

## PHYSICS DAY TEN!

Get Out Moving On Down Labs.....

Which factor out of everyone the class tested do you think affects toy cars rolling down ramps the most?

***Surface type, mass distribution, wheel size, shape, etc...***

Be prepared to share/show results, and explain validity concerns:

Share “answers” to Science Sleuths Day At The Races.

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Observe 4 moving objects outside, however you want...

***Smooth, inconsistent>>> change speed, direction  
Forward/backwards,  
Slow, crawling, fast***

Answer: What is motion?

***Change in position over time...***

What does it mean to measure motion? How is it done?

***We measure the direction, speed, consistency  
(acceleration), jerk, force, momentum***

How can you visually represent moving objects?

***Little lines,  
Arrows -- > length of lines is speed, arrow is direction***

What is

SPEED, *Speed = change in distance over change in time*

AVERAGE SPEED, *total D over total T, we don't care about what went on in between...*

VELOCITY,

*Speed with direction, can be positive or negative,  
Change in displacement over change in time*

DISTANCE, *start to finish, point to point, along a string, always positive... note, we don't use this much.*

DISPLACEMENT (*position*) *from start how far away, and in what direction... can be positive or negative...*

What is a Distance Time Table?

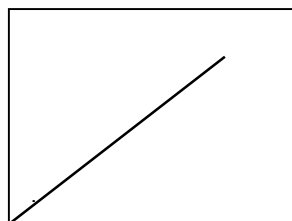
*shows total distance from start (or displacement*

**EXAMPLE)**

| X | Y |
|---|---|
| T | D |
| 0 | 0 |
| 1 | 1 |
| 3 | 3 |
| 4 | 4 |

Distance Time Graph:

*Usually it is really a displacement time graph. Time is the x, Dis is the y. So change in Dis/change in time is change in y over change in x, rise over run.... Slope is the same as speed/velocity!*



DO: Motion I sheet.....

QUIZ on Fri Sep 17: Properties, measurements,  
standards/scales, conversions, parts of a good experiment.