Newton's 2nd Law Study Guide

1. What is Newton’s 2nd Law of Motion? Newton's second law of motion states that acceleration is produced when a force acts on a mass. The greater the mass of the object to be accelerated the greater the amount of force needed to accelerate the object.
2. What is acceleration? Acceleration is when it increases in the rate or speed of something.
3. How do you increase an object's acceleration? You can increase it if you double the force you can double the acceleration.
4. How do you decrease an object's acceleration? To decrease it you need to go on the right side of the force and push on the right side so it will decrease the speed.
5. What is the relationship between the force on an object and the object's acceleration? Newton's second law shows that there is a direct relationship between force and acceleration because the greater the force that is applied to an object of a mass, the more the object will accelerate. The greater the mass of an object the less it will accelerate when a given force is applied.
6. How does net force impact acceleration? The acceleration of an object depends directly upon the net force acting upon the object, and inversely upon the mass of the object. As the force acting upon an object is increased, the acceleration of the object is increased. As the mass of an object is increased the acceleration of the object is decreased.
7. What is needed for an object to accelerate? In order for an object to accelerate you need to push on the object in order for it to move.
8. Would more force be needed to stop a motorcycle or a semi-truck? Why? More force would be needed to stop the semi truck because it is more heavy than the motorcycle.
9. Identify an object that is more or less massive than you. Would you need more or less force to move it?
   1. Define mass The mass is the refrigerator weight is heavier than me and bigger than me I am shorter than it and less heavier than it.
   2. Provide an example of an object that has more mass than you and one that has less mass than you. The refrigerator has more mass than me because it is a very heavy item with a lot of fruit, vegetables or other food.
   3. Use Newton’s 2nd Law of Motion to explain why one of those objects would accelerate faster than the other if you pushed both of them with the same amount of force. If I had enough force on the object to push it and me then I would win because I am lighter and I would go faster.
10. Identify and explain five different examples of Newton’s Second Law. One example of Newton’s Second Law is if you use the same force to push a truck and push a car, the car will have more acceleration than the truck, because the car has less mass. The second example of Newton’s Second Law is it is easier to push an empty shopping cart than a full one, because the full shopping cart has more mass than the empty one. The third example of Newton's Second Law of motion is a toy car with pennies on it. The observations I made is the car goes faster if there is no weight on it but if there is weight on the car then the car goes slower and less farther. The Fourth example of Newton's Second Law of motion is a skateboard with a person on it. The observations I made were it was 13.15 seconds with me on it and seven seconds without me. The fifth example Newton's Second Law states that objects with more mass require more force to move. An example of Newton's Second Law in football is tackling. Bigger players require more force to move. Also the smaller players require less force to move.