**Class Notes on Motion and Forces:**

**Motion/Reference Points:**

If an object changes its position relative to another object it is considered moving.

Reference points are things chosen to use to compare to another object to see if it is moving.

We usually use the earth or thing attached to the earth but anything can be chosen to use for a reference point.

**Distance/Displacement:**

Distance is the length along a path traveled.

Displacement is the straight line distance from start to finish in a given direction.

**Speed**:

Tells how fast something is moving. You can calculate this if you know how far an object travels in a given amount of time.

Formula for Speed: s = d/t

Speed equals distance divided by time.

**Velocity**:

Velocity, like speed, also tells how fast something is going. Velocity is different from speed in that it uses displacement instead of distance. So you must also tell the direction the object is going.

Formula for Velocity v = D/t

Velocity equals displacement divided by time

**Acceleration:**

Since acceleration is a function of velocity, it requires a stated direction as well.

Acceleration is used to describe the motion of objects that change how they are moving.

1. They can go faster and faster.

2. They can go slower and slower.

3. They can change direction.

Formula for Acceleration: a = vf –vo

time to change

Acceleration equals final velocity minus original velocity divided by the time it takes to change.