

Magnets and Electricity

Grade 3 • SCIENCE • Students recognize basic magnetic and static-electric interactions and determine whether a simple battery-and-bulb circuit is complete or incomplete. • Standards: 3-PS2-3, 3-PS2-4

Read each question carefully and write your answer. Think about how magnets work and how electricity flows in circuits!

1. A magnet has two ends called poles. One pole is called north. What is the other pole called?
2. Maria rubs a balloon on her hair. Then the balloon sticks to the wall. Is this an example of static electricity or magnetism?
3. Two magnets are placed near each other. Their north poles are facing each other. Will the magnets push apart or pull together?
4. Look at this circuit: A wire connects the bottom of a battery to a bulb. Another wire connects the top of the battery to the same bulb. Is this circuit complete or incomplete?
5. Kevin has a magnet. He tests it on five objects: a paper clip, a wooden pencil, a plastic cup, an iron nail, and a rubber eraser. How many of these objects will the magnet attract?
6. Look at this circuit: A wire connects the bottom of a battery to a bulb. Nothing is connected to the top of the battery. Will the bulb light up? Answer yes or no.
7. A magnet's south pole is brought close to another magnet's north pole. Will these magnets attract or repel each other?
8. After sliding down a plastic slide, Jasmine's hair stands up when she touches a metal doorknob. She sees a tiny spark. What caused the spark?
9. Look at this circuit: One wire connects the bottom of a battery to a bulb. A second wire connects the bulb to the top of the battery. Is this circuit complete or incomplete?

10. Two bar magnets are placed in a line on a table with a small gap between them. The arrangement from left to right is: north pole, south pole, gap, south pole, north pole. If you gently push the left magnet toward the right magnet, what will happen?

Answer Key — Magnets and Electricity

For the teacher / parent. Do not distribute with the worksheet.

1. south
2. static electricity
3. push apart (*Same poles (north and north) repel each other*)
4. complete (*The electricity can flow from the battery through both wires and the bulb in a complete loop*)
5. 2 (*Only the paper clip and iron nail are made of metal that magnets attract*)
6. no (*The circuit is incomplete because electricity cannot flow back to the battery*)
7. attract (*Opposite poles (north and south) attract each other*)
8. static electricity (*Static electricity built up on her body and jumped to the metal doorknob*)
9. complete (*Electricity can flow from the battery, through the wires and bulb, and back to the battery in a complete loop.*)
10. The magnets will push apart or repel (*The two south poles facing each other across the gap will repel because same poles push apart*)