

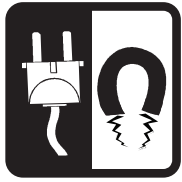
Electricity

Write the word that best describes each definition in the blank space. Use each word only once. Not all words may be used.

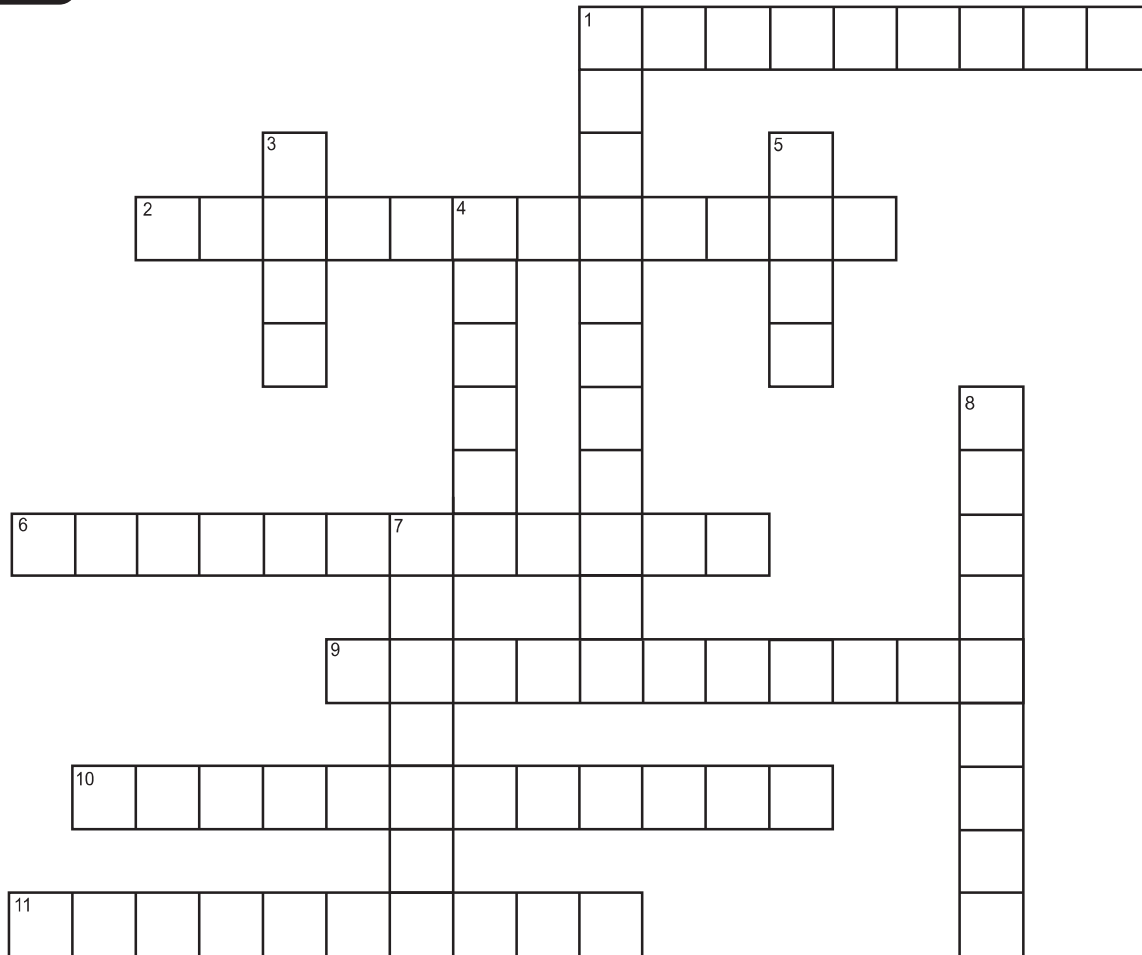
1. A substance in which all atoms are identical. _____
2. The center of an atom. _____
3. The negatively-charged particle of an atom. _____
4. The positively-charged particle of an atom. _____
5. The particle in the nucleus of an atom with no charge. _____
6. The smallest part of an element that keeps all of the element's characteristics. _____
7. An electrical force within an atomic particle. _____
8. The areas around the nucleus where electrons are located. _____
9. The force field created between the poles of a magnet. _____
10. A device that does work in an electric circuit. _____
11. A path through which electricity travels. _____
12. An object in which the molecules are arranged so that north-seeking poles point one direction, while south-seeking poles point another. _____
13. How like charges or magnetic poles respond. _____
14. A device with magnets and coils of wire that produces electricity. _____
15. A device that produces electricity through a chemical reaction. _____

