

Lesson 6 Electrostatics (fill-in-the-blank pg 98 - 105)

The study of electricity began in _____ when _____ was rubbed with fur and attracted small pieces of leaves and straw.

Volta, in _____, produced the first _____.

Static Electricity

The Greek word for amber (fossilized tree sap) is _____.

Static electricity is electricity at _____.

_____ are materials that allow electrons to flow. _____ are materials that do not allow electrons to flow. _____ are good conductors. Some insulators include _____.

Benjamin Franklin, in the _____, explained the amber effect through a model of matter in which an _____ is transferred from one object to another.

Now we know that only _____ can move and be transferred by rubbing. Protons are fixed. A negative charge results from _____; a positive charge results from _____ and; a neutral object has an equal number of _____ and _____.

_____ means to provide a path for electrons to enter or leave an object. This _____ the object.

Charging by Friction

When rubber rod is rubbed with _____ the rod becomes _____.

When a glass rod is rubbed with _____ the rod becomes _____.

Law of Charges:

- Like charges _____.
- Opposite charges _____.

Charging by Induction

If a charged rod is brought close to, but not _____, a conductor, the _____ will rearrange themselves within the conductor.

In a neutral electroscope:

- A _____ rod (not touching) will attract electrons to the head of the electroscope.
- A _____ rod (not touching) will repel electrons from the head.
- In both cases the electroscope leaves will _____ until the charged rod is removed from the area.

- If the electroscope is grounded while the charged rod is near, what happens? What charge does the electroscope have after charged rod is removed?
 - + rod _____
 - – rod _____

Explain how to use an electroscope to determine the charge on an object.

Charging by Contact

When a neutral pith ball, or any neutral object actually, touches a positively charged object, some _____ are transferred _____ the pith ball making the pith ball _____. When a neutral pith ball touches a negatively charged object, some _____ are transferred _____ the pith ball making the pith ball _____.

Examples: Describe the 4 examples given in the text of electrostatic charging.

Walk across carpet -

Dryer static -

Thunderstorms -

Balloon on wall -

Law of Conservation of Charges: Electric charges are _____
 - they are just moved from one place to another.