



# **MAJOR DOMAINS OF THE EARTH**



**CLASS-VI**

**SUBJECT-GEOGRAPHY**

**CHAPTER-5**

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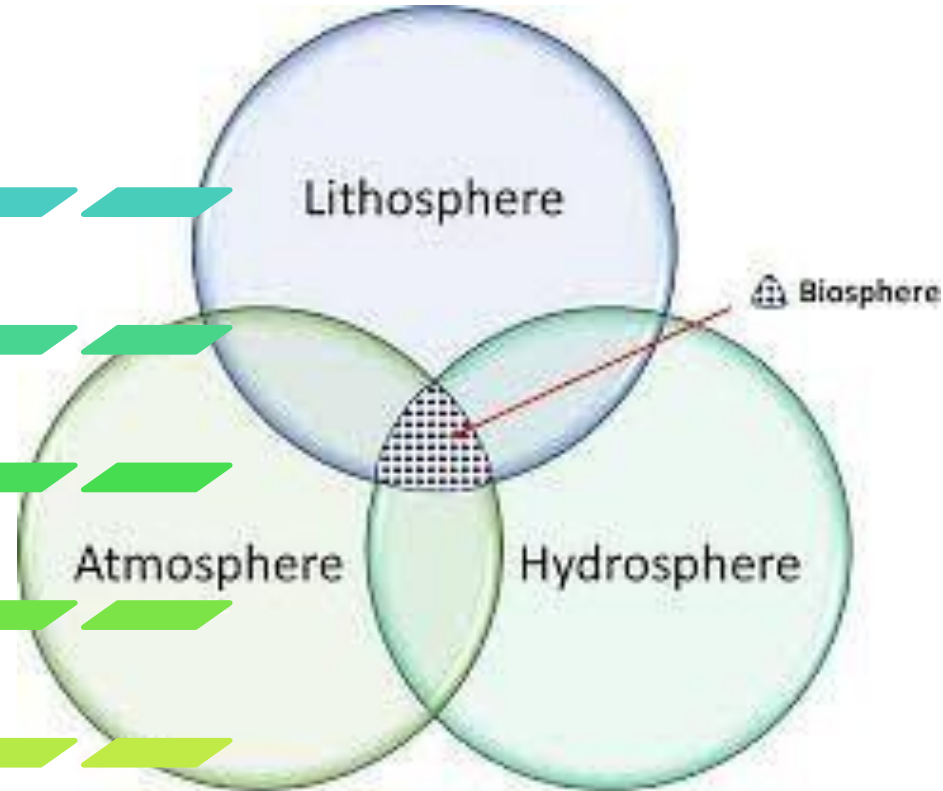
**Continents and oceans**



