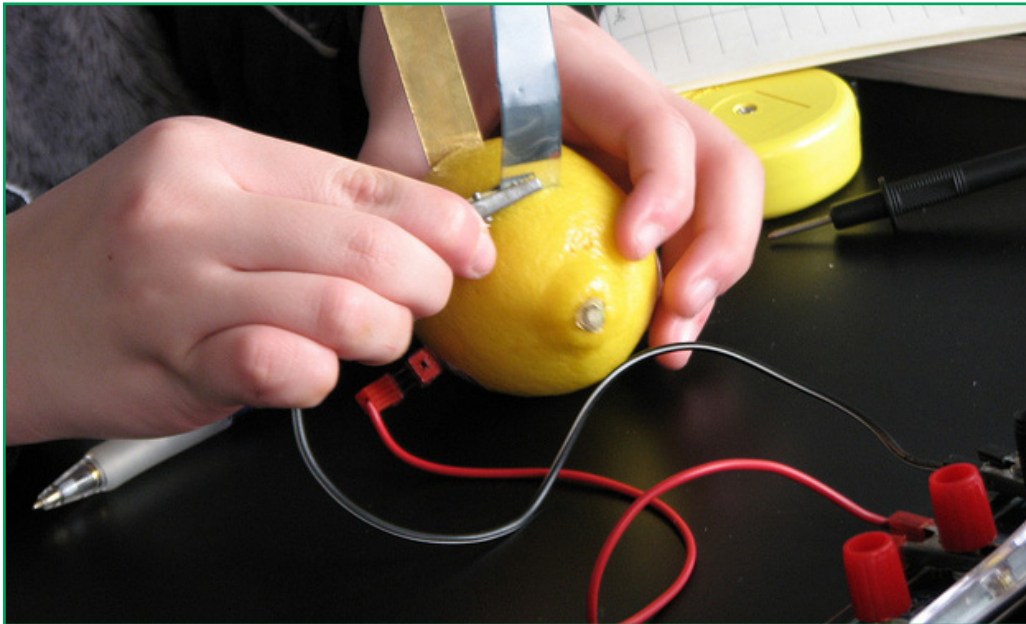




ELECTRICITY



WHAT'S IT ALL ABOUT?

De-mystify the “magic” of electric circuits, magnetism, motors and electronics. From building burglar alarms to learning how to select a good stereo and other consumer items. This project offers opportunities for hands-on experiences and knowledge you will use in the future. Experience technology firsthand while learning communication and decision-making skills.

HERE'S WHAT YOU CAN LEARN...

STARTING OUT

- ✿ Learn about safety and equipment used in working with electricity
- ✿ Identify tools and parts used in working with electricity
- ✿ Wire a simple circuit
- ✿ Build a compass
- ✿ Build a flashlight
- ✿ Construct a simple switch
- ✿ Build an electric motor

LEARNING MORE

- ✿ Work with electrical equipment and tools
- ✿ Build and test circuits
- ✿ Measure circuit voltage
- ✿ Read circuit diagrams
- ✿ Build a momentary switch and communicate in Morse Code
- ✿ Develop a basic electrical tool and supply kit
- ✿ Understand the symbols on wires and cables
- ✿ Locate your home wiring system
- ✿ Make simple electrical repairs

GOING FURTHER

- ✿ Research the influence of electricity on society
- ✿ Identify electrical and electronic parts and devices
- ✿ Learn how to solder and prepare parts for assembly
- ✿ Assemble a circuit using a transistor

RESOURCES

- ✿ *Magic of Electricity, Level 1* (06848)
- ✿ *Investigating Electricity, Level 2* (06849)

- ✿ *Wired for Power, Level 3* (06850)
- ✿ *Entering Electronics, Level 4* (06851)
- ✿ *Electric Excitement Helper's Guide* (06852)

TAKE IT FURTHER!

- ✿ Take a field trip to your local power plant or electric cooperative
- ✿ Explore fields of study and careers in electricity
- ✿ Plan and conduct an electric quiz bowl or skillathon
- ✿ Contact your local power supplier for educational opportunities
- ✿ Visit a local electrician
- ✿ Visit a coal preparation plant to see how coal is processed for use by utility plants
- ✿ Research the history of energy consumption in American homes.
- ✿ Host an electrical bingo game for your club

ENHANCE YOUR COMMUNICATION SKILLS

- Create a video about how to build a compass
- Make a poster about closed and open circuits
- Give a speech about the history of electricity
- Demonstrate how to communicate in Morse Code
- Give a speech about electrical safety to your school class, local community group or 4-H club.

GET INVOLVED IN CITIZENSHIP AND SERVICE

- Check friend's or relatives' homes for any electricity hazards
- Conduct an appliance survey
- Do simple repairs for neighbors and friends

LEARN ABOUT LEADERSHIP

- Organize a safety workshop
- Plan, conduct and participate in an electric quiz bowl
- Teach an electricity workshop

EXHIBIT IDEAS

- ✿ Build an electronic game board on the basic symbols used in electronic diagrams
- ✿ Make a display about basic electrical tools and parts and what they are used for
- ✿ Give a presentation on how electricity is produced
- ✿ Make a poster on ways to conserve energy use
- ✿ Build a homemade flashlight
- ✿ Create a simple switch
- ✿ Build a circuit with two batteries and a light bulb
- ✿ Build an electromagnet, galvanometer or compass
- ✿ Create circuit diagrams with explanations
- ✿ Display a soldered connection
- ✿ Create a display of light bulbs and the jobs they do best
- ✿ Create a poster on how to read an appliance nametag
- ✿ Develop a chart showing the electrical usage of appliances
- ✿ Create a poster on how to replace a switch
- ✿ Build a diode or transistor
- ✿ Build a 6- to 8-watt amplifier with an integrated circuit

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