**Science 9 – Ch 9 Static Electricity Note 2: Charge by Friction, Conduction, and Induction**

* Three methods of charging:

1. **Friction**: occurs when two objects are rubbed together
   * the objects will have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charges at the end
2. **Conduction** (contact): occurs when objects touch and an electric charge is \_\_\_\_\_\_\_ from one object to the other
   * both objects will have the \_\_\_\_\_\_\_\_\_\_\_ charge at the end
3. **Induction**: results from charging without touching or making any direct contact
   * creates areas of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge on the objects

**Charging by Conduction**

|  |
| --- |
| * Occurs when objects touch and an electric charge is transferred from one object to the other.   + Ex. When you walk across a carpet and get a \_\_\_\_\_\_\_\_\_\_ by touching a metal doorknob, you are transferring some of your \_\_\_\_\_\_\_\_\_\_\_ to the doorknob.      * A neutral metal sphere When a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charged bar contacts the sphere, some of the extra \_\_\_\_\_\_\_\_\_\_\_\_ move to the sphere, giving it a \_\_\_\_\_\_\_\_\_\_\_\_\_ charge. |

**Charging by Friction**

|  |
| --- |
| * C:\Documents and Settings\gill_narinder\Local Settings\Temporary Internet Files\Content.IE5\UOOZLV4W\MC900280971[1].wmfThis method of charging objects involves \_\_\_\_\_\_\_\_\_\_ two neutral objects together. The contact allows \_\_\_\_\_\_\_\_\_\_\_ to be transferred from one substance to the other substance. * One substance will \_\_\_\_\_ negative electrons (and become \_\_\_\_\_\_\_\_\_\_ charged) while the other will \_\_\_\_\_\_ electrons (and become \_\_\_\_\_\_\_\_\_\_\_ charged). * Since the two objects have attract opposite charges, they will \_\_\_\_\_\_ each other. |

|  |
| --- |
| **Charging by Friction Cont.**   * Use the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ table (p. 256) to find out which material are more likely to lose electrons   Ex. Electric charge built up on clothes as they tumble against each other in a dryer.  Ex) a glass rod become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charged when rubbed with a silk cloth |

**Charging by Induction**

|  |
| --- |
| * C:\Documents and Settings\gill_narinder\Local Settings\Temporary Internet Files\Content.IE5\UOOZLV4W\MC900232151[1].wmfWhen objects are charged \_\_\_\_\_\_\_\_\_\_\_\_ touching or making any direct contact * IF we bring a charged object near to a neutral object, we can \_\_\_\_\_\_\_\_ a charge in the neutral object because electrons move to get farther \_\_\_\_\_ from other electrons or \_\_\_\_\_\_\_\_\_\_\_\_ to protons.   + Ex. Build-up of dust on a TV screen |
| Ex) What happens when a negatively charged bar comes near the sphere?    the charge on the bar causes, or induces, the electrons on the sphere to change their position. |