

The Nature of Force

- Force – a push or pull
- Measured in Newtons (N)
- Tool = Spring scale
- Net Force – The combination of ALL forces acting on an object. A net force changes the objects Speed or direction or both.
- $F_{\text{Net}} = F_A + F_B + F_C$
- Balanced Force – Two or more equal forces whose effects cancel each other out and do not change the motion of the object. Forces that are equal in size and go in opposite directions.
- If net force equals 0, then object does not MOVE or is moving at a constant speed!
- Unbalanced Force – two or more unequal forces acting on an object
- Unbalanced forces acting on an object will change the MOTION of the object

Name:

Net Force and Force Diagrams

- 1.) What are forces measured in?
- 2.) What are balanced forces? Is there motion with these types of forces? Draw a picture as an example.
- 3.) What are unbalanced forces? Is there motion with these types of forces? Draw a picture as an example.
- 4.) Adam's is dragging his screaming brother across the floor. His brother has a weight of 30 N. Adam is pulling with a force of 40 N. Although, there is a friction force of 20 N between the floor and the little boy. **What is the net force acting on the little boy and be sure to draw a force diagram.**
- 5.) Same scenario as in question # 1, but now there is another friend involved. Adam is still pulling with a force of 40 N and Keith comes to help and pulls with a force of 65 N. There is still a friction force of 20 N. **What is the net force and be sure to draw a force diagram.**