Activity 1: Walking Graphs

Answer the following questions based on your experiences in the Student Activity: Walk This Way.

1. How did you know where to start walking for each graph?

2. How did you know how long to walk for each segment?

3. How did you know when to walk toward the motion detector? Use the words “time” and “distance” in your answer.

4. How did you know when to walk away from the motion detector? Use the words “time” and “distance” in your answer.

5. How did you know when to walk slowly?

6. How did you know when to walk quickly?

7. How did you know when to stand still?
Activity 2: Walking More Graphs

Practice walking the following graphs using a motion detector and a graphing calculator. Describe the walk that you used to produce each graph.

1. 
2. 
3. 
4. 
5. 
6.
Activity 1: Matching Velocity Graphs

Practice walking the following graphs using a motion detector and a graphing calculator. Describe the walk that you used to produce each graph.

a. 

b. 

c. 

d. 

e. 

(0, 0) Time

(0, 0) Time

(0, 0) Time

(0, 0) Time
1. How did you know when to walk slowly?

2. How did you know when to walk quickly?

3. How did you know when to slow down?

4. How did you know when to speed up?

5. How did you know when to walk away from the motion detector?

6. How did you know when to walk toward the motion detector?

7. How did you know when to stop?

8. How did you know where to start walking for each graph?

9. How did you know what speed to start walking?
Activity 2: Connecting Distance and Velocity Graphs

Read the following directions and sketch your prediction of the resulting graphs. Then collect the data (for about 4 seconds.)

1. Start about 1.5 feet in front of the motion detector and walk away quickly for about 2 seconds. Stand still for 1 second and then walk toward the motion detector slowly for the remaining time.

Predict:

a. Distance versus Time

b. Velocity versus Time

The actual results:

c. Distance versus Time
d. Velocity versus Time

Label the following sections in the graphs above:

A. The walker is standing still.
B. The walker is slowing down.
C. The walker is speeding up.
D. The walker is traveling at a quicker rate.
E. The walker is traveling at a slower rate.
2. Start about 5 feet in front of the motion detector and walk toward the motion detector slowly for about 1 second. Stand still for 1 second and then walk away from the motion detector quickly for the remaining time.

Predict:

a. Distance versus Time

b. Velocity versus Time

The actual results:

c. Distance versus Time
d. Velocity versus Time

Label the following sections in the graphs above:

A. The walker is standing still.
B. The walker is slowing down.
C. The walker is speeding up.
D. The walker is traveling at a quicker rate.
E. The walker is traveling at a slower rate.
Reflect and Apply

Make up two different stories based on the graph below. One story should be based on the graph representing distance over time. The other story should be based on the graph representing velocity over time.

Story for distance versus time:  

Story for velocity versus time: