Objective 2: Notes 2/16/11

Matter “moves” when an unbalanced force (push or pull) is applied.

We see or feel it moving when we compare it to another object that is moving differently or not at all. This is called a “point of reference”.

Research question: What determines the “speed” an object is moving?

Fast is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slow is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Activity: Walk, jog, run!

Walk, Jog, Run… Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Objective 2

Materials:

1. 10 meter track marked with 5m middle line
2. Stop watch (t)
3. Walker, jogger, runner person
4. Notebook/paper

What to do:

1. Set up track with 1.5m before and after space to allow for acceleration and deceleration
2. Have students walk, jog or run the track while team-mate keeps track of time with the stopwatch (5m and then 10m)
3. Chart and discuss data – make a graph.

Data collection:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Motion**= change in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Distance 5 meters | Time for 5 meters | **Speed** for 5-m (m/s) | Distance  (m) | Time (10m)(seconds) | **Speed for 10-m****(m/s)** |
| Walk | 5m |  |  | 10m |  |  |
| Jog | 5m |  |  | 10m |  |  |
| Run | 5m |  |  | 10m |  |  |

Data interpretation:

Graph each motion with a different color or symbol.

* \_\_\_\_\_\_\_\_\_\_\_ is the **independent variable** and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the **dependent variable**.
* The slope of the line – amount of change in distance per unit time- is the speed!!! Cool, huh!

Aha… Write three good questions you can create from looking at your graph.

* What is a linear relationship? Does the speed of walking, jogging, or running show a linear relationship? Explain using the definition you found for this question.

Graphing distance versus time relationship - Speed is a function of distance per unit time!!