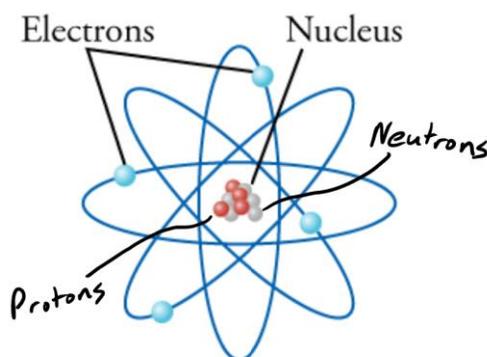


Unit 2: Electricity

Notes, part 1: Textbook Chapter 18.1 Electrical Charge, Conservation of Charge, Transfer of Charge

1. What are the two types of charges?
2. Like charges _____ and unlike charges _____.
3. In atoms, _____ carry negative charge and _____ carry positive charge.



4. The strengths of a proton's charge and an electron's charge are _____ (though they are opposite)
5. "Net charge" is what you get when you add up all of the positive and negative charges inside something. What is the "net charge" of an object with....
 - a. 3 protons
 - b. 4 electrons
 - c. 2 protons and 1 electron
 - d. 5 electrons and 3 protons
 - d. 7 protons and 7 electrons

6. When materials are rubbed together, charges can be separated, particularly if one material has a greater _____ than another.
7. Rabbit fur has a _____ affinity for electrons, while PVC has a _____ affinity for electrons.
8. Suppose we have a rabbit fur that has zero net charge, and we also have a PVC pipe that has zero net charge. What can we say about the number of protons and electrons in each object?
9. If we rub a PVC pipe with rabbit fur, what effects might we observe? Why?
10. During this experiment, what has happened to the total number of positive and negative charges (if we add up all the positive and negative charges on the two objects)? Has the total increased, decreased, or stayed the same. Explain.
11. Law of Conservation of Charge:
12. In the winter, people often talk about static electricity. What does the "static" part of "static electricity" mean? Why is it called "static electricity?"

Simulation #1: Balloons and Static Electricity

Access: Go to <http://phet.colorado.edu>, click on “Play with Sims”, then choose “Electricity, Magnets, and Circuits” simulation. Click on “Balloons and Static Electricity” and click on “Run Now”.

- 1) What is the balloon's net charge in the beginning? How do you know?

- 2) What is the sweater's net charge in the beginning? How do you know?

- 3) Use the mouse to rub the balloon on the sweater. What is the new net charge on each object?

- 4) Use the mouse to move the balloon away from the sweater and release it. What happens? Why?

- 5) Move the balloon against the wall. Why do you think the balloon sticks to the wall?

- 6) What was the net charge of the wall in the beginning? Did the wall's net charge ever change?

