

Name: _____ Date: _____

Physical Science Notes 8 Force and Vectors

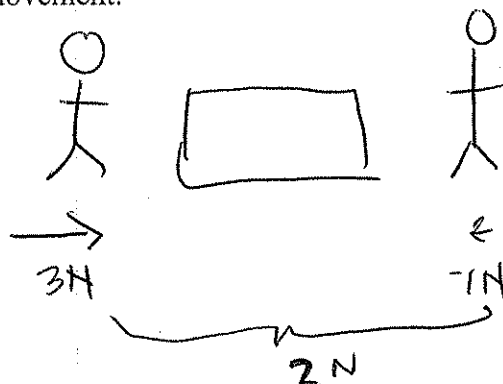
What is a Force

- A force is a push or pull that one body exerts on another.
- Some forces:
 - gravity - the force of the earth pulling down.
 - normal - the force of the ground pushing up.
 - friction - the forces of molecules acting on an object.
 - applied force - such as when you push or pull something.
- Forces will sometimes result in movement of an object, but some forces will not.

Vectors

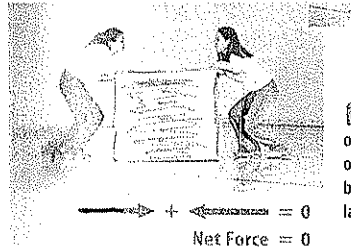
Vector Analysis

- A vector is a visual representation of a force acting on an object.
- To do this we use arrows drawn in the direction of the force.
- Usually, we draw a longer arrow for a bigger force and shorter arrows for a smaller force.
- Then, we can look at our diagram and decide which force is greater and in which direction an object will move.
- The **net force** is the sum of the vectors acting on an object and will tell us the direction of movement.



Balanced Forces

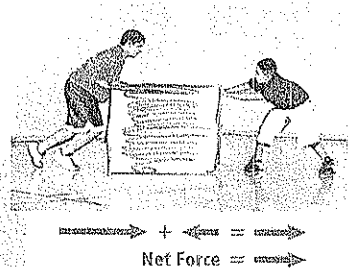
- If two vectors of the same **magnitude** (strength) are pushing in opposite directions, the net force is said to be 0, since the object will not move.



$$2\text{N} + -3\text{N} = 0\text{N}$$

Unbalanced Forces

- If two vectors are of different **magnitudes** and pushing in opposite directions, then the object will move in the direction of the larger force.



- If two vectors of any magnitude are pushing in the same direction, the object will move in that direction, as long as there is less force pushing in the opposite direction.