**Composition of the Atmosphere**



**Biosphere – the domain of life**



# **LEARNING OBJECTIVES**

The students will be able to –

Know about the Major domains of the earth

Understand the features all the continents and oceans

Mark and label continents and oceans on the world map

Explain importance of the atmosphere

Discuss the importance of Biosphere for living organisms



## COMPETENCIES ACHIEVED

Critical thinking

Decision making

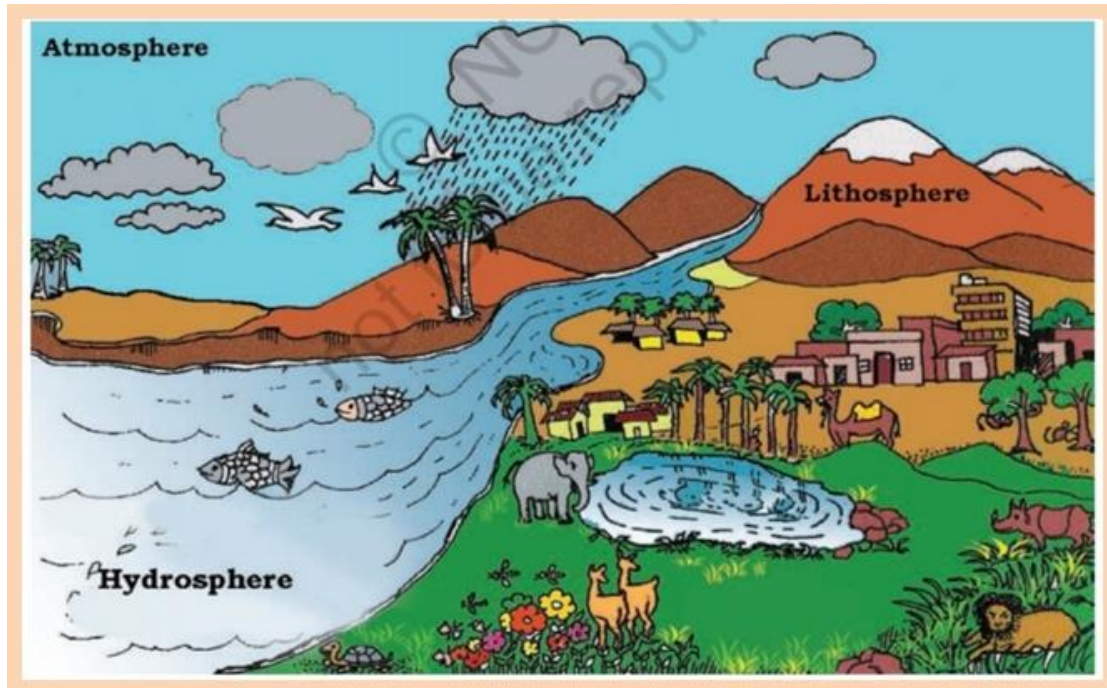
Logical reasoning

**The earth is the only planet which has life.**

**Do you know why?**

Human beings can live here because the life sustaining elements of land, water and air are present on the earth.

The surface of the earth is a complex zone in which three main components of the environment meet, overlap and interact.

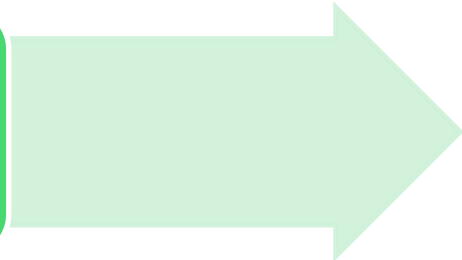


# **MAJOR DOMAINS OF THE EARTH**

**The solid portion of the earth on which we live is called the Lithosphere.**



**The gaseous layers that surround the earth, is the Atmosphere, where oxygen, nitrogen, carbon dioxide and other gases are found.**



**Water covers a very big area of the earth's surface and this area is called the Hydrosphere.**



**The Biosphere is the narrow zone where we find land, water and air together, which contains all forms of life.**





# Lithosphere

The solid portion of the earth is called the *Lithosphere*.

It comprises the rocks of the earth's crust and the thin layers of soil that contain nutrient elements which sustain organisms.

There are two main divisions of the earth's surface.

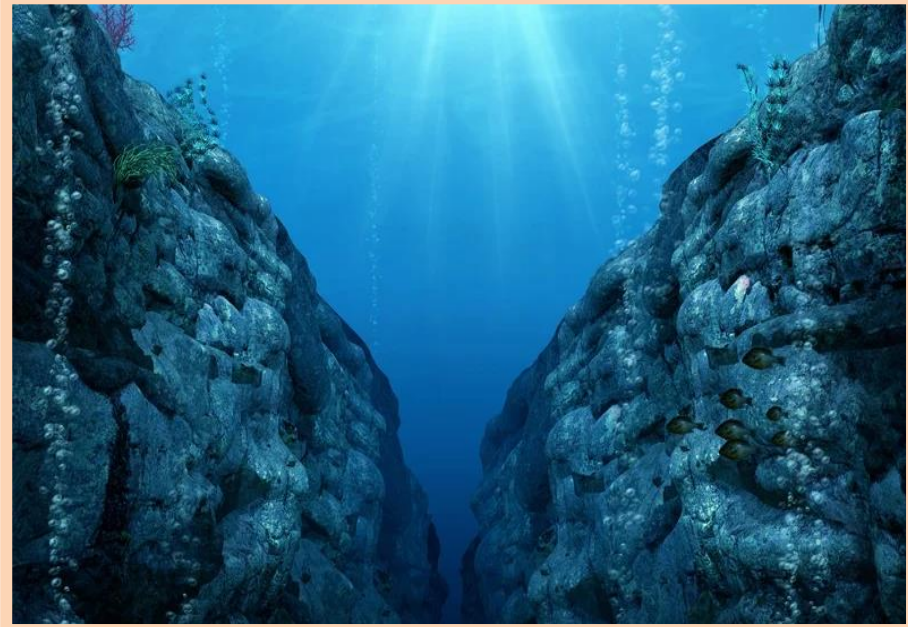
The large landmasses are known as the continent and the huge water bodies are called the ocean crust/basins.



