



project ideas

Electricity

Looking to generate more interest in electricity? Here are eight ideas that you can turn into individual or classroom projects.

1. **Are You Positive?**
Inflate two balloons, and tie strings to them. Now tie a balloon on each side of a hanger, and place it somewhere that the balloons can hang freely, like a doorway. What happens? Rub each balloon with a piece of wool or fur. Now what happens? Last, put your hand between the two balloons, and watch what happens. Write down all your observations, and explain why each happened.
2. **Play It Safe.**
Ben Franklin's experiment with a kite in an electrical storm was really very dangerous. When a French scientist tried it a year later, he was killed by lightning. Prepare a lightning-facts brochure for younger children that explains the dangers of lightning and how to protect yourself. Be sure to include illustrations.
3. **Lemon Aid.**
Make your own battery out of a lemon—really! Electrons will flow through the acidic lemon juice. Here's what to do. Insert a strip of copper and a strip of zinc deeply into a lemon, making sure that the strips do not touch each other. Use a voltmeter to measure the voltage between the two strips.
4. **Finding Tesla.**
Chances are good you've heard of Thomas Edison and his many contributions to the field of electricity. But have you heard of Nikola Tesla? The contributions of this Serbian immigrant are arguably just as important as Edison's. Research Tesla's work and patents. Then write a brief report about what you believe were his top five contributions.
5. **The Tine of Your Life.**
Fill a large glass mixing bowl with water. Then place two metal forks (tines down) into the bowl, keeping the forks several inches apart and a portion of each fork's handle above water. Use duct tape to secure the forks to the sides of the bowl. Measure the voltage between the forks with a voltmeter. Now add three cups of salt to the water, and measure the voltage again. How is the voltage of the saltwater different, and why?



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6. Magnet Magic.
It's possible to build a device that uses electricity to create a magnet with just a nail, copper wire, and a D-cell battery. Can you figure out how? Once you've built your electromagnet, test its strength: Hang a small nail on a string nearby your device, and see if and how the nail moves.
7. School Power?
How much power does your classroom use on an average day? You can figure it out without ever sneaking a peek at the utility bill. Here's how. First, make a list of all the electrical devices in your classroom and how many watts of energy each one uses when it's running. (Most appliances have energy usage information written on them somewhere.) Then, determine how many hours or minutes each device is on during a typical day. Calculate the daily total of watts used in your classroom.
8. Think Alternative.
What does it take to power your house each month, and what does it cost? Ask your parents for a copy of last month's utility bill. On it, you'll find the total power used during the month (or a monthly average) along with the cost for that power. Investigate what it would take to power your house using an alternative energy source, such as a generator powered by batteries or the wind. How much would it cost to buy the equipment? How much would it cost to run it each month?