FAMOUS NAMES IN ELECTRICITY

The sentences below refer to famous scientists and inventors from *The History of Electricity* section of your infosheet. Read the sentence. Next, write the last name of the scientist or inventor in the space provided. Then, circle the letters in the name indicated by the sentence in parenthesis. For example: if the last name is Smith, and the sentence tells you to circle the second and fourth letters, you would circle the "m" and the "t." Finally, unscramble the letters you have circled to form the answer to the final statement.

1. First scientist to conduct an electric current by passing a magnet through copper wiring._____
(Circle the third, fourth, and sixth letters.)

2. In 1895, he opened a power plant that used AC power. _____
(Circle the seventh and eleventh letters).

3. Many people believe he discovered electricity with his famous lightning experiment._____
(Circle the first, third, and sixth letters.)

4. Using salt water, zinc, and copper, he created the first electric cell. _____
(Circle the third and fifth letters.)

5. He invented the light bulb and opened the first electric power plant. _____
(Circle the third and the sixth letters.)

The first electric power plant able to transport electricity over 200 miles.

ELECTRIC MATH

Match the following numbers with the statements below. You will use each number only once. Write the numbers on the lines to the left of the statements. Next, perform the mathematical operations indicated by each statement. Write your answers on the lines to the right of the statements.

8   120   1000   1882   1879   35

1. **Start with the voltage used to operate most of your household appliances.**   _____

_____   2.   **Divide this number by the cost, in cents, of a kilowatt-hour of electricity.**   _____

_____   3.   **Multiply this number by the average efficiency of a power plant.**   _____

_____   4.   **Add to this number the year the light bulb was invented.**   _____

_____   5.   **Divide this number by the number of watts in one kilowatt.**
(Round number off to nearest tenth.)   _____

_____   6.   **Multiply this number by the year Edison started the first commercial**
power plant.   _____

TRANSPORTING ELECTRICITY

Explain what each of the components numbered below does to get electricity from the generator to the consumer.
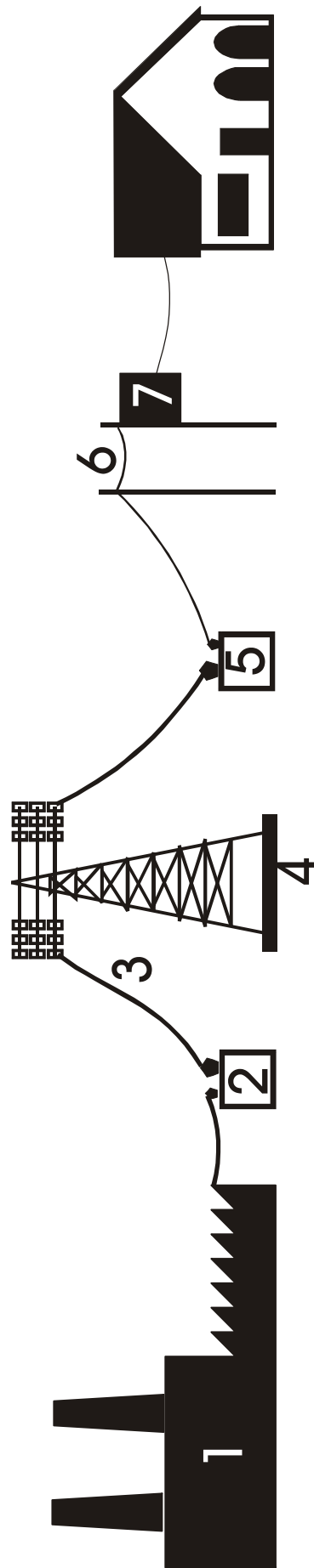
1. Power plant -

2. Step-up transformer -

3. Transmission line -

4. Power tower -

5. Step-down transformer -

6. Distribution line -

7. Neighborhood transformer -

MEASURING ELECTRICITY

Directions: Fill in the blanks in the tables below.

Voltage	=	Current	x	Resistance
1.5 V	=	A	x	3 Ω
V	=	3 A	x	4 Ω
120 V	=	4 A	x	Ω
240 V	=	A	x	1 2 Ω

Power	=	Voltage	x	Current
27 W	=	9 V	x	A
W	=	120 V	x	1.5 A
45 W	=	V	x	3 A
W	=	120 V	x	2 A

Appliance	Power	=	Voltage	x	Current
TV	180 W	=	120 V	x	
Computer	40 W	=	120 V	x	
Printer	120 W	=	120 V	x	
Hair Dryer	1,000 W	=	120 V	x	

POWER	x	TIME	=	ELECTRICAL ENERGY	x	PRICE	=	COST
5 k W	x	100 h	=		x	$0.08	=	
1000 W	x	1 h	=		x	$0.08	=	
25 kW	x	4 h	=		x	$0.08	=	