# IMPORTANT FACTS



The highest mountain peak Mt. Everest is 8,848 metres above the sea level.



The greatest depth of 11,022 metres is recorded at Mariana Trench in the Pacific Ocean.



# DO YOU KNOW



## **Do you know?**

Edmund Hillary (New Zealand) and Tenzing Norgay Sherpa (India) were the first men to climb the highest mountain peak Mt. Everest on the planet earth on 29<sup>th</sup> May, 1953.

Junko Tabei (Japan) was the first woman to reach the summit on 16<sup>th</sup> May, 1975. The first Indian woman to climb the highest peak on 23<sup>rd</sup> May, 1984 was Bachendri Pal.

There are seven major continents. These are separated by large water bodies. These continents are –

Asia

Europe

Africa

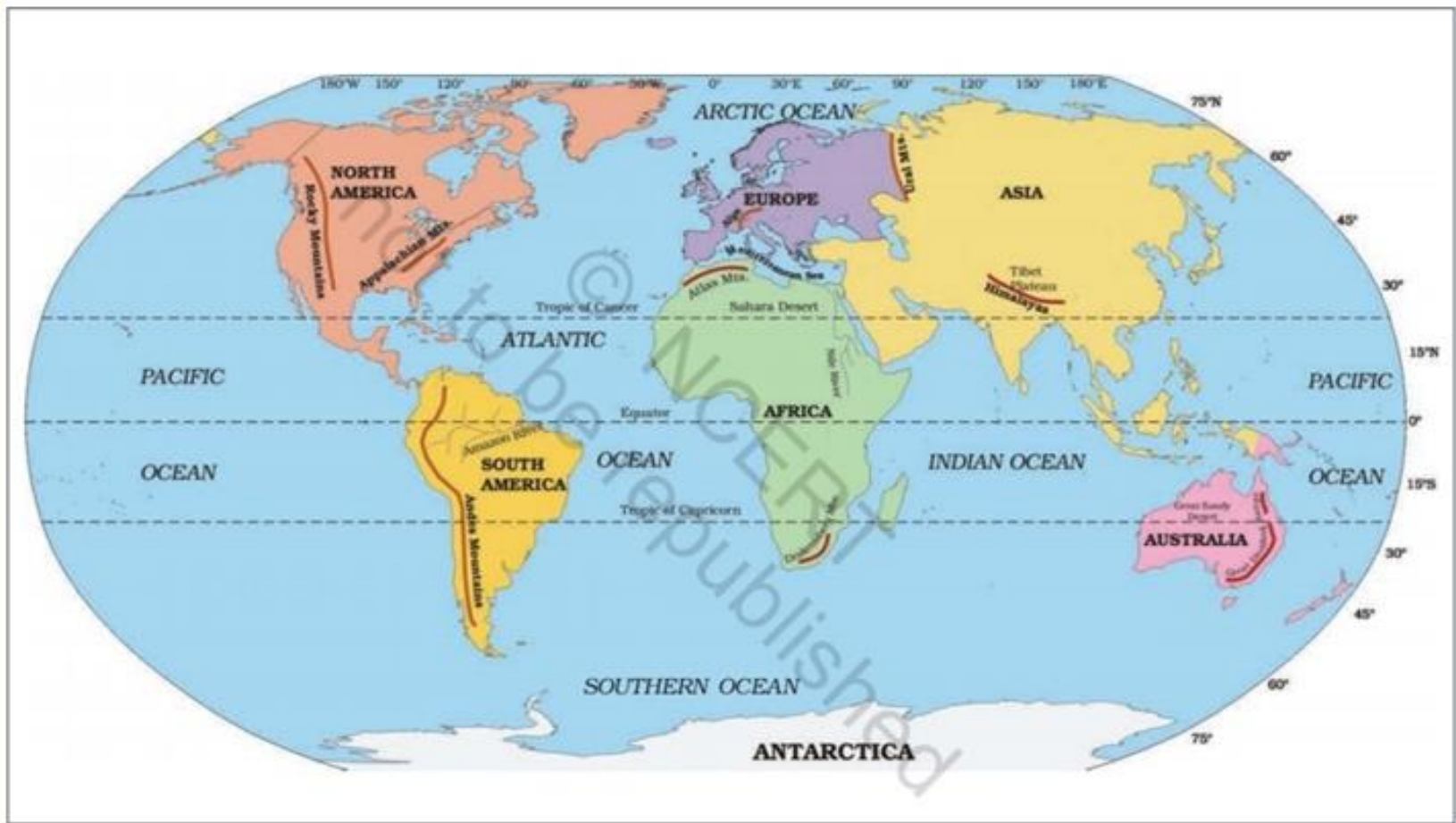
North  
America

South  
America

Australia

Antarctica

Look at the map of the world and notice that the greater part of the land mass lies in the Northern Hemisphere.



# Asia

Asia is the largest continent. It covers about one third of the total land area of the earth.

The continent lies in the Eastern Hemisphere. The Tropic of Cancer passes through this continent.

Asia is separated from Europe by the Ural mountains on the west.

The combined landmass of Europe and Asia is called the *Eurasia* (Europe + Asia).



# EUROPE



Europe is much smaller than Asia.

The continent lies to the west of Asia.

The Arctic Circle passes through it.

It is bound by water bodies on three sides.



