

## Layers of the Earth

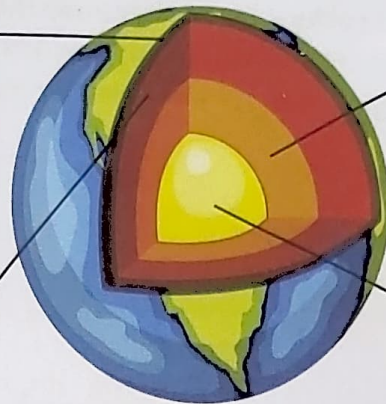
Have you ever noticed the layers of an onion? The Earth, like an onion, has multiple layers, with each one inside the other. Let us learn about the different layers of the Earth (Fig.14.3).

### Crust

- Outermost layer of the Earth
- The thinnest layer
- Composed of land and water

### Mantle

- The layer beneath the crust
- The thickest layer
- Made of thick solid rocky substances



### Outer core

- The layer below the mantle
- Made of super-heated molten lava
- The lava mostly has metals

### Inner core

- The innermost and the hottest layer of the Earth
- Is like a solid ball of metals

Fig. 14.3 Layers of the Earth



## Let's Practise 1

(Subject Connect: Hindi)

### A. Circle the correct answer.

1. (Venus / Mercury) is the planet closest to the Sun.
2. Jupiter, Saturn, Uranus and Neptune are called the (rocky planets / gas giants)
3. All the planets revolve around the (Sun / Earth) in a fixed path called the orbit.
4. (Mantle / Outer core) is made of super-heated molten lava.

### B. Answer the following questions.

1. Name the hottest layer of the Earth.
2. Define the terms: a. Inner planets b. Outer planets.

Think about the days of the week in Hindi and their connection to the eight planets. Write their names and the corresponding names of the planets.

## MOVEMENTS OF THE EARTH

The planet Earth shows two types of movements—rotation and revolution.

### Rotation

You must have studied that the Earth has an imaginary line passing through its centre. This imaginary line is called the **axis** (Fig.14.4) which is slightly tilted. The axis appears to enter the Earth through two points called the poles:

- the North Pole (point at the top of the Earth)
- the South Pole (point at the bottom of the Earth)

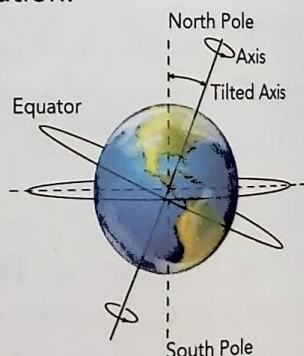


Fig.14.4 Rotation of the Earth

The Earth spins around this tilted axis from west to east. The movement of the Earth on its own axis is called **rotation**. The Earth completes one rotation in about 24 hours.

At the same time, the other hemisphere has shorter and cooler days because it is receiving slanting rays of the Sun. So, this hemisphere has winter season (Fig.14.6). Since the Earth changes its position gradually, the Southern hemisphere and the Northern hemisphere experience two more seasons — autumn and spring.

## Let's Practise 2

Change the word highlighted in red to make the sentence correct.

1. The Earth completes its one rotation in about 365 days and 6 hours. *revolution*
2. The Earth rotates on its own axis from east to west. *west to east*
3. The portion of the Earth that lies to the north of the axis is called Northern hemisphere. *equator*
4. Revolution of the Earth around the Sun and its tilted axis cause day and night. *Rotation*

### Know Right

From the Earth, it appears that the Sun moves across the sky during the day but this is not true. It is actually the Earth which is moving.

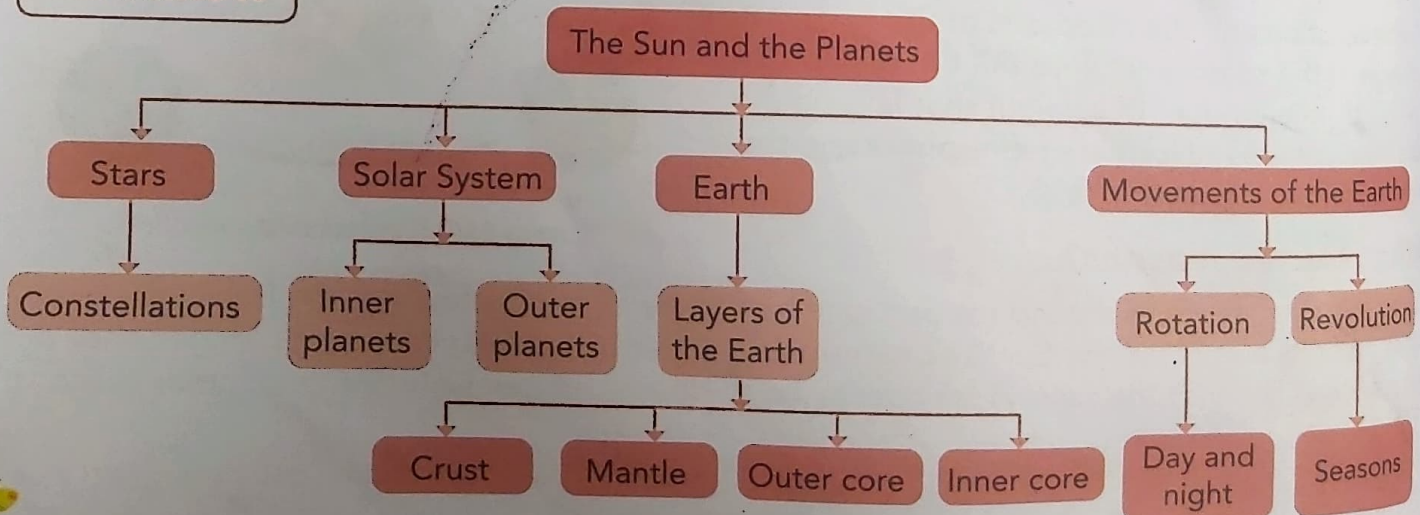
### Think it Over (C-7.2)

What would happen if the Earth stops rotating on its own axis and also stops revolving around the Sun?

### Words I know

Constellations:	The patterns formed by groups of stars
Planets:	The spherical heavenly bodies that revolve around the Sun
Crust:	The outermost layer of the Earth
Mantle:	The layer of the Earth beneath the crust
Outer core:	The layer below the mantle
Inner core:	The innermost and hottest layer of the Earth
Rotation:	The movement of the Earth around its own axis from west to east
Equator:	An imaginary line that is at the equal distance from both the poles
Revolution:	The movement of the Earth around the Sun in its own orbit

### All I know



# Let's Recall



(C-13.2)

Tick (✓) the correct answer.

- Which of the following planets is surrounded by prominent rings formed of ice and rocks?
 

a. Jupiter	<input type="radio"/>	b. Mars	<input type="radio"/>	c. Saturn	<input checked="" type="radio"/>
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- This imaginary line divides the Earth into two equal halves .....
 

a. Equator	<input checked="" type="radio"/>	b. Axis	<input type="radio"/>	c. Hemisphere	<input type="radio"/>
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- The rotation of the Earth causes .....
 

a. seasons	<input type="radio"/>	b. day and night	<input checked="" type="radio"/>	c. revolution	<input type="radio"/>
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Circle the correct word to complete the sentences.

- (Planets / Stars) are the heavenly bodies that do not have light of their own.
- (Mercury / Earth) is the planet with only one moon.
- (Neptune / Mars) is known as the red planet.
- The (axis / equator) of the Earth runs from the south pole to the north pole.

Number the planets in order of their distance from the Sun.



M



E



S



J



U

2 moons

1 moon

146 moons

15 moons

20 moons

Write the names of these planets and the number of moons each has.

Answer the following questions.

- Define the terms:
 

a. constellation	b. planet
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- Differentiate between:
 

a. axis and equator	b. rotation and revolution
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- Explain the layers of the Earth with the help of a well-labelled diagram.
- With the help of an activity, describe how days and nights are formed.
- How do revolution of the Earth and its tilted axis cause change in seasons?

## Pause and Ponder

(C-7.2)

Why do we get more time to play in the evening in summers but not in winters?

## Let's Discuss

(C-7.2, C-4.1)



- Scientists have discovered water on the Mars. Since water is essential for us, do you think we can live on this planet?
- The Sun provides heat and light to the Earth and the Earth supports life. Can we say that the Sun helps us survive on the Earth? Explain.

The Sun gives light to everyone expecting nothing in return. Are you as giving as the Sun? Share your experience.

(SEL: Self-awareness)



## Fun Time (C-13.3)

Rearrange the letters to find the words.

TRUCS

...CRUST.....

TANMLE

...METAL.....

RNENI ORCE

...INNER CORE.....

TUORE ORCE

...Outer CORE.....

## Do It Yourself (C-12.3)

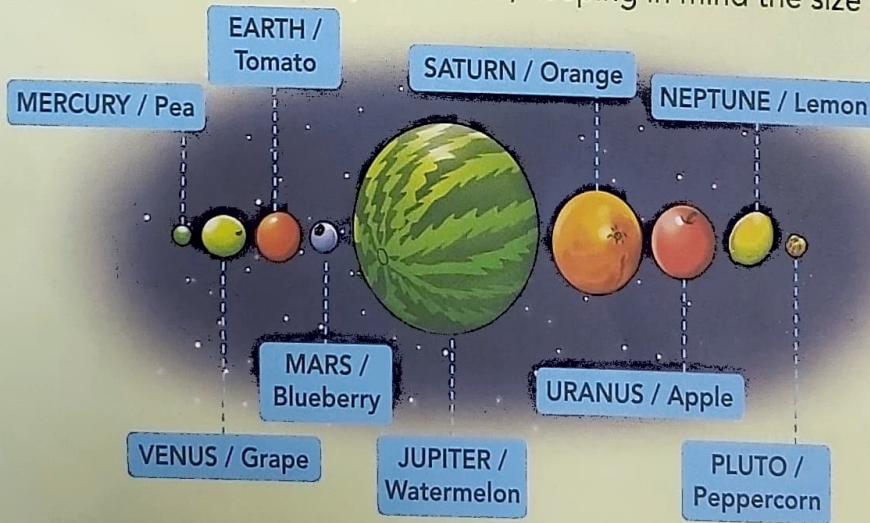
[Skills assessed: Creativity, Critical thinking, Communication]

### Let's make Healthy Solar System

STEAM Connect

1. Take a circular plate. Paint it blue.
2. Collect different fruits such as pea, cherry tomatoes, green grapes, blueberry, orange, watermelon, grapefruit, apple, lemon and a peppercorn.
3. Arrange the fruits in the plate and label them as shown below.
4. Your model of the solar system is ready!
5. Speak a line describing each planet in the class.

Note: You can select the fruits of your choice, keeping in mind the size of the planets.



Research and find out the size of different planets and arrange them in the increasing order of their size.

## Back to Roots (C-5.1)

- Q:** Many festivals in India are related to the position of the Moon. Why?
- A:** Movement of the Moon affects us in many ways. It has many benefits our life. Celebrating traditions or festivals related to the Moon builds harmony and brings peace into society. Some of the festivals related to the Moon are *Eid*, *Guru Purnima*, *Karwachauth* and so on. Accordingly, people observe the Moon day or *Tithi* for doing some important things.



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