

LESSON 5 | What is inside the earth?

Content standard C18

If you could dig a hole all the way to the center of the earth, what would you see? Would the earth look the same all the way through?

Scientists have wondered about the inside of the earth. They have found ways to study it. They use special tools to dig out samples from deep inside. Special instruments "look into" parts of the earth we cannot see.

The scientists have learned that the earth is not the same all the way through. The materials are different, so are the temperature and pressure. Temperature becomes greater the deeper you go. Pressure becomes greater too.

The earth has three different layers. They are the **crust**, the **mantle**, and the **core**. Each layer of the earth is made up of different materials.

CRUST The thin outer layer of the earth is called the crust. The crust is thick in some places and thin in others. Beneath the oceans, the crust is between 5 and 10 km thick. However, under the continents, the crust is between 32 and 70 km thick. The crust is made up of loose rocks and soil. Under the rocks and soil, the crust is solid rock. We live on the crust.

MANTLE The layer of earth found below the crust, and above the core, is called the mantle. The mantle is about 2,900 km thick. More than two-thirds of the mass of the earth is in the mantle. The mantle has two parts. The upper mantle is "plastic" solid rock that can flow like a thick liquid. The lower mantle is solid rock.

CORE The inner layer, or the center of the earth is called the core. The core is about 3,500 km thick. The core has two parts, the outer core and the inner core. The outer core is a liquid layer that is about 2,200 km thick. It contains melted iron and nickel. The inner core is about 1,300 km thick. The inner core is not liquid as many people think. The inner core is made up of solid iron and nickel.

