Location	Distance (cm)	Time (seconds)	Instantaneous Speed	Average Speed (total D / total s)
Point A → B		3 seconds		
Point B→ C		6 s		
Point C→ D		9s		
Point D→ E		12s		
Point E→ F		15s		
Point F→ G		18s		
Point G→ H		21s		
Point H→ I		24s		
Point I→ J		27s		
Point J→ K		30s		

Total Trip Values:

Total Distance = _____
Total Displacement = _____

Total Time = _____

Average Speed = _____

Location	Distance (cm)	Time (seconds)	Instantaneous Speed	Average Speed (total D / total s)
Point A → B		3 seconds		
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Point J→ K		30s		

Total Trip Values:

Total Distance = _____
Total Displacement = _____

Total Time = _____

Average Speed = _____

Warm-up:

Enter this week's schedule into your planner.

Acceleration Investigation

Purpose:

To identify points of acceleration on a motion graph.

Skip a line here. . .

Investigation:

Acceleration is. . . . . (3 ideas from table)

Skip a line or two.

Hypothesis:

If we speed up during the path, then our data will reflect acceleration changes.

Skip a line or two.

Experimental Procedure:

1. **The runner will put a marker every 3 seconds on a path until we use up the 11 markers. There will also be one at the beginning of the path.**

2. **During the 30 second run, the runner will walk, jog, stop and run at least once each.**
3. **We will measure each distance between markers.**
4. **We will calculate instantaneous speed and average speed.**
5. **We will graph the motion of the path.**

Results:

Location	Distance (cm)	Time (seconds)	Instantaneous Speed	Average Speed (total D / total s)
Point A → B		3 seconds		
Point B→ C		6 s		
Point C→ D		9s		
Point D→ E		12s		
Point E→ F		15s		
Point F→ G		18s		
Point G→ H		21s		
Point H→ I		24s		
Point I→ J		27s		
Point J→ K		30s		

Total Trip Values:

Total Distance = _____ Total Displacement = _____

Total Time = _____ Average Speed = _____

3 Graphs here:

a. **Draw your pathway you ran.**
b. **Distance (y) vs. time (x)**
c. **Speed (y) vs. Time (x)**

<u>Conclusion</u>: (answer questions then complete conclusion paragraph)

1. **How did you know you were changing speeds?**
2. **At which points were you acceleration and how do you know?**
3. **If a bike rider goes from home to the park, up a hill, to the store and then home, where is it accelerating 3 points minimum).**

Conclusion paragraph: