Matter in Motion

All objects in the universe are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Examples:

Motion – a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ over time

How do you tell if something is moving?

*
* Reference point –

Speed –

 Measured in:

Average speed =

Velocity –

* Constant only if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Constant velocity is always \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Two ways velocity can change:
*
*
* Resultant velocity –
* In the same direction =
* Opposite directions =

Acceleration –

 An object accelerates if \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or \_\_\_\_\_\_\_\_\_\_ change

 Positive acceleration –

 Negative acceleration –

 Average acceleration =

 Measured in:

 Centripetal acceleration –

Force –

 All forces have \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Expressed in units called:

 Force is always exerted \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Net force –

* If in same direction =
* If in opposite directions =

Balanced forces – net force of \_\_\_\_\_\_\_\_\_\_\_\_\_

*
* Examples:

Unbalanced forces – net force of \_\_\_\_\_\_\_\_\_\_\_\_\_\_

*
* Examples:

Friction -

 Caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the surfaces touching each other

 Depends on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ pressing them together

* + The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the surface, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the friction
	+ The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the force, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the friction

Two types of friction

 Kinetic friction –

 Sliding –

 Rolling –

 Static friction –

 As soon as the object starts \_\_\_\_\_\_\_\_\_\_\_\_\_, static friction changes to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Harmful friction:

Helpful friction:

Ways to reduce friction

*
*
*

Ways to increase friction

*
*

Gravity –

 Discovered by –

The Law of Universal Gravitation –

1. Gravitational force \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as mass \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Gravitational force \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as distance \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Weight –

*
* Measured in:

Mass –

*
* Measured in: