

Hot Wheels Hustle



PURPOSE

- To be able to understand, calculate, and graph the speed of a moving object.

QUESTION: Which will have the greatest speed, a matchbox car or a hot wheels car?

OBJECTIVE: Given the materials supplied, with your lab table, follow the procedure steps to determine the speed of a matchbox car and hot wheels car. Create a line graph to display your findings.

INITIAL OBSERVATIONS:

HYPOTHESIS

I think the (**Hot Wheels or Matchbox**) car will have the greatest speed because

MATERIALS

- 2 Cars (One Hot Wheels and One Matchbox)
- Ramp (60 cm whiteboard)
- masking tape
- meter stick
- 3 stopwatches (or phones)
- 4 textbooks per group

PROCEDURE

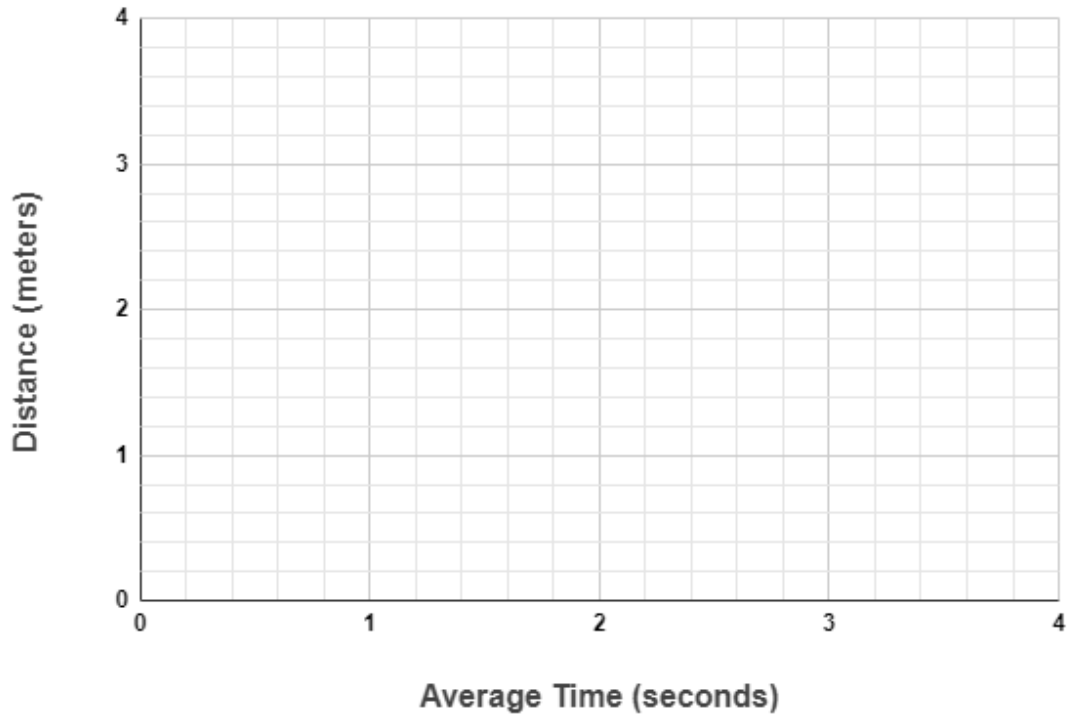
1. Clear a runway about 3 meters long in the hallway.
2. Put one end of the ramp on top off the textbooks and the other end on the floor.
3. Place a masking tape marker at 1, 2 and 3 meter distances from the top of the ramp onto the floor. Mark each meter. (The first meter mark will be 40 cm after the edge of the ramp).
4. Now measure the time required for the car to pass each meter marker. One person can launch the car, and other partners can record times. (person launching cars says GO and all recorders start timers at the same time. You may need to practice several times.
5. Record your results for the Hot Wheels on Data Table 1.
6. Record your results for the Matchbox car on Data Table 2.
7. Complete 3 trials for each car.
 - a. Calculate the average time for the toy car to pass each marker.
 - b. Calculate the average speed of the toy car as it passes each marker.
8. Calculate the speed of each car and record in the Result Data Tables.
9. Make **ONE** (x-axis time, y-axis distance) distance vs. time line graph for your data. You will have one line representing the hot wheels and one line representing the matchbox car.

DATA COLLECTION: Record data for both cars then graph the average time and distance for both cars on the graph below

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

HotWheels	TIME (s)			Matchbox	TIME (s)		
TRIAL #	1m	2m	3m	TRIAL #	1m	2m	3m
1				1			
2				2			
3				3			
AVG.TIME (s)				AVG.TIME (s)			
AVG Speed (m/s)				AVG Speed (m/s)			

Hot Wheels / Matchbox Distance Vs. Time



Legend	
Matchbox	Hot Wheels