# **Magnetism Comprehension Check**

1. What is magnetism? What do attract and repel mean?
2. Which of the following materials are magnetic? Choose all that apply:
   1. Iron
   2. Glass
   3. Rubber
   4. Nickel
   5. Plastic
   6. Titanium
   7. Steel
3. How does distance affect the strength of a magnet’s pull?
4. Magnets have opposing poles. What happens when opposite poles are near one another? What happens when the same poles are near one another?
5. What is a magnetic field? According to the text, where are magnetic fields strongest?
6. Is Earth considered a magnet? Why or why not?
7. Explain how compasses use magnets to work.
8. What is electromagnetism?
9. What is an electromagnet and why are they useful?
10. Describe one way people use electromagnetism to make life easier.

# **Magnetism Comprehension Check**

1. What is magnetism? What do attract and repel mean?
   1. Magnetism is an invisible force that either attracts (pulls) or repels (pushes away). Magnetism is produced by the motion of electrons in metals.
2. Which of the following materials are magnetic? Choose all that apply:
   1. Iron
   2. Glass
   3. Rubber
   4. Nickel
   5. Plastic
   6. Titanium
   7. Steel
3. How does distance affect the strength of a magnet’s pull?
   1. Distance affects the strength of a magnet’s pull because magnets only attract objects that are relatively close. The objects must be able to be affected by the magnet’s magnetic field. Objects that are too far in the distance will not be affected by a magnet’s force.
4. Magnets have opposing poles. What happens when opposite poles are near one another? What happens when the same poles are near one another?
   1. Magnets have a positive pole and a negative pole. When opposite poles are near one another, they attract each other, and the magnets are pulled together. When the same poles are near one another, they repel each other.
5. What is a magnetic field? According to the text, where are magnetic fields strongest?
   1. A magnetic field is an area of force surrounding a magnet. The magnetic field is what allows magnets to be able to pull or push on objects without touching them. According to the text, magnetic fields are strongest at the poles.
6. Is Earth considered a magnet? Why or why not?
   1. Yes, Earth is considered a giant magnet. This is because the metals swirling inside Earth create a magnetic field around it. One of the poles is located in the Arctic, and the other is in Antarctica.
7. Explain how compasses use magnets to work.
   1. A compass is a tool that uses magnets to help determine direction. The Earth’s magnetic poles attract the compass’s metal needle so that it always points north.
8. What is electromagnetism?
   1. Electromagnetism describes the relationship between electricity and magnets. Both electricity and magnetism can be powerful forces, but combined they can be even more powerful.
9. What is an electromagnet and why are they useful?
   1. An electromagnet is a temporary magnet that comes from running an electric current through metal. This can be useful because it contains a powerful magnetic field that can be turned off and controlled by people.
10. Describe one way people use electromagnetism to make life easier.
    1. People use electromagnetism to make life easier. For example, electric generators use electromagnetism to spin magnets and generate electricity. Electric motors use magnets and coils of wire to convert potential energy into mechanical energy. Maglev trains also use the concepts of repulsion to float above the tracks.