The Core

Try It Out

Open up this model of the earth to expose the different layers of the earth, from the crust to the core.

What's the Big Deal?

The hot, dense **inner core** of the Earth is made mostly of iron. You might think that's what's responsible for Earth's magnetism. But the temperature of the inner core is so hot that the magnetism of iron is altered. Earth's magnetism actually comes from the swirling *outer* core.

Earth's magnetic field is crucial to life on our planet. It protects the planet from the charged particles of the solar wind. Without the shield of the magnetic field, the solar wind would strip Earth's atmosphere of the ozone layer that protects life from ultraviolet radiation.

Geoscientists cannot study the core directly. All information about the core has come from reading seismic data, analysis of meteorites, lab experiments with temperature and pressure.

(Source: National Geographic)

Women in Science

Inge Lehmann was a Danish seismologist and geophysicist who is known for her discovery in 1936 of the solid inner core that exists within the molten outer core of the Earth.

Lehmann also discovered a discontinuity in the speed of seismic waves at depths between 190 and 250 km. This is named the Lehmann discontinuity after her.

Lehmann received many awards and accolades for her work and is considered to be a pioneer among women and scientists in seismology research.

(Image: George C. Marshall Foundation)

Wonder While You Walk...

People often think of magma, which is *molten* rock, when they think of what's inside the earth, but the inner core is *solid*. Why isn't the core made of molten rock?