# AFRICA

**Africa is the second largest continent after Asia.**

**The Equator or 00 latitude runs almost through the middle of the continent.**

**It is the only continent through which the Tropic of Cancer, the Equator and the Tropic of Capricorn pass.**

**A large part of Africa lies in the Northern Hemisphere.**



# IMPORTANT FACTS

The Sahara Desert, the world's largest hot desert, is located in Africa.

The continent is bound on all sides by oceans and seas.

The world's longest river the Nile, flows through Africa.



# NORTH AMERICA

North America is the third largest continent of the world.

It is linked to South America by a very narrow strip of land called the Isthmus of Panama.

The continent lies completely in the Northern and Western Hemisphere.

**Three oceans surround North America. Can you name these oceans?**

# South America

South America lies mostly in the Southern Hemisphere.

Which two oceans surround it on the east and the west?

The Andes, world's longest mountain range, runs through its length from north to south.

South America has the world's largest river. Can you name the river.



# AUSTRALIA



Australia is the  
smallest  
continent that  
lies entirely in  
the Southern  
Hemisphere.

It is surrounded  
on all sides by  
the oceans and  
seas.

It is called an  
*island  
continent*.



# ANTARCTICA

Antarctica, completely in the Southern Hemisphere, is a huge continent.

The South Pole lies almost at the centre of this continent.

As it is located in the South Polar Region, it is permanently covered with thick ice sheets.

There are no permanent human settlements.

