14. What energy source is used to produce most of the electricity we use today?
   F. fossil fuels
   G. geothermal energy
   H. falling water
   J. wind

15. Which pair is made up of two things that work in opposite ways?
   A. bar magnet and horseshoe magnet
   B. chemical energy and mechanical energy
   C. generator and motor
   D. solar energy and geothermal energy

16. What does an electromagnet have that a bar magnet does not have?
   F. attraction for iron **H.** two poles
   G. magnetic field **J.** wire coil

Inquiry Skills

17. The needle of a compass moves when you put a bar of metal close to it. What can you **infer** from this observation?



18. A student team builds two electromagnets. The students use 20 coils of wire in one of the electromagnets. They use 40 coils in the other. Everything else is the same. **Compare** the strengths of the two electromagnets.



Critical Thinking

The Big Idea

19. Suggest a practical use for an electromagnet. Explain why it would be a good use for the magnet.

20. Suppose you woke up one morning and one use of electricity had disappeared. How would your life change? How would your community change?

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Inquiry Skills (5 pts. each)

17. The bar of metal is a magnet.
18. The one with more coils is stronger.

Critical Thinking (5 pts. each)

19. Students' suggestions and explanations should show that they understand what an electromagnet is and how it works.
20. Students should identify an everyday use of electricity and offer a logical scenario on how modern life would be different without it.

Chapter Test

See ***Assessment Guide*** pages AG 110–115 for a Chapter Test and Performance Task, with Long Option rubric. Assessment options appear on page 600L.

Short Option Performance Assessment

Task

Static Cling

The amount of static electricity on a balloon can be estimated by how many pieces of confetti it picks up at a distance of 1 cm. Ask students to design and conduct an experiment to test whether a dryer sheet reduces the static electricity on a balloon. Ask them to show their results graphically and state a conclusion.

Rubric

Preparation Give students a balloon and wool. Let them review the Insta-Lab in Lesson 1 to create static charge in the balloon. Provide dryer sheets, confetti, and a metric ruler.

Scoring Rubric—Performance Indicators

_____ Designs and conducts a controlled experiment.

_____ Measures and compares the static electricity on a balloon under two conditions.

_____ Displays data effectively.

_____ States a conclusion consistent with experimental findings.

Observations and Rubric Scores

3 2 1 0