Name: _____ Date: _____ Period:_____

Physical Science ***SPEED CHALLENGE LAB***

Step 1: Gather your materials!

Each team needs 4 people, 2 timers, 1 meter stick, and 3 pieces of tape (or cones)

Step 2: Create your "race" track!

Find a spot in the hallway and measure off a 10 meter race track. Use two pieces of tape to mark the middle, and end of your track. Make sure tape is at the 5 m and 10 m points on the track and you know your starting point.

Step 3: Go for it!

Three team members will need to perform the following tasks for each distance: hopping, walking backwards, and speed walking. Your team will need people with timers or stopwatches at the 5 meter and 10 meter points. Record the time it takes to perform each task.

NOTE: Speed walking is going as fast as you can without jogging or running!

Collect That Data!

Record your data from the experiment in the data table and then use your information to calculate the speed for each task and distance. You will need data from three team member's trials. Round answers to the nearest hundredth if needed. Label your answers! **Include units and show your calculations for speed and acceleration (on a separate piece of paper if needed).**

Analyze Data !

Create **distance v/s time graphs** with the data collected during the lab for each task. Put three people's data on one graph using a different color per team member. **Don't forget to label your axis and include units.**

Grading Rubric

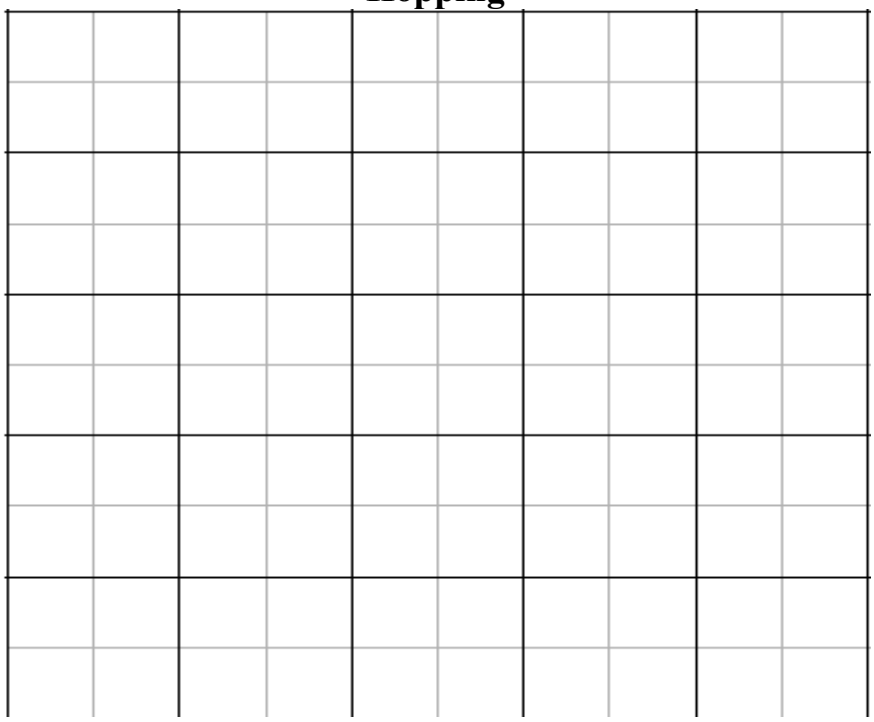
Possible Points	
9 (0.5p each)	Time on Data Tables w/ units
18 (1p each)	Speed CALCULATED on Data Tables w/ units
18 (1p each)	Acceleration CALCULATED on Data Tables w/ units
5	Hopping Graph (units, numbers, labels, 3 lines, use of space, color coded)
5	Walking Backwards Graph (units, numbers, labels, 3 lines, use of space, color coded)
5	Speed Walking Graph (units, numbers, labels, 3 lines, use of space, color coded)
2 (1p each)	**Think About It!** Questions 1 & 2
9 (3p each)	**Think About It!** Questions 3 - 5
4 (2p each)	**Think About It!** Questions 6 & 7 (w/ explanation)
75	Total

Team Member: _____		**Trial 1**		
Task	**Distance**	**Time**	**Speed**	**Acceleration**
Hopping	**5 m**			
	10 m			
Walking Backwards	**5 m**			
	10 m			
Speed Walking	**5 m**			
	10 m			

