**Notes on Forces**

Dynamics- something moving
Statics- not moving

A force is a vector quantity (magnitude and direction).
Forces are measured in Newtons (A newton is made up of a mass and an acceleration).

Forces at a distance- field forces – gravity, static electricity, etc.

 **Newton’s 3 laws**

1. Law of Inertia- an object at rest tends to stay at rest and an object in motion tends to stay in motion, unless operated on by a net external force.
2. Force = mass X acceleration (F=ma)
3. For every action, there’s an equal and opposite reaction.

**Free Body Diagrams**

A picture of a situation with all the forces labeled on the diagram.



Friction- a force operating opposite of the motion of the object.