Physics Unit 2 – Forces and Motion Study Guide: Name: _Key_____

Date: _____ Per. _____

<u>Vocabulary:</u>

1. Distance	(scalar) how much ground is covered
2. Displacement	(vector) how far out of place an object is from start
3. Position	Location at any given time
4. Speed	distance covered w/ respect to time
5. Velocity	rate of change of position
6. Scalar	magnitude
7. Vector	direction & magnitude
8. Acceleration	Δ velocity / Δ time
9. Mass	how much "stuff" an object is made of
10. Weight	the gravitational pull of an object toward the earth
11. Force	push or pull
12. Net Force	total force on an object
13. Equilibrium	Net force = 0
14. Spring scale	used to measure newtons
15. Gravity	the pull of objects toward each other
16. Friction	resistance to motion of objects sliding against

<u>Possible Questions:</u>

1. What is the difference between speed and velocity?

Speed = scalar   distance / time

Velocity = vector   speed in a given direction

2. What are vector and scalar quantities, give examples of each.

Scalar = magnitude   speed

Vector = direction & magnitude   velocity

3. How does inertia describe the motion of an object? Give an instance where you have experienced inertia.

- Resistance to changes in motion

- driving in a car

1

4. Explain the two instances that can happen when acceleration is zero.

Not moving = Zero velocity = Zero acceleration

Constant velocity = Zero acceleration

5. You have two different masses. Mass 1 = heavy. Mass 2 = light. If Force is constant, describe how is the acceleration for each mass affected?

Mass 1 = ↓ acceleration

Mass 2 = ↑ acceleration

6. What is the difference between displacement and the total distance traveled by an object?

displacement = Point A to point B → end product

distance = total ground covered

7. Describe the difference in motion between balanced and unbalanced forces? What is the term used to describe the sum of these forces?

Net force. If there is a net force (unbalanced force) an object will accelerate

8. How do you tell the differences in type of motion and direction of motion from position and velocity versus time graphs?

Position: Fast/Slow: Steep/shallow
to/from: slope up/slope down

velocity: Fast/slow: large/small magnitude
to/from: positive/negative

****Note: You will want to look over the Free-Body Diagram worksheet as well as the Lab that we did involving motion detectors. Be sure you understand what motion causes what type of graph