Conductor:
  *
  * Examples:

Insulator:
  *
  * Examples:

___________ are good conductors because they have ______ electrons.

It is easy to put a static charge on an insulator because -

Grounding -
  *
  *
  *
  *

To put a static charge on a conductor:
  *
  *

Pith balls and electrosopes detect _________ charges. Both are made of _______________ to allow electrons to move freely, and both use insulators to _______________ the metal parts from the ground.

neutral electroscope

charged electroscope

Show What You Know: 1. 2. 3. 4.
- Neutral atoms contain equal numbers of positive _________ and negative _________.
- Only the _________ move to create unbalanced charges.
- When atoms lose electrons they become _________ charged ions.
- Like charges _________ and opposite charges _________.

Friction:
- 
- 

Static Electricity:
- 
- 

Rubber material of a balloon has a greater attraction for electrons than hair. Loosely held electrons are stripped from the _________ and added to the _________.

The hair _________ electrons and becomes _________ charged. The rubber _________ electrons and becomes _________ charged.

Acetate tube attracts the balloon.
________ charges attract. Acetate is _____ charged.

Paper towel has _________ attraction for electrons than acetate.

List some examples of electrification (production of a static charge) by friction:

Problem Set #1 (on back)
1. A material through which electrons move easily is:
   a. an insulator
   b. isolated
   c. a conductor
   d. grounding

2. Electrostatic charges are often produced by friction between objects made of materials with
   a. the same attraction for electrons
   b. different attraction for electrons

3. Rubber has a greater attraction for electrons than wool. When rubber-soled shoes scuff across wool carpet, electrons are ...
   a. stripped from the carpet
   b. stripped from the shoes
   c. created
   d. destroyed

4. A __________ can still be statically charged, even though it has been touched, because it is a __________.
   a. metal ball; conductor
   b. metal ball; insulator
   c. balloon; conductor
   d. balloon; insulator
Quiz: Intro to Electrostatics

1. Most static electricity is produced by

2. What does the "static" mean in static electricity?

3. Oppositely charged objects ________________ each other.

4. To keep a static charge on a conductor, the conductor must be ________________

5. An instrument used to detect the presence of a static charge is the ________________

6. A material through which electrons do not move easily is called a ________________ ________________ is an example.

7. When we say that an object is grounded, what do we mean?

8. What kinds of elements are the best conductors?

Use the attraction for electrons chart to answer the next two questions:

9. A rubber rod rubbed with fur has a (+,-) charge.

10. A glass tube rubbed with silk has a (+,-) charge.

Attraction for Electrons

- PVC rubber
- cotton
- paper
- silk
- fur
- wool
- nylon
- hair
- acetate
- glass