

Lesson 1

ANSWER KEYS

Reading Checks

READING CHECK **Identify Evidence** How can iron filings provide evidence that a bar magnet has a magnetic field?

When the magnet is lying flat and iron filings are sprinkled around the magnet, the filings line up in a specific pattern.

READING CHECK **Cause and Effect** What three processes or forces combine to set convection currents in motion?

1. Heating and cooling of fluid

2. Changes in a fluid's density

3. Force of gravity

Figures 2 & 3

Waves

Figure 2 Earthquakes produce different types of seismic waves that travel through Earth. The speed of these waves and the paths they take give geologists clues about the structure of the planet's interior.

Make Observations

Compare and contrast the paths that P-waves and S-waves take through Earth. How do you think this information helps geologists understand Earth's interior?

P-waves travel all the way through Earth, but S-waves do not. Geologists can use this information to learn where the rocks of Earth's interior change.

Pressure and Depth

Figure 3 The deeper that the swimmer goes, the greater the pressure on the swimmer from the surrounding water.

1. **Compare and Contrast** How is the water in the swimming pool similar to Earth's interior? How is it different? (*Hint: Consider both temperature and pressure in your answer.*)

Similar: Pressure increases as depth increases. Different: In a pool, the water temperature typically decreases as depth increases. But inside Earth, the temperature increases with depth.

2. **CCC Use Proportional Relationships**

At what location in the pool would the water pressure be greatest?
at the bottom

Figure 4, 6, & 7



1. Compare and Contrast

The heated water is (more **less** dense than the melted snow and rainwater.

2. Apply Concepts

What process causes convection currents to form in a hot spring?

uneven heating of the water in the spring

