

Lesson 3: What is Electricity?

Question of
the Day:

What is static electricity?

- A. A flow of electrons
- B. An electrostatic discharge
- C. A repelling between electrons
- D. A buildup of electric charge on something

Question of the Day:

After walking across a carpet, a boy feels a spark between his hand and a doorknob.

If the boy's hand is negatively charged just before he touches the doorknob, which particles moved from the carpet to his hand?

- A. atoms
- B. electrons
- C. neutrons
- D. protons

All Charged Up

- **Atoms**
 - Building blocks of all matter
 - Made of even tinier particles called:
 - Protons (positive charges), electrons (negative charges), and neutrons (neutral – no charge).
- **Electric Charge** is a property of a particle that affects how it behaves around other particles
 - When atoms have an equal number of protons and neutrons they cancel each other out.
 - Atom has no charge itself
 - Atoms sometimes gain or lose electrons

Opposite Attracts

- **Static electricity** is the build up of charges
 - Static means “not moving
 - Electric charges can build up on objects
 - Particles with the same charge repel (push away)
 - Particles with opposite charges attract one another (pull together)
- **Electrical discharge**
 - Charges jump from one object to another to another causing a ‘shock’
 - Not all cause ‘small shocks’ – some are ‘HUGE shocks’
 - Thunderstorms – charges in the clouds (positive on the top of the cloud and the ground, negative on the bottom of the cloud)
 - When these difference in charge is great enough there is a huge electrostatic discharge called lightning

Question of
the Day:

Why are metals good conductors of an electric current?

- A. Metals do not melt easily
- B. A metal also conducts heat
- C. Nonmetals do not conduct an electric current
- D. A metal contains electrons that can move through it easily

Question of
the Day:

Which if the following is lighting an example of?

- A. Electric charges
- B. Electric current
- C. Static electricity
- D. Electrostatic discharges

Current Events

- Electric current – flow of charges
 - Have a path to follow
 - Made up of: Electrons that can be made to move through a wire
 - More useful
 - Used for: cooking food, lighting a room, and producing sound
 - Examples:
 - battery
 - generating stations or energy station,