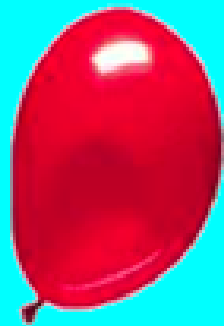




Today's Inquiry



- In the top left hand square, write the definition and formula we use to calculate speed
- Prepare for the "Toys in Motion" Lab



Stop and think...

What is motion?

A. A push or a pull

B. Any physical movement or change in position or place

C. How fast something is traveling

D. The ability to do work

Name: _____ Period ____ Date: _____

Toys in Motion

Objective: You will explore and explain the meaning of five physics vocabulary terms by conducting a scientific activity.

Vocabulary Terms to Know:

Position
Speed
Reference Point
Motion
Distance



Materials:

Data Table
3 Toys

Race Set Up
Stop Watch

Procedures:

1. Within 2 minutes, make several observations with your partners about your 2 toys. Explore how they feel, how they move, etc.
2. Your next step is to time how long it takes for each of the toys to travel 1 meter.

Here is the overview before you begin:

-In order to do this step, you will be using the "Race Set Up" shown below:



-Each team will have 2 students and each team member will have a job to do which will rotate with each toy being timed. Please fill in the data table below before your team begins the activity.

3. Start each toy at the start mark and when your team member says "GO!", release the toy and start the stopwatch.
4. When the toy reaches the finish mark, the timer stops the time and records the time.
5. You will do this 3 times per toy and record the information in the data table below.

Toy Activity Data Table 1-Who Does What?

Toy Description	Timer and Recorder	Toy Handler
1.		
2.		

Toy Activity Data Table 2-Times

Toy Description	Time A (sec or mins?)	Time B (sec or mins?)	Time C (sec or mins?)	Average Time (A+B+C = /3)
1.				
2.				

Now you need to calculate the speed for your toys.

$$\text{Speed} = \text{distance} / \text{time}$$

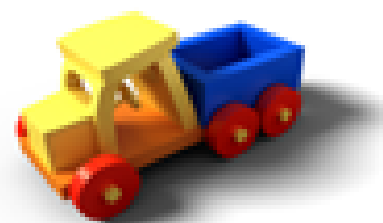
Toy Activity Data table 3-Speeds

Toy Description	Distance Traveled	Average Time	Speed (d/t)
1.			
2.			

Conclusion Questions:

Use your knowledge of physics and your observations during the activity to answer the following questions:

1. Explain how you know your toy had motion? (Use the word reference point in your explanation.)
2. What was your toy's position when you started the stopwatch?
3. What equation did you use to calculate the speed of your toys?
4. Which toy had the fastest speed? _____
5. Why do you think this toy had the fastest speed?



Stop and think...

How do you find the *Average*?

A. Multiply your trials

B. Add all your results and multiply the sum by the number of trials

C. Add all your results and divide the sum by the number of trials

D. Divide each of your findings by the number of trials

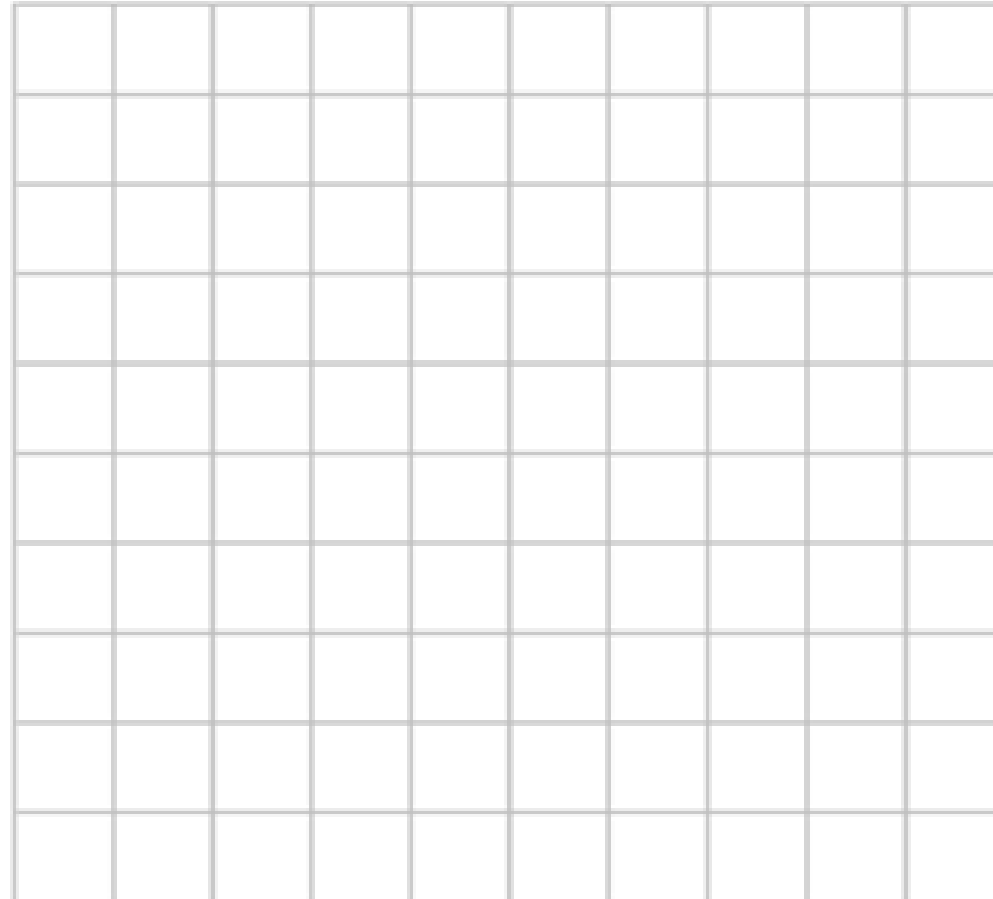
Explain how you know the toy had motion?



