ACTIVITY TIPS

Charge It!

In this activity students build up electric charges on balloons and investigate the forces that they exert on other objects. This activity appears in the section *Fire in the Sky*.

Materials
- 2 balloons
- scrap of paper

Setup
This activity will work best on a cold, dry day.

Objective
Students will observe the buildup of static electricity that occurs through friction, and see how like charges repel and opposite charges attract.

Questions and Answers

1. What happens to your hair?

When students hold the balloon near their hair, the hair should fly up toward the balloon.

2. What can you conclude about unlike charges?

Students should be able to conclude that unlike charges attract. This may be a good opportunity to discuss the common phrase “opposites attract.”

3. What happens when you move one balloon near the other? What charge do the balloons have?

As you move one balloon toward another balloon that is sitting on a table, the balloons repel each other. This is because the balloons have like charges (in this case, both have a negative charge).

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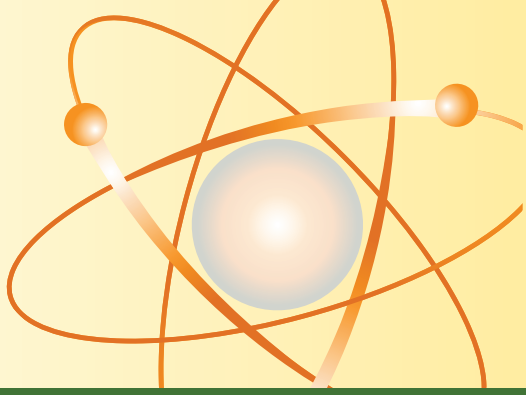

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4. What happens when you hold the strands of hair close together? What charge do the strands of hair have?

Just like the two balloons, the two strands of hair would repel each other. This is because they are both positively charged.

5. What can you conclude about like charges?

Like charges repel.

6. What happens when you put the balloon near the paper?

The paper sticks to the balloon.

7. What must have happened to the electrons in the atoms that make up each bit of paper?

The electrons, which are negatively charged, moved to the other end of the paper, leaving the positive charges closest to the balloon. This is why the paper was attracted to the negatively charged balloon.