

ELECTRICITY

UNIT OVERVIEW

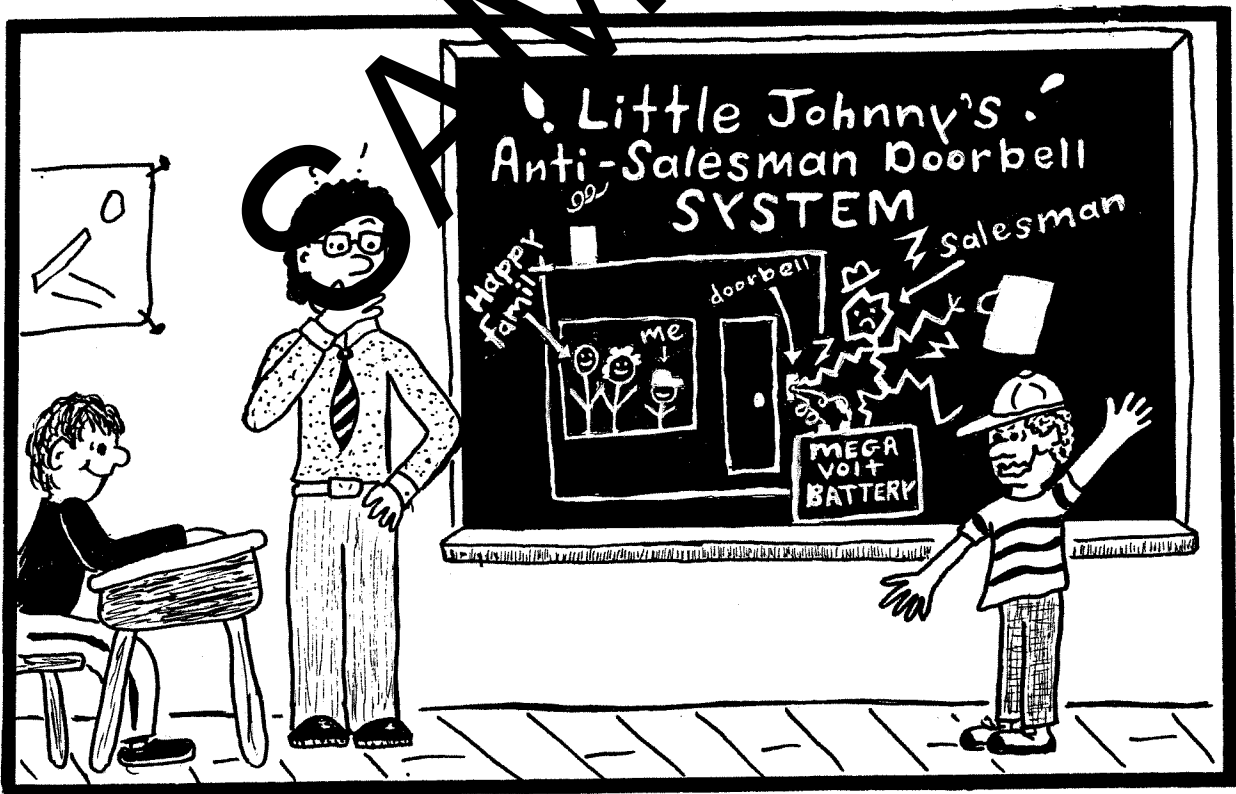
This unit is divided into two parts.

PART I - EVERYTHING YOU WANTED TO KNOW ABOUT ELECTRICITY (But Were Afraid To Ask)

The first part is a knowledge-based presentation of information using notes suitable for an overhead projector. Ten exciting activities and assignments accompany the notes. (70%)

PART II - CLASS PROJECT - Sunshine City Needs Electricity

The second section is a **role play** activity in which students, posing as concerned citizens, discuss what kind of electrical generating station to build for the make-believe community of Sunshine City. (30%)



PART I - EVERYTHING YOU WANTED TO KNOW ABOUT ELECTRICITY (But Were Afraid To Ask)

This section of the unit uses overhead notes to provide students with a base or foundation of information necessary for later assignments. Student worksheets provide simple and fun assignments which follow with the notes. The main lesson topics are:

- 1) INTRODUCTORY LESSON**
- 2) THE AMAZING ATOM**
- 3) STATIC ELECTRICITY**
- 4) CURRENT ELECTRICITY (CIRCUITS)**
- 5) INSULATORS AND CONDUCTORS**
- 6) BULBS, FUSES AND BREAKERS**
- 7) REVIEW**

The assignments which relate to the main lesson topics are:

- 1) Electricity Wordsearch
- 2) The Amazing Atom Quiz
- 3) Lightning Never Strikes Twice (Worksheet)
- 4) Toilet-tube Flashlight (Experiment)
- 5) Insulator/Conductor Test Circuit (Experiment Worksheet)
- 6) Thomas Edison's Invention (Reading Activity)
- 7) Review Questions and Crossword Puzzle

Also included are two optional assignments:

- 1) Bad Hair Days Explained
- 2) Which City Has Smog??? (Logic Puzzle)

LESSON #1 - INTRODUCTORY LESSON

Student Objectives and Activities

- Students will understand that people cannot see, hear, or touch electricity (since it is a type of energy) and can only view the results of what electricity can do.
- Students will understand that electricity is a result of electrons moving from one place to another.
- Students will know that the two types of electricity are:
 - 1) static electricity
 - 2) current electricity
- Students try to solve an electricity riddle, complete overhead notes and do the **Electricity Wordsearch** familiarizing them with many key words in the upcoming unit.