What was your toy's position when you started the stopwatch?

What equation did you use to calculate the speed of your toys?

Title:

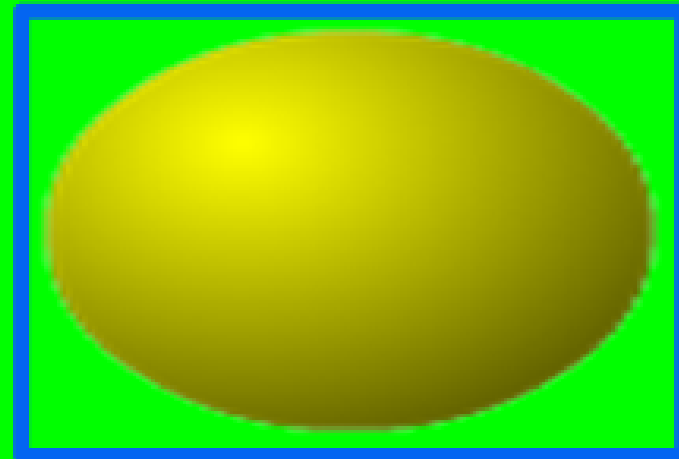
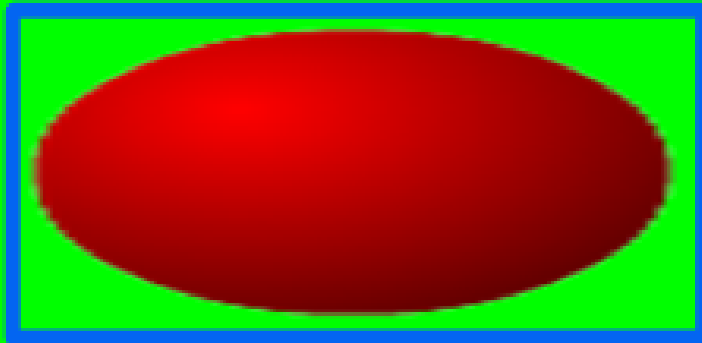
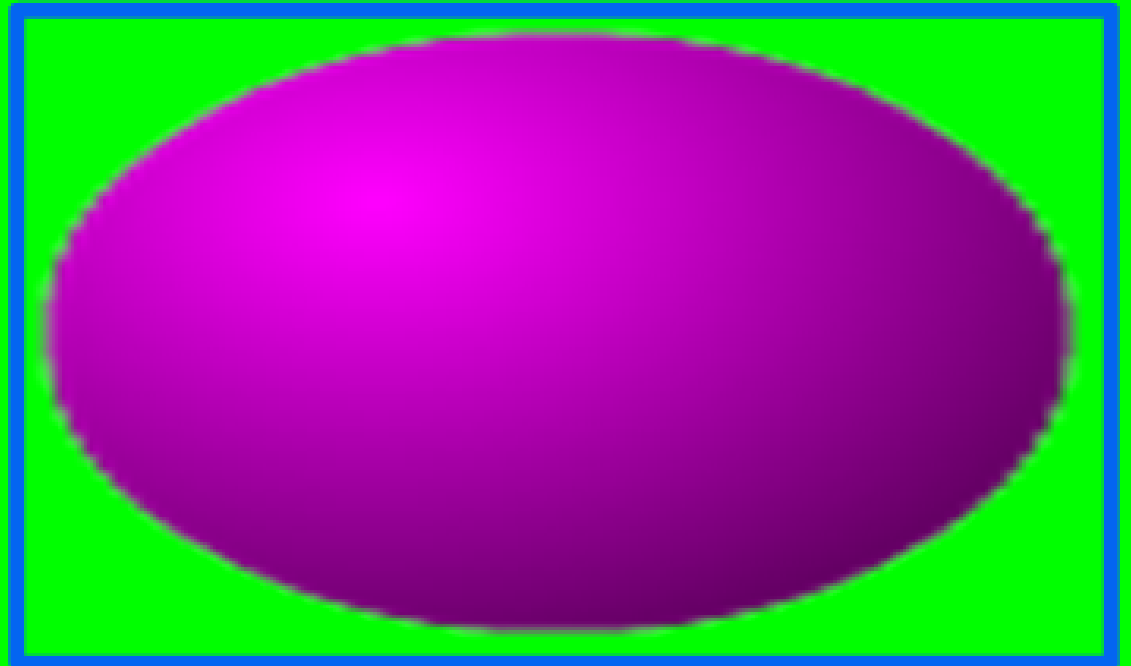


y-

x-



Speed Walkers



Graph Your Results

(graph the result of one of your shoulder partners as well to use for comparison)