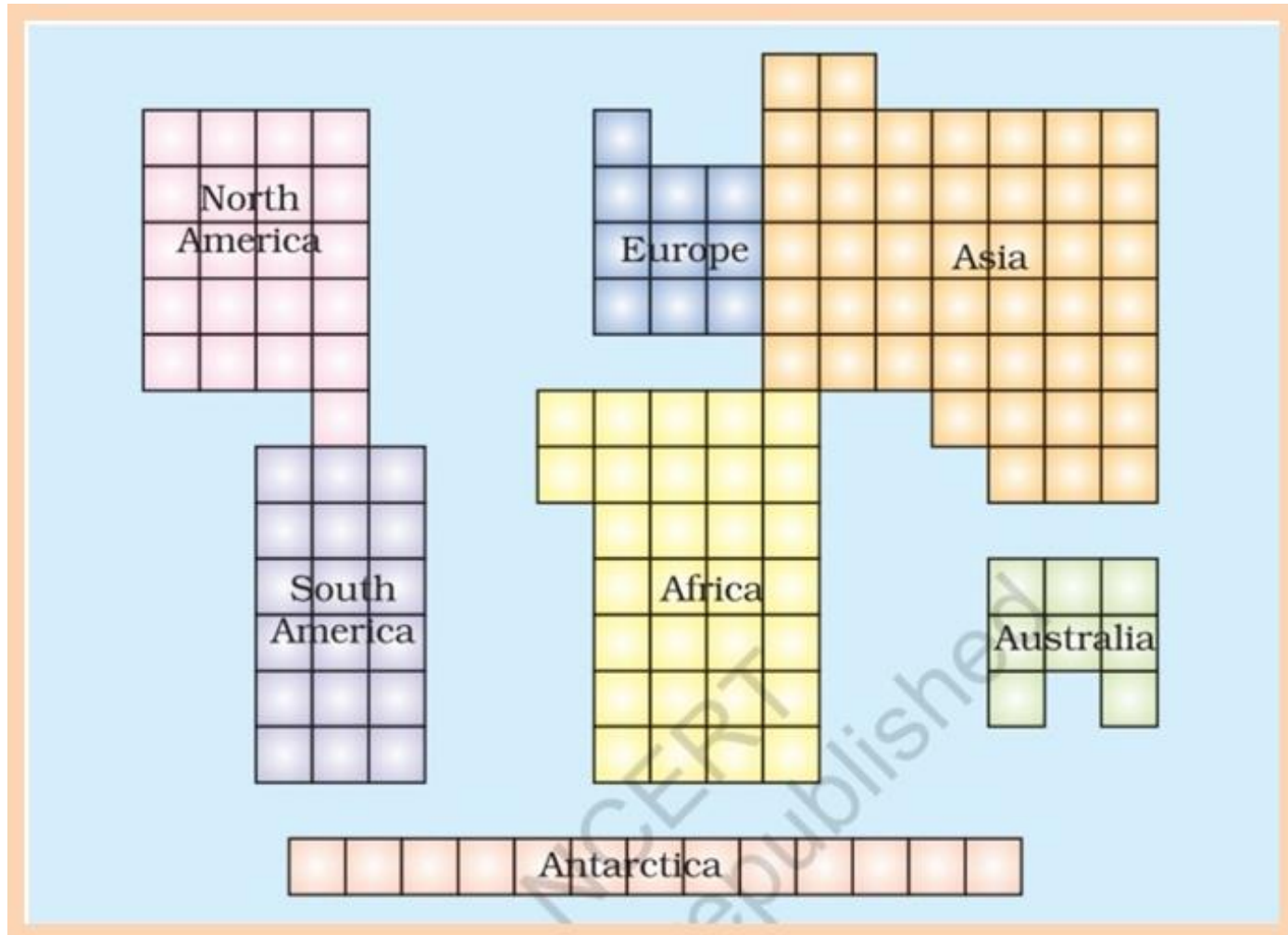
Many countries have research stations in Antarctica.

India also has research stations there.

These are named as Maitri and Dakshin Gangotri.

Count the squares given in the figure and answer the following :

1. Name the largest continent.
2. Which is larger – Europe or Australia?



Why is the earth called the blue planet?

The earth is called the *blue planet*. Because more than 71 per cent of the earth is covered with water and 29 per cent is with land.

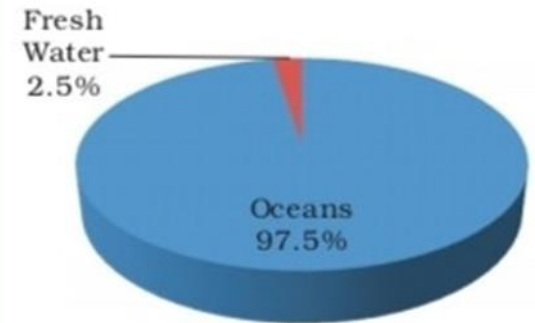
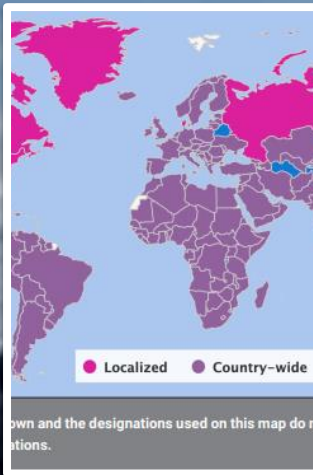
# **HYDROSPHERE**



**Hydrosphere consists of water in all its forms.**

**As running water in oceans and rivers and in lakes, ice in glaciers, underground water and the water vapour in atmosphere, all comprise the hydrosphere.**

**More than 97% of the Earth's water is found in the oceans and is too salty for human use.**



**Do you know despite being a 'blue planet' we face a shortage of water? Can you give reason?**



**A large proportion of the rest of the water is in the form of ice sheets and glaciers or under the ground and a very small percentage is available as fresh water for human use.**



