started falling again at 5 PM.
- At 5 PM, the graph started falling sharply and suddenly. It's possible that a cold front came through, it started raining, or a storm came through.

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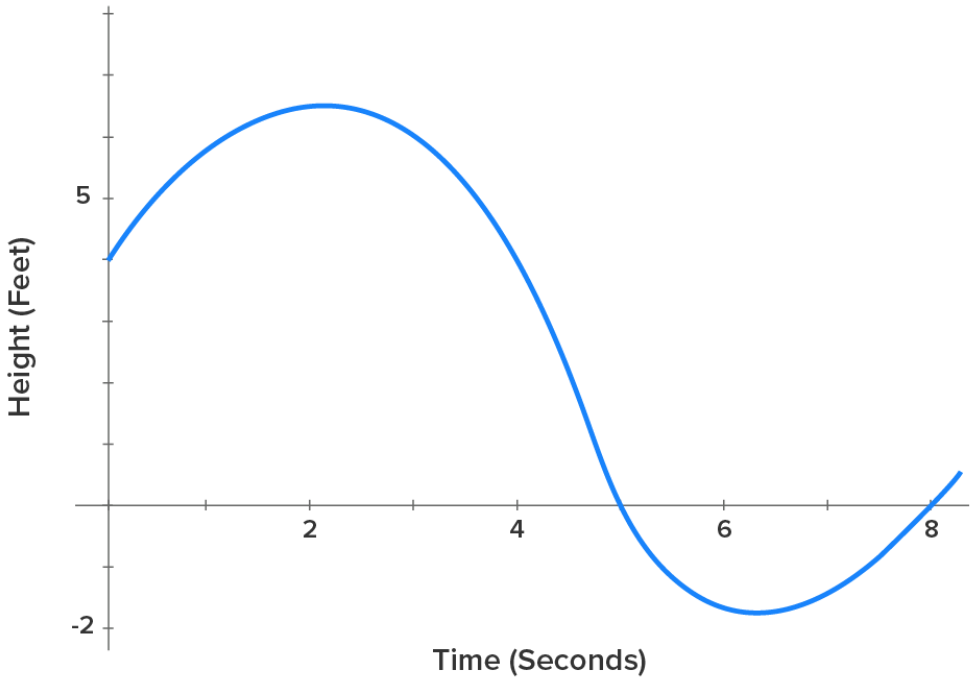
2. Applications of Graphs to Real-Life Situations

TRY IT

Consider this graph, which shows the height of a diver after jumping off the diving board.



How high was the diving board? +

4 feet (the starting point)

How long after jumping did the diver strike the water? +

5 seconds (the first x-intercept)

How far underwater did the diver go? +

About 1.5 feet (the lowest y-value)

When did the diver resurface? +

8 seconds

After jumping off the diving board, at what times was the diver descending? +

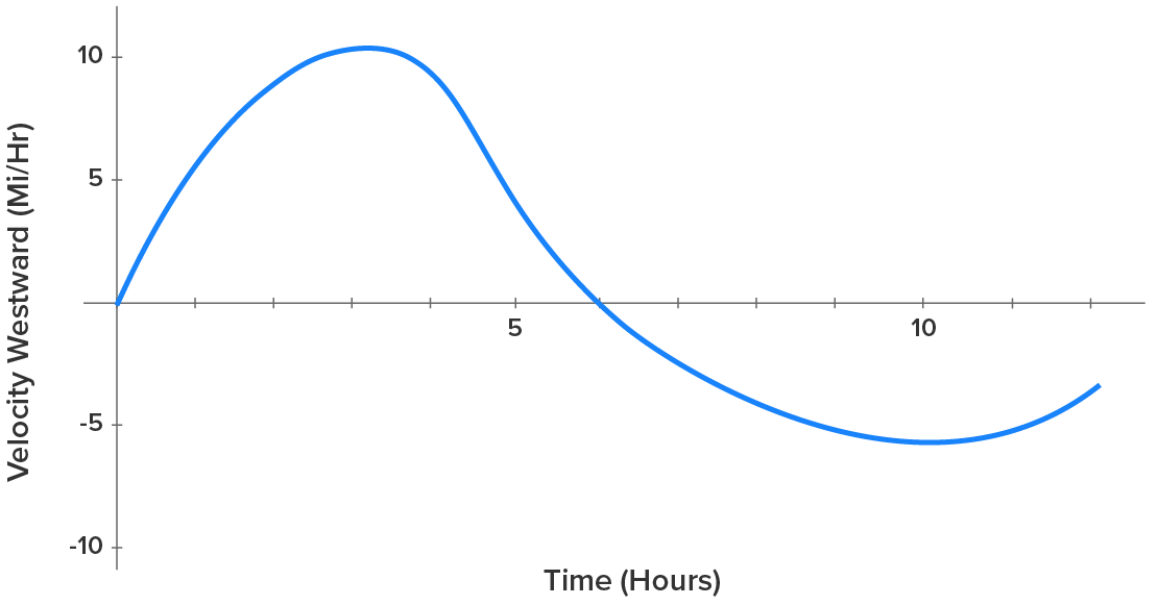
Between 2 and 6.5 seconds

How long was the diver underwater? +

The diver entered the water after 5 seconds and surfaced again after 8 seconds, so this means that the diver was underwater for 3 seconds.

TRY IT

The graph below shows the velocity (heading west) of a boat heading away from St. Thomas (to the west).



When is the boat travelling fastest? +

Around 3 hours, when the graph is at its peak. It looks like the velocity is about 10 mi/hr.

What does a negative velocity mean? +

In this case, since a positive velocity means the boat is heading west, a negative velocity means the boat is heading east.

When is the boat furthest from St. Thomas? +

After 6 hours, the velocity transitions from positive to negative, which means that the boat was at its furthest point west before heading east again.

SUMMARY

In this lesson, you learned that graphs are very useful since they are a visual representation of a situation. They can be created quite easily using technology, so it is important to consider many aspects of the graph. You learned how to extract **information related to a graph** by **using specific points on a graph** and **using the shape of a graph**. You also explored several **applications of graphs to real-life situations** to apply your knowledge of the different kinds of information that can be extracted from graphs.