Physical Science Chapter 12 Notes Outline

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Forces and Motion – Pages 226-385**

12.1 Forces-

What is a force?

**Force-**

Measuring Force-

Units of Force-

**Newton-**

Representing Force-

Combining Forces-

**Net Force-**

Balanced Forces-

Unbalanced Forces-

**Friction-**

4 Main Types of Friction:

1.) **Static Friction-**

**2.) Sliding Friction-**

**3.) Rolling Friction-**

**4.) Fluid Friction-**

**Air Resistance-**

**Gravity-**

Falling Objects-

**Terminal Velocity-**

**Projectile Motion-**

**SECTION QUESTIONS**

**1.) How is the motion of an object affected when a force acts on it?**

**2.) List the four types of friction.**

**3.) How does air resistance affect the acceleration of a falling object?**

**4.) Earth’s gravitational force acts in what direction?**

12.2 Newton’s First and Second Laws of Motion-

Aristotle, Galileo, and Newton-

Aristotle-

Galileo-

Newton-

**Newton’s First Law of Motion-**

**Inertia-**

**Newton’s Second Law of Motion-**

**Mass-**

Weight and Mass-

**SECTION QUESTIONS**

**1.) How is mass different from weight?**

12.3 Newton’s Third Law of Motion and Momentum-

**Newton’s Third Law-**

Action and Reaction Forces-

Action-Reaction Forces and Motion-

Action-Reaction Forces Do Not Cancel-

**Momentum-**

**Conservation of Momentum-**

**SECTION QUESTIONS**

**1.) If an eagle and a bumblebee are traveling at 8 km/hr, which has more momentum? Explain.**

**2.) Explain in terms of Newton’s third law of motion why someone who tries to jump from a canoe to a riverbank may fall into the water.**

12.4 Universal Forces- Four Universal Forces (listed 1-4)

1.) **Electromagnetic Forces-**

Electric Forces-

Magnetic Forces-

Nuclear Forces-

2.) **Strong Nuclear Forces-**

3.) **Weak Nuclear Forces-**

4.) **Gravitational Forces-**

Gravity Acts Over Large Distances-

The Earth, Moon, and Tides-

**Centripetal Force-**

Satellites in Orbit-

Uses of Satellites-

**SECTION QUESTIONS**

**1.) Which universal force can repel as well as attract?**

**2.) Which universal force acts to hold the nucleus together?**

**3.) The moon in its orbit around Earth behaves like a ball at the end of a string being swung above your head. Explain the forces involoved.**