

Buggy Lab

Class 1.2

Agenda

- Basic Terminology
- Buggy Experiment
- Graphing Data
- (Board Meeting?)*

Terminology

Vector

Scalar

Origin

Position

Distance

Displacement

Vectors and Scalars

Scalars

□ quantities that only have a magnitude (just numbers).

□ 5

□ $\frac{3}{4}$

□ 98.6° F

□ 5,320,131 meters

□ \$12.99

Vectors

□ quantities that have both a magnitude and a direction.

□ 55 mph west



Position, Distance, Displacement

- ❑ Location at a specific time
 - ❑ **Position (x)** - changes depending on time
 - ❑ Think like yard lines on a football field
- ❑ How location changes over the course of a trip
 - ❑ **Distance (d)** – how far you’ve gone, regardless of direction. Always positive.
 - ❑ Cares about trip, think like the odometer on a car or fitbit # of steps
 - ❑ SCALAR – doesn’t have a direction, doesn’t care about direction
 - ❑ **Displacement (Δx)** – overall change in position ($x_{\text{final}} - x_{\text{initial}}$), including direction.
 - ❑ Where you ended compared to where you start, regardless of trip
 - ❑ VECTOR – includes direction!

Observations

Experimental Design

Research Question:

Independent Variable:

Dependent Variable:

Controls:

Experiment: