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Globe

Focus On

- ❖ Shapes of the Earth
- ❖ Globe
- ❖ Uses of a Globe
- ❖ Latitudes and Longitudes



HERE WE GO.....

Which shape according to you, is similar to our earth's shape? Tick (✓) the right shape :



Shape of the Earth

Long ago, people believed that the shape of the earth is flat like a disk or coin. It was Ferdinand Magellan who proved that the earth is round like a ball and not flat like a coin. He sailed towards west and returned to the same place after years. If the earth had been flat, this would not have been possible. Afterwards this fact was also proved by some other **voyagers**. Now in modern era, it has been proved by the photographs taken by the satellites. Astronauts had also proved the same fact.

Fact Byte

Earth is not shaped like a perfect sphere but like an orange, slightly flattened at the top and bottom.



Globe

It is very difficult to see or study the entire earth at one time. So to perform a deep study of outer surface of the Earth, we use its spherical model, which is called **globe**.

It is the most accurate way of showing the world's surface. It shows the exact position of oceans and continents. It shows the surface of the earth most accurately because its shape is just that of the earth.



The Earth as seen from the outer space

Fact Byte

The first known globe was made by Greek philosopher Crates of Mallus in modern day Turkey. **Martin Behaim**, a German map maker, navigator and merchant made the globe that is the oldest surviving globe of the earth. It is known as **Erdapfel**.

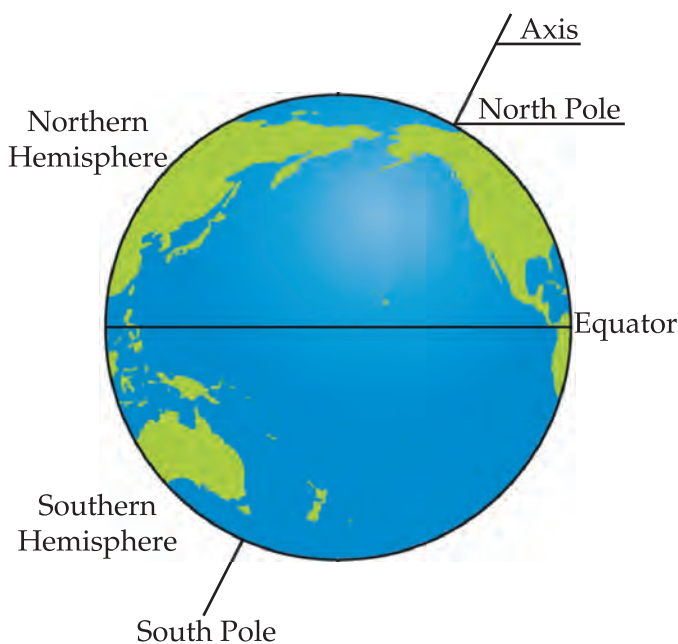
Uses of a Globe

A globe is a better model of the earth than a flat map. That is because the earth is a sphere. It is used to locate places, sea routes, air routes etc. Continents, countries, oceans can be located on a globe easily.



A globe

Locating reference points on a Globe



Important points of reference on a globe

The north and south poles are two imaginary points through which the earth's imaginary **axis** passes. It is considered to be at the Earth's centre.

The northernmost point i.e. upper end is the **North pole** and southernmost point i.e. the lower end of the Earth is the South Pole.

The equator is the imaginary primary reference line drawn around the Earth halfway between the **north** and **south pole**.



The half of the Earth to the North of the equator is the **Northern Hemisphere**; the half to the South is the **Southern Hemisphere**.

Latitudes and Longitudes

Latitude and **longitudes** are the imaginary lines that are considered to be there for the measurement of exact location of a place.

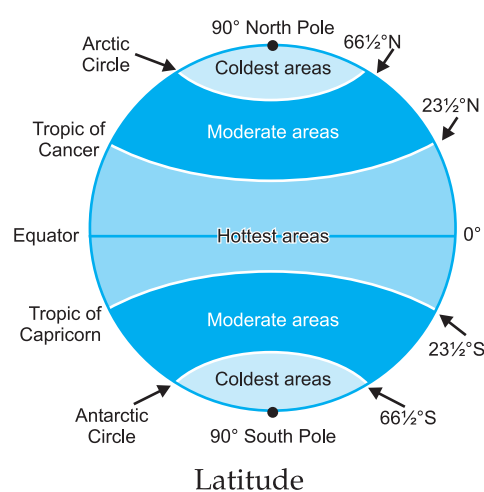
Latitudes are the lines that run **parallel** to the equator. They have equal distance at every place. These lines of latitude are labelled in degrees. The equator is positioned at 0 degree.

Some significant lines of latitudes are given below :

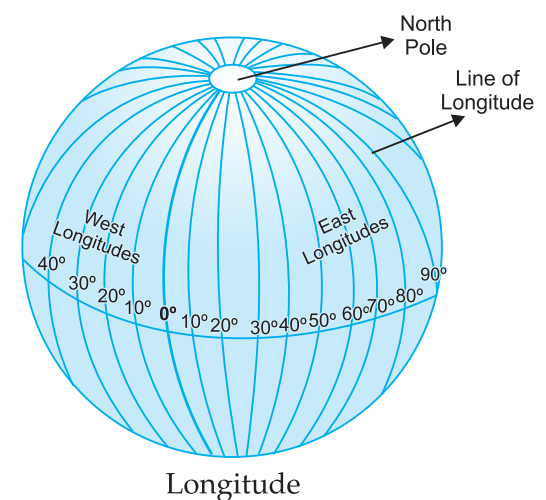
- ❖ The North Pole at 90°N in the North
- ❖ The South Pole at 90°S in the South
- ❖ The Arctic Circle at $66\frac{1}{2}^{\circ}\text{N}$.
- ❖ The Antarctic Circle at $66\frac{1}{2}^{\circ}\text{S}$.
- ❖ The Tropic of Cancer of $23\frac{1}{2}^{\circ}\text{N}$.
- ❖ The Tropic of Capricorn at $23\frac{1}{2}^{\circ}\text{S}$.

Lines of latitude lie across the Earth from east to west, but they measure globe from north to south starting at the Equator.

Lines of longitude fall across the globe from north to south but measure the globe from east to west starting from prime meridian.



Latitude

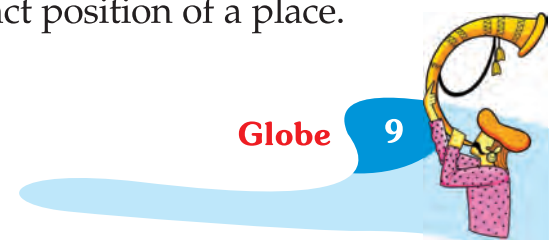


Longitude

Longitudes are imaginary half circles running from the North Pole to South Pole. They are also known as **meridians**. Unlike latitudes, these are non-parallel lines labelled from 0 degree to 180 degree on both sides of the 0 degree meridian.

Prime Meridian or 0 degree meridian lie in Greenwich, a city near London. Prime Meridian divides the Earth into two halves, the Eastern and Western hemisphere. The meridians that fall in the East of Greenwich are called the Eastern Hemisphere and the meridians that fall in the west of Greenwich are called the Western Hemisphere.

The latitudes and longitudes form an imaginary criss-cross pattern on the Earth's surface that is known as **grid** or **graticule**. This is used to locate the exact position of a place.





Flash On

- ◆ The shape of the Earth is spherical i.e. a little flattened on top and bottom.
- ◆ The model of the Earth is called a globe.
- ◆ The globe is the exact model to show continents and oceans as its shape is just like the earth.
- ◆ Axis is the imaginary line that passes through the north and south pole and the earth rotates on it.
- ◆ The equator is the centre of the earth.
- ◆ The lines, parallel to equator, are called latitudes.
- ◆ The imaginary circular lines that run through the North Pole and South Pole are called longitudes.
- ◆ These imaginary lines together form a criss-cross pattern that is called the grid or graticule.



Stir Up Your Mind

A. Tick (✓) the correct option :

1. The round shaped model of the earth is called :
 (a) the map (b) the globe (c) the atlas
2. On a globe, we can see the location of :
 (a) oceans (b) continents (c) Both of these
3. Southernmost point on the globe is :
 (a) North Pole (b) South Pole (c) Equator
4. The lines parallel to the equator are :
 (a) latitudes (b) meridians (c) None of these
5. The prime meridian is a :
 (a) latitude (b) longitude (c) Both of these

B. Fill in the blanks :

grid, longitudes, Northern Hemisphere, Southern Hemisphere, Equator

1. The _____ is an imaginary line that divides the earth into two halves.
2. The upper half of the earth from the equator is called the _____.
3. The lower half of the Earth from the equator is called the _____.
4. Meridians is the other name for _____.
5. Latitudes and longitudes make a criss-cross pattern on the Earth that is known as _____.

C. Write T for True and F for False :

1. The earth rotates on its imaginary axis.
2. The earth's shape is like an apple.
3. The equator is the centre line of the Earth.



4. The equator divides the earth into two hemispheres.
5. The latitudes and longitudes make a swirled pattern on the Earth.



D. Match the following :

Column A

1. North pole
2. Grid
3. Model of the earth
4. Tropic of Capricorn
5. Latitude

Column B

- (a) 23½ degrees S
- (b) Imaginary lines parallel to the Equator
- (c) Globe
- (d) 90° degree N
- (e) Series of squares

E. Answer the following in brief :

1. What is the shape of the Earth?
2. Define globe.
3. Name the 90°N and 90°S reference points.
4. Name the hemispheres that have equator as their middle line.
5. Name the city from where prime meridian passes through.

F. Answer the following in detail :

1. What was the olden belief about the earth's shape? How did we come to know about its actual shape?
2. Explain important reference points on the globe.
3. Define latitude and longitude.



Practice Time

QUIZ

Write an autobiography of Ferdinand Magellan describing his voyage measuring the whole earth.

DO IT

A. Divide the class into two teams. Give some places to them to identify on globe. The team which identifies the places first wins.

B. Map

Take a geographical map showing the Earth's shape and mark given reference points on it :

- | | | |
|-------------------|---------------------|------------------------|
| 1. North Pole | 2. South Pole | 3. Equator |
| 4. Prime Meridian | 5. Tropic of Cancer | 6. Tropic of Capricorn |

C. Plan a tour of a planetarium. Let the students understand the Earth's shape, its position and its movements.

HOTSPOT

What are the prominent colours on a globe? What thing do these colours denote?

YOUR TURN

Find the location of India on a globe. Show it in degrees according to latitudes and longitudes.

