

Glossary

attract To pull toward. Attraction is a pulling force. Magnets attract, or pull on, objects made of iron, steel, cobalt, or nickel. When placed near each other, unlike poles of magnets attract or pull toward each other.

compass A tool used to find direction. A compass contains a magnet (the needle) that can turn freely. The north pole of a compass needle is a north-seeking pole. So, the north pole of the compass magnet points toward Earth's magnetic north pole. Compasses were once very useful to people traveling around the world. They still are, but now we also have other tools to find direction.

domain A group of atoms whose magnetic fields are aligned. Domains act like tiny magnets with north and south poles. In objects that are not magnets, domains are scattered. The poles point in all directions. In a magnet, domains are lined up. The magnetic forces of the domains add together to make a magnet.

Earth's geographic poles The northernmost and southernmost points on the globe. Earth rotates around an imaginary line called an axis. This axis runs through Earth's center from north to south. The northern end of the axis marks Earth's geographic north pole. The southern end of the axis marks Earth's geographic south pole.

Earth's magnetic poles The poles of the magnetic field that surrounds Earth. The magnetic north pole of Earth is located about 1200 miles away from Earth's geographic north pole. The north-seeking pole of a compass is attracted to the magnetic north pole.

electric current The flow of electric charges through a closed circuit. When electric current flows through a wire in a closed circuit, it produces a magnetic field around the wire.

electromagnet A magnet made by passing electric current through a coil of wire wrapped around an iron core. Electric current passing through a wire produces a magnetic field around the wire. If the wire is wrapped around a piece of iron, the iron becomes a magnet. The iron stops being a magnet when the current is turned off.

force A push or a pull. Magnets exert forces on magnetic materials and on other magnets. Magnets can exert forces on magnetic objects even from a distance. They don't need to be touching the objects. The force is strongest at the poles of a magnet. Like poles exert a pushing force and repel each other. Unlike poles exert a pulling force and attract each other.

magnet A material that attracts steel, iron, cobalt, and nickel. Magnets come in many shapes and sizes. Materials that contain iron, steel, nickel, and cobalt are attracted to, or pulled toward, a magnet. Magnets also attract the mineral magnetite and other magnets. Materials that are attracted to a magnet are described as magnetic.

magnetic field The area around a magnet where magnetic forces act. The magnetic field exists all around a magnet, but it is strongest at the magnet's poles. Iron filings can be used to show where the magnetic field exists around a magnet. The most iron filings collect in areas where the magnetic field is strongest. A magnetic field also exists around a wire that current is flowing through. This makes the wire act as a magnet.

magnetic poles The parts of a magnet where the magnetic force is strongest. Magnets have two poles—a north pole and a south pole. Like magnetic poles repel each other. Unlike magnetic poles attract each other.

Glossary (continued)

magnetite A mineral that is naturally magnetic. Magnetite contains iron and is a weak magnet. Early explorers used magnetite to find north. Magnetite is sometimes called lodestone.

permanent magnet A material that always acts as a magnet. The domains in a permanent magnet stay lined up. The magnetic forces of the domains add together to make a magnet.

repel To push away. Repelling is a pushing force. When placed near each other, like poles of a magnet repel or push away from each other.

temporary magnet A material that acts as a magnet for only a short time. In a temporary magnet, the domains line up, but do not stay aligned for very long. When the domains are lined up, the material acts as a magnet. When the domains become scattered again, the material stops acting like a magnet. An electromagnet is a temporary magnet. It is only a magnet when electric current is flowing through the wire. When the current stops flowing, the electromagnet is no longer a magnet.