**Newton’s Second Law**

**2nd Law:** If an unbalanced force acts upon an object the object will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 The rate of acceleration is

 Reminder: Units

Ex. What is the force of gravity on a 14kg object?

Ex. A 53kg box is pushed in space with a 284N force. Determine the acceleration of the box.

Ex. Andy (my cat) hits a 130g toy mouse across the floor with a 3N force. What is the acceleration of the toy mouse?

Net Force:

**Scales in Elevator Problems:**

Ex. A person is lifting a 15kg box upward with a 200N force. What is the acceleration of the box? Remember gravity!

The reading on a scale is the

Ex. Jenna is standing on a scale that reads 650N in an elevator (on Earth). The elevator is currently at rest.

1. What is Jenna’s mass?
2. If the elevator accelerates upward at 1.35m/s2, what does the scale read?
3. What does the scale read when the elevator accelerates downward at 1.0m/s2?