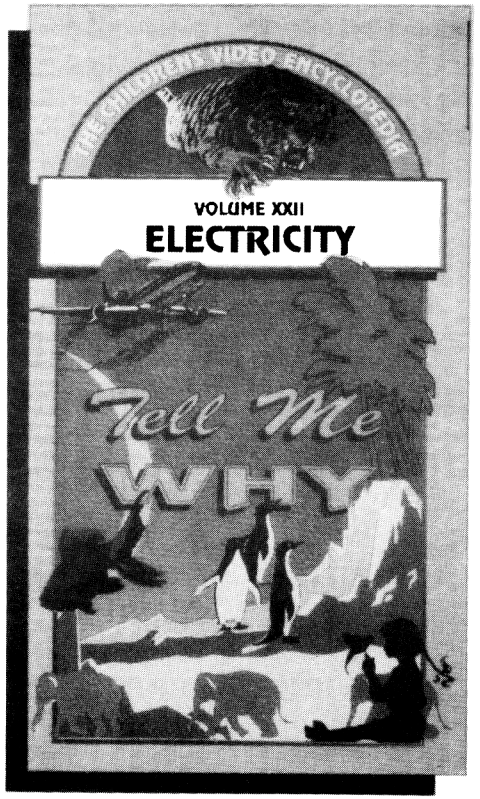
GLOSSARY

1. A.C.-alternating current; a current which changes its direction at regular intervals.
2. AMPERE-standard unit for measuring the strength of an electric current.
3. APPLIANCE-a device or machine, especially for household use.
4. ATOM-smallest unit making up a chemical element.
5. BLACK-OUT-the act of plunging into darkness.
6. CIRCUIT-electrical path or arrangement.
7. CIRCUIT BREAKER-protective device that prevents too much current from flowing into your home.
8. CONDUCTOR-anything that conveys electricity, heat, etc.
9. CURRENT-continuous flow of electrons.
10. CYCLE-complete circuit.
11. D.C.-direct current; a current which flows in one direction only.
12. ELECTRICITY-form of energy generated by friction, induction, or chemical change, and having magnetic, chemical, and radiant effects.
13. ELECTROCUTE-to kill by electricity.
14. ELECTRON-minute particle supposed to be or contain a unit of negative electricity.
15. ENERGY-those resources, as petroleum, coal, gas, wind, water, nuclear fuel, and sunlight from which energy in the form of electricity, heat, etc. can be produced.
16. FUSE-safety device that breaks an electrical connection under excessive current.
17. GENERATOR-device for producing electricity, gas, etc.
18. HERTZ-international unit of frequency equal to one cycle per second.
19. INSULATOR-a device, usually of glass or porcelain, used to prevent the passage or leakage of electricity.
20. KILOWATT HOUR-a unit of electrical energy or work, equal to that done by one kilowatt acting for one hour.
21. LEYDEN JAR-device which collects and stores electrical charges.
22. LIGHTNING-flash of light in the sky.
23. LOADSTONE-something that attracts as with magnetic force.
24. MAGNETIC FIELD-space around a magnet in which its magnetic force is appreciable.
25. MAGNETITE-loadstone.
26. MICHAEL FARADAY-english scientist who discovered that electricity occurring in nature can be created by rotating magnets within copper coils.
27. NUCLEUS-center of an atom.
28. OHM-the unit of electrical resistance equal to the resistance of a circuit in which an electrmotive force of one volt maintains a current of one ampere.
29. PARALLEL CIRCUIT-divides current flow through each lightbulb or appliance in the circuit.
30. POWER PLANT-a factory, including all buildings and equipment, for generating power, especially electrical power.
31. PROTON-part of an atom bearing positive charge.
32. SERIES CIRCUIT-all current in circuit flows through each lamp or appliance.
33. STATIC ELECTRICITY-charge of stationary particles; it sets up a field of force having potential energy.
34. TRANSFORMER-device for converting electrical currents.
35. TURBINE-motor producing torque by pressure of fluid.
36. VOLT-unit of electrmotive force.

Tell Me WHY

TEACHER'S GUIDE



VOLUME XXII

ELECTRICITY

SUGGESTED TEACHING STRATEGIES

1. List different sources of electricity.
2. Reconstruct the experiment of Michael Faraday when he learned that electricity can be created.
3. Discuss the path of electricity, or circuit, from electricity leaving the power plant to its return after use. Include the roles of transformers, insulator, and circuit breakers.
4. Compare and contrast series circuits and parallel circuits.
5. Compare and contrast alternate currents and direct currents. Discuss when each is utilized.
6. Discuss how volt, voltage, amp, ohm and wattage all work together.
7. List safety tips for playing around power lines, including distribution wires, transmition wires, electrical poles, and downed power lines.
8. List strategies for retreaving a kite tangled in electrical wires, balls or other objects lost in high voltage areas.
9. List safety precautions you can take indoors.
10. Discuss the procedures to be taken when a person is suffering from electrical shock.

CONCEPTS AND TERMS TO LISTEN AND WATCH FOR

ELECTRICITY	VOLT
CIRCUIT	OHM
INSULATOR	DISTRIBUTION WIRES
PARALLEL CIRCUITS	EXTENSION CORDS
STATIC ELECTRICITY	CURRENT
AMP	TRANSFORMER
TRANSMISSION WIRES	SERIES CIRCUITS
FUSE BOX	ALTERNATE CURRENT
CONDUCTORS	VOLTAGE
POWER PLANT	WATT / WATTAGE
CIRCUIT BREAKER	UTILITY POLE
DIRECT CURRENT	ELECTRICAL SHOCK

QUESTIONS FOR THOUGHT, DISCUSSION AND FURTHER STUDY

1. How is electricity generated?
2. What is a circuit?
3. What is the function of a transformer?
4. Why is electrical wire insulated?
5. What could happen if circuit breakers were not used in your home?
6. How does a parallel circuit work? How does it differ from a series circuit?
7. How does flicking a switch make electrical things work?
8. Why would the electric company reduce voltage to a community?
9. What is static electricity?
10. Why can birds sit on electrical wires and not be electrocuted?
11. When thinking electrical safety, what is the most important thing to remember?
12. What should you do if your kite gets tangled in electrical lines?
13. What should you do if you see a downed power line?
14. Why is it not a good idea to use electrical appliances near water?
15. What materials are good conductors of electricity?
16. What materials are good insulators to protect you from electrical shock?
17. When is it safe to use an extension cord?
18. What should you do before changing a blown lightbulb?
19. Why should one never touch a person when he is being shocked by electricity? What should one use instead?

CAREER OPPORTUNITIES

ELECTRICIAN	APPLIANCE SALESPERSON
TEACHER	RESEARCHER
SCIENTIST	MECHANICAL ENGINEER
ENVIRONMENTALIST	APPLIANCE REPAIRMAN
ELECTRICAL ENGINEER	CITY PLANNER