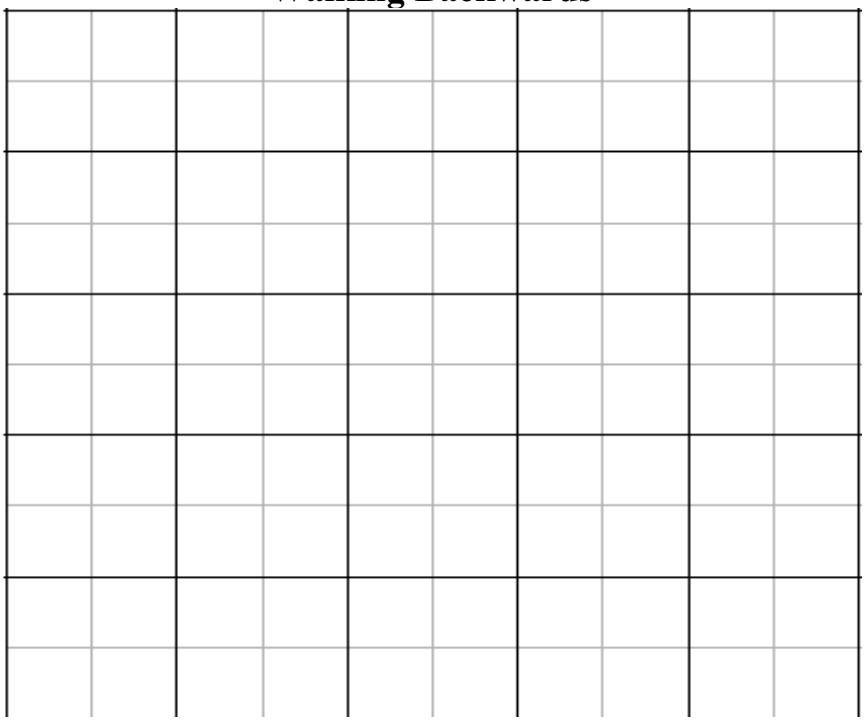
Team Member: _____		**Trial 1**		
Task	**Distance**	**Time**	**Speed**	**Acceleration**
Hopping	**5 m**			
	10 m			
Walking Backwards	**5 m**			
	10 m			
Speed Walking	**5 m**			
	10 m			

Team Member: _____		**Trial 1**		
Task	**Distance**	**Time**	**Speed**	**Acceleration**
Hopping	**5 m**			
	10 m			
Walking Backwards	**5 m**			
	10 m			
Speed Walking	**5 m**			
	10 m			

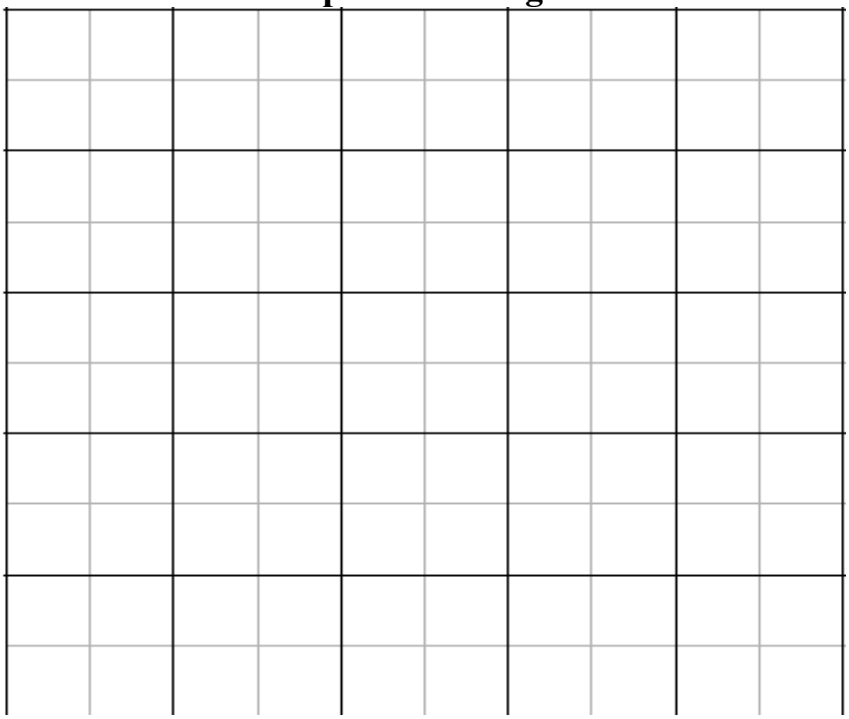
Hopping



Walking Backwards



Speed Walking



Think About It!

1. Which task and distance resulted in the fastest speed?

Task = _____ Distance = _____ Speed = _____

2. Which task and distance resulted in the slowest speed?

Task = _____ Distance = _____ Speed = _____

3. How far could you speed walk in 600 seconds based on your speed for the 10 meter trial? Show your work! (HINT use someone's speed from the speed waking section)

4. How long would it take you to hop 30 meters based on your speed for the 5 meter trial? Show your work! (HINT use someone's speed from the hopping section.)

5. How far could you travel walking backwards in 900 seconds based on your results for the 5 meter trial? Show your work! (HINT use someone's speed from the backwards section.)

6. Who/when had the highest acceleration? Why do you think this is the case?

7. Who/when had the lowest acceleration? Why do you think this is the case?