# **OCEANS**

**Oceans are the major part of hydrosphere.**

**They are all interconnected.**

**The ocean waters are always moving.**



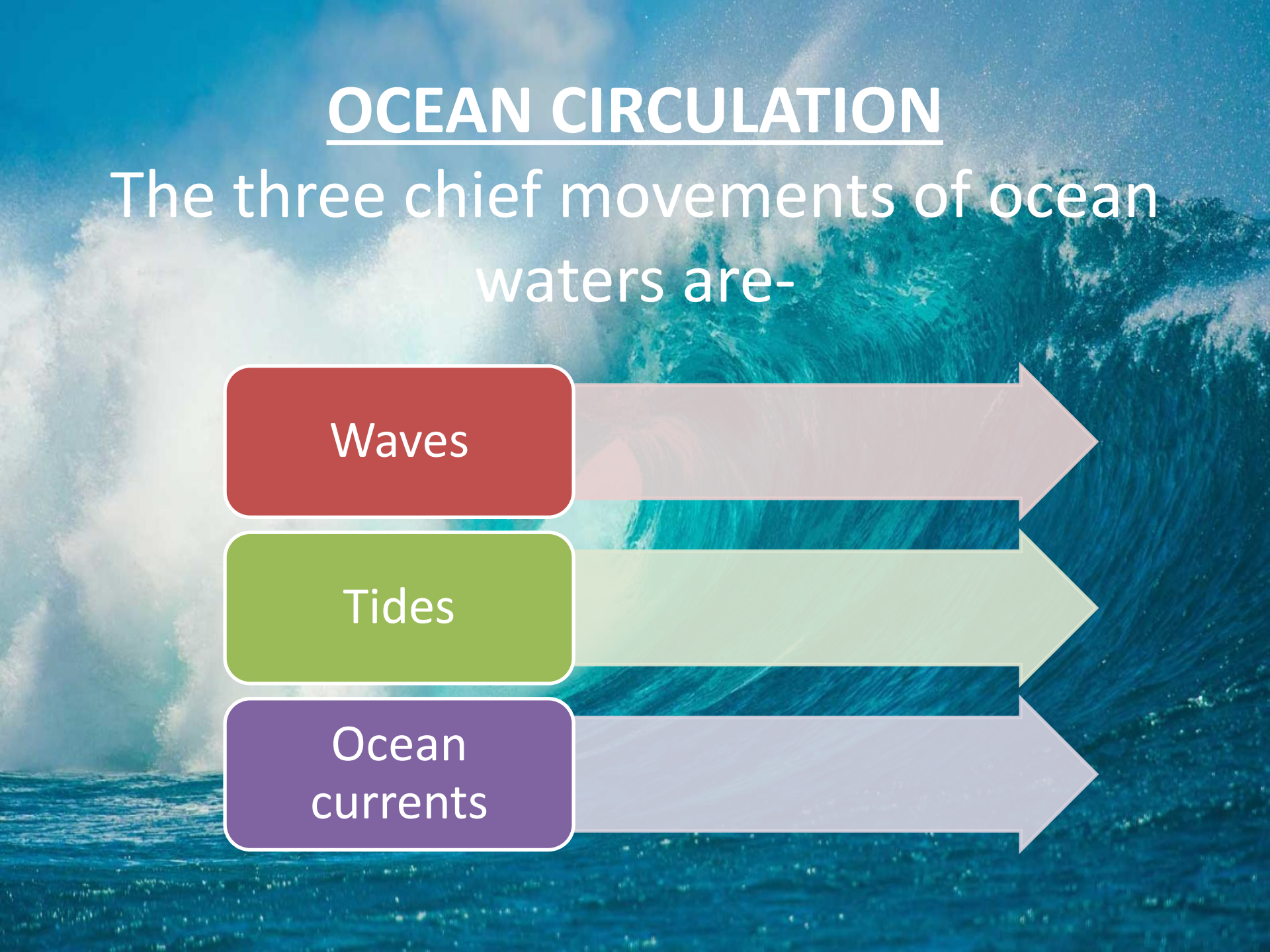
# OCEAN CIRCULATION

The three chief movements of ocean waters are-

Waves

Tides

Ocean  
currents



There are five major oceans.