THE EARTH'S LAYERS

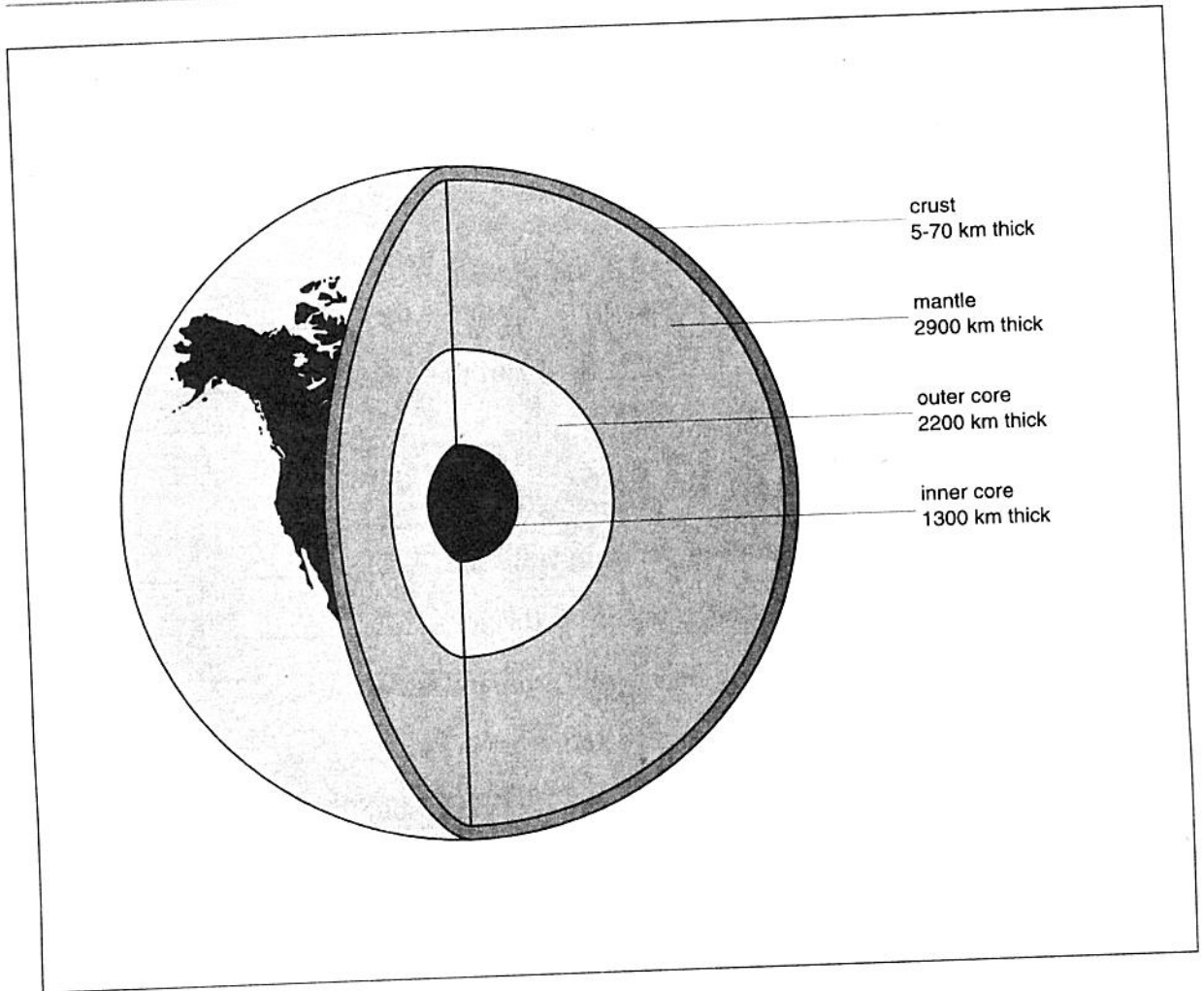


Figure A

1. Which layer is the thickest? _____
2. Which layer is the thinnest? _____
3. On which layer do we live? _____
4. Which layer is the hottest? _____
5. Which layer is the coolest? _____
6. Which layer touches the atmosphere? _____
7. Which layer is made up of melted iron and nickel? _____
8. What is the center layer called? _____
9. Name the layer between the crust and the outer core. _____
10. Name the layer between the inner core and the mantle. _____

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided. Some words may be used more than once.

mantle
upper
lower

crust
outer core

inner core
continents

1. Starting with the top layer, the layers of the earth are the _____, the _____, the _____, and the _____.
2. The layer that has melted iron and nickel is the _____.
3. The thickest crust is found below the _____.
4. The layer that has the highest temperature is the _____.
5. The layer that has the lowest temperature is the _____.
6. The _____ is made up of solid iron and nickel.
7. The layer of the earth between the core and crust is the _____.
8. The _____ is made up of loose rocks and soil.
9. More than two-thirds of the earth's mass is in the _____.
10. The _____ part of the mantle can flow like a thick liquid.

TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- _____ 1. Every layer of the earth is the same thickness.
- _____ 2. The mantle contains soil.
- _____ 3. The mantle is the thickest layer.
- _____ 4. We live on the crust.
- _____ 5. The deeper we go into the earth, the cooler it becomes.
- _____ 6. Most of our planet is made of soil.
- _____ 7. The lower part of the atmosphere touches the crust.
- _____ 8. Pressure is greatest in the inner core.

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

	Column A	Column B
_____	1. mantle	a) we live on this layer
_____	2. crust	b) layer below the crust
_____	3. inner core	c) contains melted iron and nickel
_____	4. outer core	d) layer of air
_____	5. atmosphere	e) contains solid iron and nickel

WORD SCRAMBLE

Below are several scrambled words you have used in this Lesson. Unscramble the words and write your answers in the spaces provided.

1. TELNAM

2. STRUC

3. KILNEC

4. SEPREURS

5. LOSI

REACHING OUT

Scientists believe that our planet was once all melted material. While melted, the different materials separated into layers. How would this explain the fact that the lightest rocks are found in the crust, and heavier materials are found deeper down?

Hint: Throw a penny and a piece of wood into a bowl of water. Watch what happens and think about it.