Suggested Teaching Strategies

- Begin lesson with a riddle. Challenge students to guess the topic of the new science unit as you read out the following clues one by one.

Clue #1 I am always moving from place to place.
Clue #2 When the doorbell rings, I am there.
Clue #3 When the TV is on, I am there.
Clue #4 I am often found in schools.
Clue #5 I help people everyday.
Clue #6 You can't see me.
Clue #7 You can't hear me.
Clue #8 Things light up when I am around.
Clue #9 I am often present during thunderstorms.
Clue #10 The answer to this riddle could shock you.

- Students answer on scrap paper when they are sure they have solved the riddle.
- Explain the two part setup of the unit, marking format, and expectations.
- Commence with the notes which can be given using overheads or the board.
- After notes, students complete the **Electricity Wordsearch** for a fun (mindless???) activity to start the unit.

*** Note ***

Due to the likelihood of melting a plastic transparency into the inner workings of the school photocopier, photocopy all overhead transparencies at night so you can just go home and the next day pretend you have no idea what happened.

WHICH CITY HAS SMOG???

NAME: Answer

A make-believe river called "The Sticks River" flows from the mountains in the south to the ocean in the north. Located along the river are four make-believe cities named "Itsy", "Bitsy", "Teeny", and "Tiny" (not in order) with each city getting its electricity from a different type of generator.

One city uses a hydro-electric dam to generate electricity, another burns coal to make electricity, a third has a nuclear power plant and the fourth generates its electricity using solar cells.

Your job is to use the clues to figure out:

- 1) where each city is located
- 2) what type of power station each city has
- 3) which city has the smog.

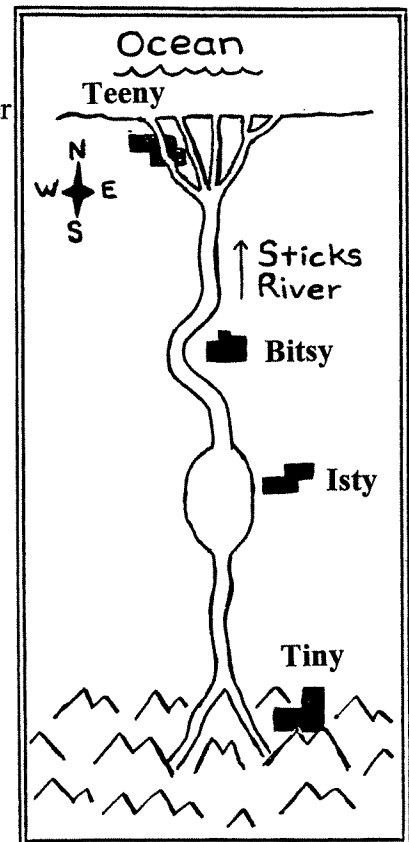


To use the chart, put an "X" in a space that is not true and a checkmark in a space that is true.

CLUES

1. The city in the mountains is not Itsy.
2. Bitsy is closer to the ocean than Itsy.
3. The city of Teeny is built on the river delta of the Sticks River.
4. The city of Tiny does not burn coal.
5. Itsy uses a renewable resource.
6. Bitsy is not a hydro or solar power plant.
7. Itsy is not far enough south for a solar power plant.
8. Tiny does not use nuclear power.
9. Bitsy uses uranium for its plant.

	Coal	Hydro	Nuclear	Solar
Bitsy	X	X		X
Tiny	X	X	X	
Itsy	X		X	X
Teeny		X	X	X



Teeny has the smog because it burns coal.

REVIEW QUESTIONS

NAME: _____

All questions must be answered in full sentences (A.I.F.S.) unless it says to list the answer.

1. List three things that can tell you if static electricity is present.

1) _____

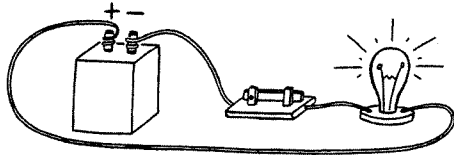
2) _____

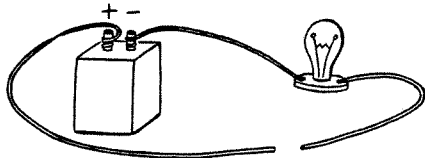
3) _____

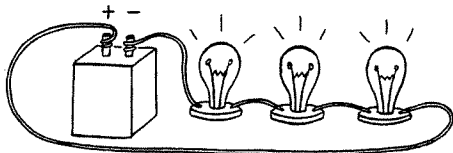
2. Explain how static electricity is made.

3. Explain two differences between current electricity and static electricity.

4. Label each type of circuit.







SAMPLE