**Friction and Gravity Notes**

**Newton’s 1st law**

* Remember, an object in motion tends to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, an object at rest tends to stay at \_\_\_\_\_\_\_\_ unless acted on by an \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* The 2 most common outside forces on earth are: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Friction: The \_\_\_\_\_\_\_\_\_ that two surfaces \_\_\_\_\_\_\_\_\_on each other when they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Causes of Friction**

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the force of friction depends on the \_\_\_\_\_\_\_\_\_\_\_\_\_ surfaces involved and how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are pushed together.
* The \_\_\_\_\_\_\_\_\_\_\_\_ the surface, the \_\_\_\_\_\_\_\_\_\_\_\_ the friction. Ex: \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Friction also increases when the surfaces are \_\_\_\_\_\_\_\_\_\_\_\_ together with \_\_\_\_\_\_\_\_\_\_\_\_\_. Ex\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4 Main types of Friction**

1. Static friction – the friction that acts on objects that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is the friction you overcome to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an object.
2. Sliding friction – when 2 \_\_\_\_\_\_\_\_\_surfaces \_\_\_\_\_\_\_\_\_\_\_over each other. Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Rolling friction – when an object \_\_\_\_\_\_\_\_\_\_\_ across a surface. Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. Fluid friction – when a solid object moves through a \_\_\_\_\_\_\_\_\_\_\_\_\_\_. Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Gravity**

* Gravity is the force that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The gravitational force exerted on a person or object at the surface of a \_\_\_\_\_\_\_\_\_\_ is known as \_\_\_\_\_\_\_\_\_\_\_\_\_.
* Weight = \_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Acceleration due to gravity: \_\_\_\_\_\_\_\_\_\_\_\_\_

**Gravity and Motion**

* Freefall – when the only \_\_\_\_\_\_\_\_\_\_\_ acting on an object is \_\_\_\_\_\_\_\_\_\_\_\_\_. This only occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or a vacuum chamber.
* Air resistance – the \_\_\_\_\_\_\_\_\_\_\_ that opposes \_\_\_\_\_\_\_\_\_\_\_\_\_ on a falling object. This is a type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.