**Pacific  
Ocean**

**Atlantic  
Ocean**

**Indian  
Ocean**

**Southern  
Ocean**

**Arctic  
Ocean**



# Pacific Ocean



The Pacific Ocean is the largest ocean. It is spread over one-third of the earth.

Mariana Trench, the deepest part of the earth, lies in the Pacific Ocean.

The Pacific Ocean is almost circular in shape. Asia, Australia, North and South Americas surround it.

# Atlantic Ocean



The Atlantic Ocean is the second largest Ocean in the world.

It is 'S' shaped.

It is flanked by the North and South Americas on the western side, and Europe and Africa on the eastern side.

The coastline of Atlantic Ocean is highly *indented*. This irregular and indented coastline provides ideal location for natural harbours and ports.

From the point of view of commerce, it is the busiest Ocean.





# Indian Ocean

The Indian Ocean is the only ocean named after a country, that is, India.

The shape of ocean is almost triangular. In the north, it is bound by Asia, in the west by Africa and in the east by Australia.

The Southern Ocean encircles the continent of Antarctica and extends northward to 60 degrees south latitude.

# Arctic Ocean



The Arctic Ocean is located within the Arctic Circle and surrounds the North Pole.

It is connected with the Pacific Ocean by a narrow stretch of shallow water known as Bering strait.

It is bound by northern coasts of North America and Eurasia.

# Atmosphere



## Word Origin

In the Greek language, *Lithos* means Stone; *Atmos* means Vapour; *Hudor* means Water; and *Bios* means Life.

Can you make words using the above?

The earth is surrounded by a layer of gas called the atmosphere.

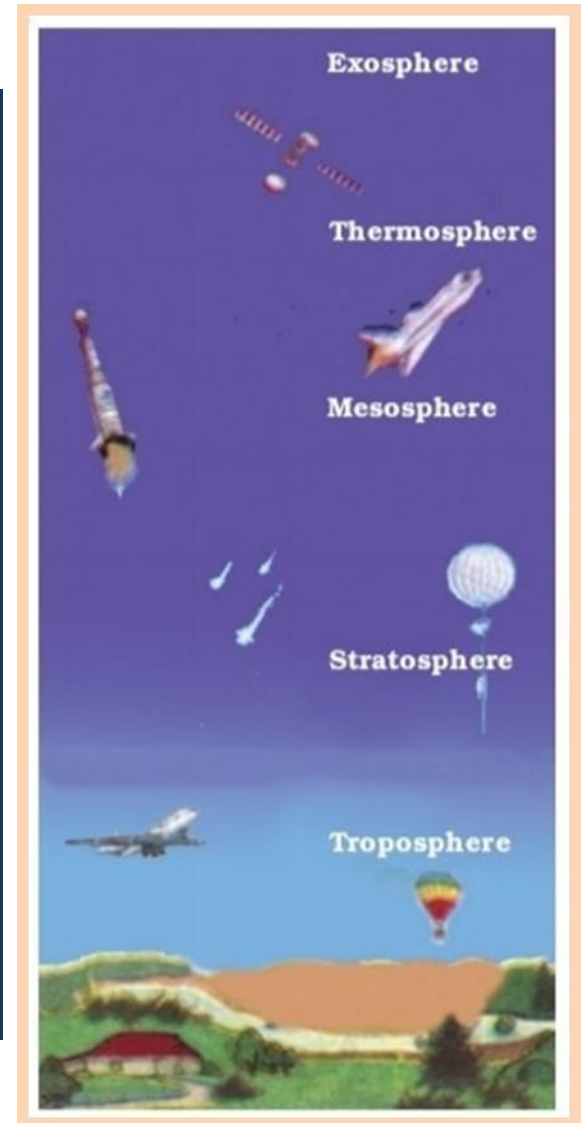
This thin blanket of air is an integral and important aspect of the planet.

It provides us with the air we breathe and protects us from the harmful effects of sun's rays.

The atmosphere extends up to a height of about 1,600 kilometres.

# Layers of the Atmosphere

- ❑ The atmosphere is divided into five layers based on composition, temperature and other properties.
- ❑ These layers starting from earth's surface are called the troposphere, the stratosphere, the mesosphere, the thermosphere and the exosphere.



