Investigating Motion

Materials: Stop watches, meter sticks, tape and 5 meters of walking space

Problem: How does position affect how we view the motion of an object?

Science Question: Will your position as observer effect how you see an object move?

Hypothesis: (4 PTS) If I observe a walker from different positions, then the motion of the walker will
_____ because _____
_____

Data: (16 PTS)

Walking Time (seconds)	Starting Position I observed _____	Finish Position I observed _____	Right Sideline I observed _____	Left Sideline I observed _____
Trial 1				
Trial 2				
Trial 3				
Average Walking Time (seconds)				

(20 PTS)

FRAME OF REFERENCE (OF OBSERVER)	OBSERVATIONS: WRITTEN DESCRITPTION, DAWING W/ LABELS OF MOTION OF WALKER
STARTING POSITION (start line)	
FINISH POSITION (finish line)	
RIGHT SIDELINE (when facing start line)	
LEFT SIDELINE (when facing start line)	

Analysis: ALL ANSWERS MUST BE WRITTEN WITH DETAIL AND IN COMPLETE SENTENCES!

1. Look at the average walking times in your first data table. (5 PTS EACH)
   a. Are the times for each **"FOR"** about the same or are they different? **Explain** your thinking.

   b. Should the times for each **"FOR"** be the same? Explain your thinking.

   c. If your times for each **"FOR"** were different, why were they different? Explain your thinking.

2. Look at your observations in your second data table. Did you see the exact same motion from each **"FOR"**? Why or why not? Explain your thinking. (5 PTS)

3. Compare your data with others in your group. Explain some of the similarities and differences. (8 PTS)

SIMILARITIES	DIFFERENCES

4. Identify the independent variable. (1 PT)_____

5. Identify the dependent variable. (1PT) _____

Conclusion: MUST PROVIDE DETAILS AND BE IN COMPLETE SENTENCES!

Scientists often times make claims based on their research. A **claim** is the concluding statement that answers the original question. These claims are based on observations and must be supported with evidence and reasoning.

1. Make a claim that answers the science question: Will your position as observer effect how you see an object move? Support your claim using your quantitative data (time) and your qualitative data (observations). Remember you are thinking and writing like a scientist. Provide details! (15 PTS)

2. Did your claim and evidence support your hypothesis? Explain. (15 PTS)