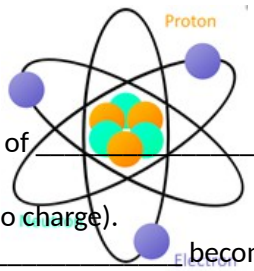
Unit: Characteristics of Electricity

Mission A: The Electrical Nature of Matter Notes Handout

<u>Mini Lesson #1: What is Electricity?</u>

- All material (_____) is made up of atoms (basic _____ blocks of _____).
- Atoms are made up of three tiny _____:
  1. _____ (positively charged)
  2. _____ (neutrally charged)
  3. _____ (negatively charged)



- Most times atoms have the _____ number of _____ and _____ making the matter they make up _____ charged (no charge).
- However; sometimes _____ within an _____ become free and move from one atom to another.
- When this happens it can cause _____ to have more _____ than electrons or more _____ than protons. These atoms are said to be _____.
  - Example:

- _____ is the result of the movement of these _____.
- There are two kinds of electric _____ an object can have:
  1. _____ (has more _____ than protons)
  2. _____ (has more _____ than electrons)
- The amount of charge an object has is _____ and dependent on the _____ of material.

<u>Mini Lesson 2: How do objects become charged?</u>

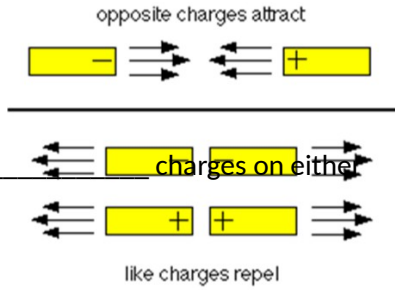
- There are 3 ways objects can become _____ (cause electrons to _____ and become _____).

1. Friction

- An _____ action that can cause a _____ to be _____ from one object to another.
- When two objects are rubbed together their _____ charges are forced to _____ making the objects _____.

- On many objects the charge _____ in the same place where the _____ took place, it remains "_____" and is a form of static _____.
- An electrical _____ is a substance in which electrons _____ move from one _____ to another.
- An electrical _____ is a substance in which electrons _____ move freely from one _____ to another.
- The _____ _____ is a chart used to determine the _____ of _____ produced on each substance when they are _____ together.
- Example:

2. Contact
- When an already _____ object touches _____ object with a _____ charge or _____ charge, the extra _____ in the charged object _____ to the object with a _____ charge.
- Example:
- There are laws of _____ between two electrically _____ particles. These laws are known as _____ law.
- They are:
  1. _____ charges _____ one another
  2. _____ charges _____ one another.



3. Induction
- Electrons _____ their position on an object to produce _____ charges on either side of the object.
- Example:

<u>Mini Lesson 3: Types of Electricity</u>

- There are two main types of electricity:

1. <u>Static Electricity</u>
- When electrical charges _____ up on the surface of a material (usually caused by _____ materials) it causes the two objects to become either _____ or _____ charged.
- Objects will become _____ to each other as they are forced to _____ or _____ electrons between the two making each object to have an _____ charge.

2. <u>Current Electricity</u>

- The rate of _____ of _____ that is produced by the _____ of electrons.
- It is measured in _____ (A), and must flow through a _____ (ex: copper wire).
- The _____ at which the _____ of electricity is flowing is a measure of the amount of _____ transferred over a period of _____.