

Name:

Video: Conductors & Insulators

1. After you remove a wool sweater on a cold day, your hair might stand up on end.

This indicates that you are carrying an Electrostatic charge

2. a) Metals are called conductors because they allow charge to flow through them easily.

b) Materials like carpet are called insulators because they do not permit charge to flow through them easily.

3. We believe that all substances consist of tiny particles called atoms.

4. Our current model of the atom assumes that it is mostly empty space.

5. 99% of an atom's mass is located in the nucleus which is made up of particles called protons which are positive in charge and neutrons which are neutral in charge. Protons and neutrons have equal mass.

6. In the space surrounding the nucleus are tiny negatively charged particles called electrons.

7. The attraction between the positives negatively charged nucleus and the nucleus as they circle around it.

8. Electrons are much, much, smaller than protons. It takes 1837 electrons to equal the mass of a single proton. BUT, the negative charge on a single electron EXACTLY balances the positive charge on a single proton.

9. The outer electrons of an atom can be removed with relative ease, but the protons and the neutrons are not free to leave the nucleus.

10. Atoms become ions when they become charged by gaining or losing electrons.

11. An electron placed between 2 oppositely charged plates will be attracted by the positive plate and repelled by the negative plate, and as a result will drift towards the positive plate.

12. A nucleus placed between 2 oppositely charged plates will be repelled by the positive plate and attracted by the negative plate, and will only vibrate as they are joined together in a network and not free to move.

13. In solids, a transfer of charge can only be accomplished by electrons moving from one point to another.

14. The outer electrons of the atoms in an insulator are involved in strong chemical bonds with other atoms and not free to move.

15. Make a hypothesis as to why a bird can sit on a power line and not be electrocuted.

Because there is no place for the charge to move to.