Newton's Three Laws of Motion Study Guide

Name_____ Date_____

Newton's First Law of Motion

1) What is Newton's First Law of Motion?

2) Newton's First Law of Motion is also known as the Law of Inertia, why? (pg 337)

3) Describe a balanced force and give an example. (page 355)

4) Describe an unbalanced force and give an example. (page 355)

Complete the T-chart below. Use the following phrases.

- Changes the motion of an object
- net force equals zero
- no change in object's motion
- Force on one side of the object is greater than the other side
- forces cancel each other
- Forces do not cancel each other out
- equal forces pushing or pulling in opposite directions

Balanced Forces	Unbalanced Forces

Directions: Write (b) for balanced forces, and (u) for unbalanced forces

5) _____ tug of war- team A wins
6) _____ picking up a book
7) _____ 2 people slowing pushing a heavy box
8) _____ arm wrestling, both arms still at starting position
9) _____ pushing on a wall

10) According to Newton's laws an object in motion will remain in motion unless acted on by an outside force. What outside forces brings nearly everything to a stop?

11) List the 3 types of friction and what they do.

Newton's Second Law of Motion

12) What is Newton's Second Law of Motion?

13) What is the difference between weight and mass?

Newton's Third Law of Motion

14) What is Newton's Third Law of Motion?

15) A dictionary weighing 15 newtons is placed on a desk. What is the force that the desk exerts on the dictionary?

Complete the table by naming the action and reaction forces in the following examples.

	Action	Reaction
15) Walking		
16) A bird flying		
17) a Rocket launch		
18) two bumper cars collide		
19) Pushing on a wall		
20) swimming		

Decide if it is referring to Newton's First (1^{st}), Second (2^{nd}) or Third Law (3^{rd}).

_____21) also called the law of inertia

_____22) Walking, you push on the ground and the ground pushes back

_____23) A skate board hits a rock and the skater flies off

_____24) The harder you push an object the faster it moves

_____25) a rocket in space can travel without engine power at a constant speed in the same direction

_____26) A flying bird

_____27)