Directed Reading for Content Mastery

Section 2 ▪ Electricity and Magnetism
Section 3 ▪ Producing Electric Current

Directions: *For each of the following, write the letter of the term or phrase that best completes the sentence.*

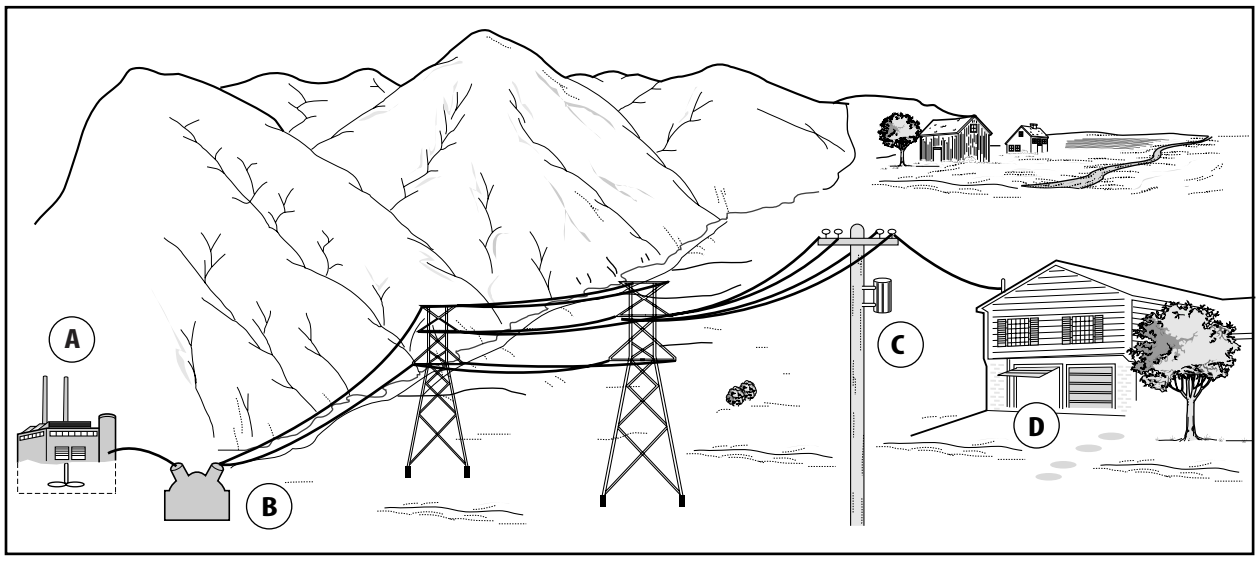
_____ **1.** You can increase the strength of an electromagnet by _____.
a. adding loops to the coil **b.** reducing the current

_____ **2.** A transformer that _____ voltage has more loops of wire in its primary coil than in its secondary coil.
a. increases **b.** decreases

_____ **3.** An electric fan plugged into a wall outlet runs on _____ current.
a. direct **b.** alternating

_____ **4.** The current in an electric motor comes from _____.
a. direction of the current **b.** amount of current flowing

Directions: *Study the following diagram. Then identify each part by filling in each blank below.*



_____ **5.** A step-up transformer increases voltage to reduce heat loss.

_____ **6.** An electric motor uses electrical energy to open a garage door.

_____ **7.** A generator produces electricity when a coil of wire is rotated in a magnetic field.

_____ **8.** A step-down transformer decreases voltage for safety reasons.

Meeting Individual Needs

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SECTION 2 Reinforcement

Electricity and Magnetism

Directions: *Circle the term or phrase in parentheses that correctly completes the sentence.*

1. When a current is passed through a coil of wire with a piece of iron inside, (an electromagnet, a commutator) is formed.
2. An electromagnet is a (permanent, temporary) magnet.
3. Adding more turns to the wire coil (increases, decreases) the strength of an electromagnet.
4. Increasing the amount of current that flows through a wire (increases, decreases) the strength of an electromagnet.
5. Electromagnets change electrical energy into (chemical, mechanical) energy.
6. An instrument that is used to detect current is (an electromagnet, a galvanometer).
7. An electric motor changes (chemical, electrical) energy into mechanical energy.
8. Like a galvanometer, an electric motor contains (a switch, an electromagnet) that is free to rotate between the poles of a permanent, fixed magnet.
9. A coil's magnetic field can be flipped by (reversing the direction of current, increasing the number of loops) in the coil.
10. In a motor, a reversing switch that rotates with an electromagnet is called a (voltmeter, commutator).
11. In a motor, the stronger the magnetic field in the coil, the (weaker, stronger) the force between the permanent magnet and the electromagnet.
12. The speed of an electric motor can be controlled by varying the amount of (electric current, mechanical energy) to the motor.
13. Name three devices you see or use everyday that make use of the relationship between electricity and magnetism to operate.

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Meeting Individual Needs

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