Word Bank

- atom
- attract
- battery
- charge
- circuit
- electron
- element
- energy levels
- generator
- load
- magnet
- magnetic field
- neutron
- nucleus
- proton
- repel
- turbine



Electricity Crossword

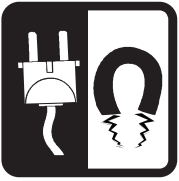


ACROSS ►

1. Electricity is a _____ source of energy.
2. _____ lines send electricity over a nationwide network.
6. A _____ is the amount of energy used in one hour by ten 100-watt light bulbs.
9. Electricity is sent to a _____ that "steps up" the voltage.
10. _____ lines deliver electricity to your home.
11. In a coal-fired power plant, thirty-five percent of the fuel is converted into electricity. This is called the _____ of the power plant.

DOWN ▼

1. _____ are small buildings containing transformers and electrical equipment.
3. A _____ is a measure of the electric power an appliance uses.
4. A _____ is found in a generator and can be spun to create electricity.
5. _____ is the fossil fuel that makes the most electricity in the U.S.
7. High pressure steam turns the blades of a _____.
8. A _____ houses magnets and a spinning coil of copper wire.



Famous Names in Electricity

The sentences below refer to famous scientists and inventors from the History of Electricity section of your electricity fact sheet. Read the sentence. Next, write the last name of the scientist or inventor in the squares and circles. Unscramble the letters in the circles to form the answer to the final statement.

1. First scientist to conduct an electric current by passing a magnet through copper wiring.

□ □ ○ ○ □ ○ □

2. In 1895, he opened a power plant that used AC power.

□ □ □ □ □ □ ○ □ □ □ ○ □

3. Many people believe he discovered electricity with his famous lightning experiment.

○ □ ○ □ □ ○ □ □

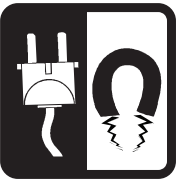
4. Using salt water, zinc, and copper, he created the first electric cell.

□ □ ○ □ ○

5. He invented the light bulb and opened the first electric power plant.

□ □ ○ □ □ ○

6. 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.

12.5

120

1000

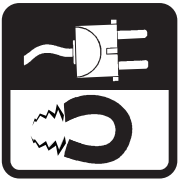
1882

1879

35

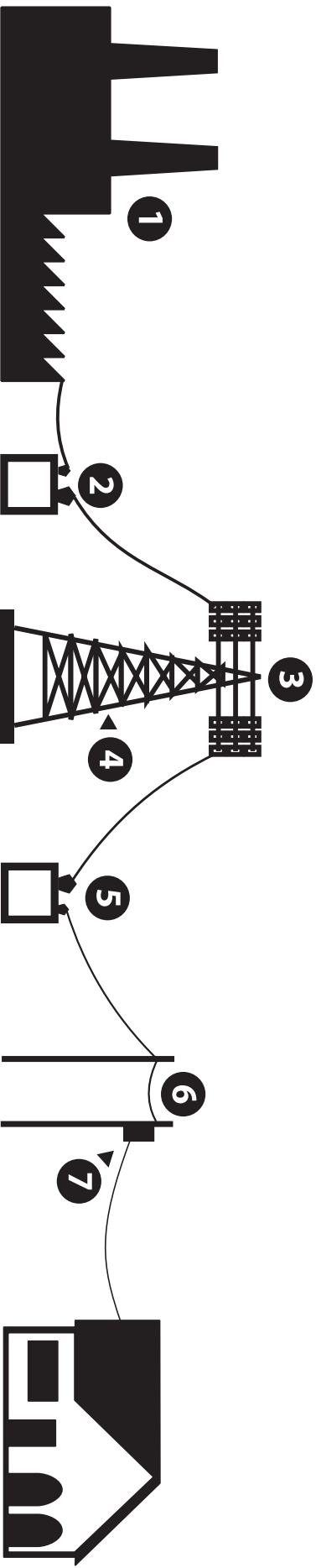
- _____ 1. Start with the voltage used to operate most household appliances.
- _____ 2. Divide this number by the cost, in cents, of a kilowatt-hour of electricity = _____
- _____ 3. Multiply this number by the average efficiency of a thermal power plant = _____
- _____ 4. Add to this number the year the light bulb was invented = _____
- _____ 5. Divide this number by the number of watts in one kilowatt = _____
- _____ 6. Multiply this number by the year Edison started his power plant =

ANSWER



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: