Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Parent Initials: \_\_\_\_\_\_\_\_\_\_

**Unit 9- Force and Motion**

1. **Potential and Kinetic Energy**

Vocabulary:

* Unbalanced Forces
* Speed
* Velocity
* Newtons
* Inertia
* Acceleration
* Velocity
* Newton’s Laws
* Law of inertia
* Law of force and acceleration
* Law of action-reaction
* Average speed
* Time
* Distance
* Work
* Potential Energy
* Kinetic Energy
* Energy Transformation
* Chemical Energy
* Electrical Energy
* Mechanical Energy

You should be able to:

* Recognize the difference between kinetic and potential energy
* Determine if an object has potential or kinetic energy
* Determine the point of most kinetic energy
* Determine the point of most potential energy
* Give examples of kinetic energy
* Give examples of potential energy

1. **Balanced and Unbalanced Forces**

You should be able to:

* Recognize if forces are balanced or unbalanced
* Calculate opposite forces and determine if they are balanced or not
* Calculate combined forces to determine path of motion

1. **Newton’s Laws**

You should be able to:

* State Newton’s 1st law
* Recognize examples of Newton’s 1st Law
* State Newton’s 2nd law
* Recognize examples of Newton’s 2nd Law
* State Newton’s 3rd law
* Recognize examples of Newton’s 3rd Law
* Understand how gravity plays a role in each of the laws
* Understand how friction plays a role in each of the laws

1. **Calculations**

You should be able to:

* Calculate force, work, & mass given the formulas
* Calculate density given the formulas
* Calculate speed, distance, time given the formulas
* Calculate acceleration given the formulas
* Write the formulas in various forms in the formula triangles

1. **Graphing**

You should be able to:

* Recognize the difference between speed-time graphs and distance-time graphs
* Understand what a horizontal line means on each graph
* Analyze each graph