# Composition of the atmosphere

The atmosphere is composed mainly of nitrogen and oxygen, which make up about 99 per cent of clean, dry air.

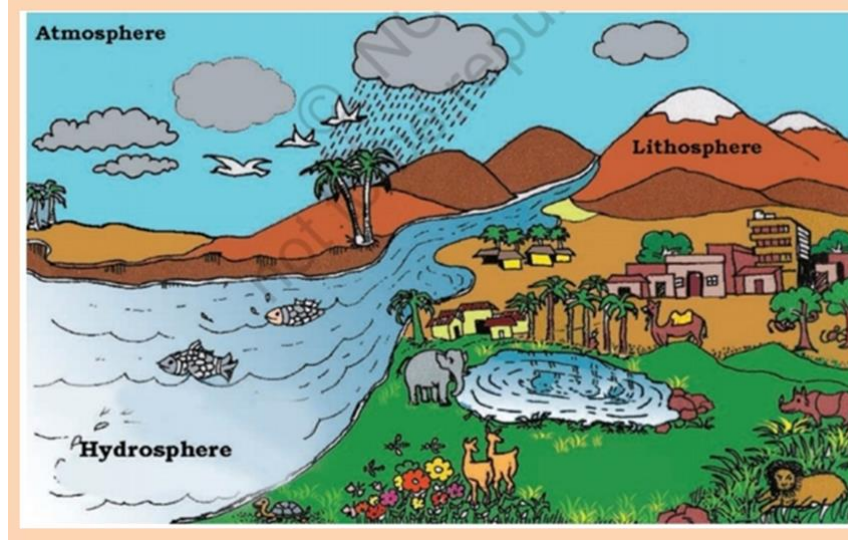
Nitrogen 78 per cent, oxygen 21 per cent and other gases like carbondioxide, argon and others comprise 1 per cent by volume.

Oxygen is the breath of life while nitrogen helps in the growth of living organisms.

Carbon dioxide, though present in minute amount, is important as it absorbs heat radiated by the earth, thereby keeping the planet warm.

It is also essential for the growth of plants.

# Biosphere



The biosphere is the narrow zone of contact between the land, water and air.



It is in this zone that life, that is unique to this planet, exists.



There are several species of organisms that vary in size from microbes and bacteria to huge mammals.



All the living organisms including humans are linked to each other and to the biosphere for survival.



The organisms in the biosphere may broadly be divided into the plant kingdom and the animal kingdom.





**The three domains of the earth interact with each other and affect each other in some way or the other. Explain the statement with the help of examples.**

- For example, cutting of forests for fulfilling our needs of wood, or clearing land for agriculture may lead to fast removal of soil from slopes.
- Similarly earth's surface may be changed due to natural calamities like earthquakes.
- For example, there could be submergence of land, as happened in the case of Tsunami recently.
- Parts of Andaman & Nicobar islands were submerged under water.
- Discharge of waste material into lakes and rivers makes the water unsuitable for human use.
- It also damages other forms of life.

# What is global warming?



Emission from industries, thermal power plants and vehicles, pollute the air.

Carbon dioxide (CO<sub>2</sub>) is an important constituent of air.

But increase in the amount of CO<sub>2</sub> leads to increase in global temperatures.

This is termed as global warming.

There is thus, a need to limit the use of resources of the earth to maintain the balance of nature between the domains of the lithosphere, the atmosphere and the hydrosphere

**Answer the following questions briefly.**

**1. What are the four major domains of the earth?**

**2. Name the major continents of the earth.**

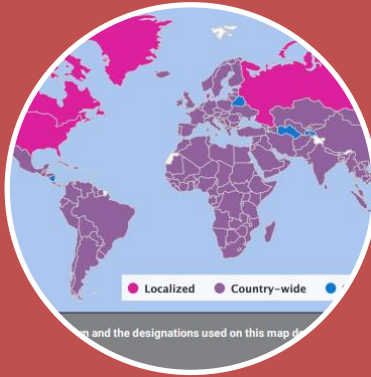
**3. Name the two continents that lie entirely in the Southern Hemisphere.**

**4. Name the different layers of atmosphere.**

**5. Why is the earth called the 'blue planet'?**

**6. Why is the Northern Hemisphere called the Land Hemisphere?**

**7. Why is the Biosphere important for living organisms?**



# THANK YOU

