

Charges

Electricity

Materials:

- Two red hats
- One blue hat
- Two Physics Van members

Key Points:

- Electricity is made up of **two opposite kinds of charges** (officially called positive and negative).
- It doesn't matter what you call them, the important part is that they are opposite. We'll call them Red and Blue since we have hats of these colors.
- **Like charges repel. Opposite charges attract.**

Warnings:

- Older audiences already know about charges. You may want to eliminate this demo for audiences that don't have kids younger than 5th grade or so.
- Make sure the "charges" agree on what they're going to do when they meet, so they don't collide or get confused and look dumb.

Things to talk about:

- This is the first electricity demo. Tell the audience we're switching gears and we're going to talk about how electricity works.
- Ask them for examples of things that use electricity.
- Ask if anyone knows what electricity is made of.
- **Electricity is made up of** tiny little things that we call **charges**.
- There are **two different kinds of charges**. Most scientists call them Positive and Negative, but the names don't really matter. We can call them Red and Blue.
- The most important thing to remember about charges is that **charges that are the same want to get as far away from each other as they can; and charges that are different want to get as close together as they can.**
- Get two Van volunteers and tell the kids that you're going to make them both "Red" charges by putting the red hats on them.
- Once the charges are activated, they should proceed to run in opposite directions and hide from each other.
- As you walk over to one charge, tell the audience that you're going to switch one of the Red charges so they're a Blue charge, and see what happens.
- Change the red hat for blue, and as the charges run together, restate that opposite charges want to be close together, and like charges try to be far apart.
- Break up the charges' dancing around before it makes everyone sick.