Science Chapter Review and Quiz

Week of 5/11/20 – 5/15/20

Directions: Read the review page below about Newton’s 3 Laws.

Take the 10 question Quiz on Newton’s 3 Laws. You can use the review sheet and any notes you have.

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**This is a Study Review Sheet to help you prepare for your Quiz on Newton’s Laws.**

**Force**

• A force is a push or a pull.

• The net force on an object is the combination of all the forces acting on the object.

• The forces acting on an object can be balanced or unbalanced. If the forces are balanced, the net force is zero.

**Newton’s First Law of Motion**

• If the net force on an object at rest is zero, the object remains at rest, or if the object is moving, it continues moving in a straight line with constant speed.

**Friction**

• Friction is the force that acts to resist sliding between two surfaces that are touching.

• Three types of friction are static friction, sliding friction and rolling friction

**Force and Acceleration**

• According to Newton’s second law, the net force on an object, its mass, and its acceleration are related by

 Fnet = ma (F= M x A)

**Gravity**

• The force of gravity between any two objects is always attractive and depends on the masses of the objects and the distance between them.

**Using Newton’s Second Law**

• A moving object speeds up if the net force is in the direction of the motion.

• A moving object slows down if the net force is in the direction opposite to the motion.

 • A moving object turns if the net force is at an angle to the direction of motion.

**Circular Motion**

• A centripetal force exerted toward the center of the circle keeps an object moving in circular motion.

**Newton’s Third Law**- forces always act in equal but opposite pairs. (For every action, there is an equal and opposite reaction.

**Action and Reaction**

 • According to Newton’s third law, when one object exerts a force on another object, the second object exerts the same size force on the first object.

• Either force in an action-reaction force pair can be the action force or the reaction force.

 • Action and reaction force pairs don’t cancel because they are exerted on different objects.

• When action and reaction forces are exerted by two objects, the accelerations of the objects depend on the masses of the objects.

**Weightlessness**

• A falling object is in free fall if the only force acting on it is gravity.

• Weightlessness occurs in free fall when the weight of an object seems to be zero.

• Objects orbiting Earth appear to be weightless because they are in free fall in a curved path around Earth.

Name:

Quiz- Newton’s Law

Use the review sheet to help answer the following questions.

1. After a soccer ball is kicked into the air, what forces are acting on it?
2. Which of the following changes when an unbalanced force acts on an object?
3. Mass
4. Motion
5. Intertia
6. Weight

1. Which of the following is the force that slows a book sliding across a table?
2. Gravity
3. Static Friction
4. Sliding Friction
5. Intertia
6. What combination of units is equivalent to the Newton?
7. m/s2
8. kg.m/s
9. kg.m/s2
10. kg/m
11. Which of the following is a push or pull?
12. Force
13. Momentum
14. Acceleration
15. Intertia
16. Which of the following has no direction?
17. Force
18. Acceleration
19. Weight
20. Mass
21. Which of the following descriptions of gravitational force is NOT true?
22. It depends on the mass of objects
23. It is a repulsive force
24. It depends on the distance between objects.
25. It exists between all objects.
26. If you swing an object on the end of string around in a circle, the string pulls on an object to keep it moving in a circle. What is the name of this force?
27. Inertial
28. Centripetal
29. Resistance
30. Gravitational
31. A skater is coasting along the ice without exerting any apparent force. Which law of motion explains the skater’s ability to continue moving?
32. Newton’s 1st Law
33. Newton’s 2nd Law
34. Newton’s 3rd Law
35. A 0.4 kg object accelerates at 2m/s2. Calculate the net force. Label your answer.

\*Remember F= M x A