# Study guide for Motion and Forces

Force

Newton

Net Force

Balanced Forces (Explain what they are and what effect they have on an object's motion.)

Unbalanced Forces (Explain what they are and what effect they have on an object's motion)

Terminal velocity (Explain what it is and what has to happen to the forces on an object to obtain terminal velocity)

Inertia

Friction (Explain what it is, why it happens, and how to increase or reduce friction)

- One thing that affects friction is force between objects and as it increases, friction _____.
- Another factor that influences friction is surface area, and as it increases, friction _____.
- The third factor that influences friction is surface substance, and as it increases (or gets rougher), friction _____.

Four types of friction and examples:

Static:

- Ex.

Sliding:

- Ex.

Rolling:

- Ex.

Fluid: (Make sure you know that both liquids and gases are fluids.)

- Ex.

The two factors that affect gravity and how they affect gravity:

- One thing that affects gravity is _____ and as it increases, gravity _____.
- The other factor that influences gravity is _____, and as it increases, gravity _____.

Newton's 3 Laws of Motion (Define and be able to apply all three laws to real life events.)

1st law:

2nd law:

- If the mass of an object increased, but the force on it stayed constant then the acceleration of the object would_____.
  - Ex:

- If the force on an object increased, but the mass of the object stayed the same then the acceleration would _____.
  - Ex.

3rd law:

- If an action force was wind pushing/pulling on a windmill
- The reaction force would be the pushing/pulling
- The result of the action force would be:
- The result of the reaction force would be:

Motion

Frame of Reference

Speed

Velocity

How can a location or position be described?

What do you need in order to be able to calculate the speed of an object?

What is acceleration and how is it measured?