



Africa-Sahara desert

2. Africa:

It is the second largest continent in the world. This continent is situated in both, the northern and southern hemisphere. The equator divides the continent into two equal halves.

River Nile, (6,695kms) the longest river in the world and the Sahara, the largest desert in the world, are found in this continent. This continent is rich in mineral resources and has dense forests.

3. North America:

This continent is surrounded by the Arctic ocean, Atlantic ocean and Pacific Ocean. The Rocky mountains situated along the west coast is a very long chain of mountains.

4. South America:

This continent lies almost entirely in the southern hemisphere. The Andes, the world's longest mountain range and River Amazon (6,586 kms) the world's largest river is situated in this continent.

5. Europe:

This continent lies to the west of Asia. The Alps mountain range is situated in this continent.

6. Australia:

Australia is referred to as 'Island continent', because it is surrounded by oceans on all the four sides. It consists of many islands like New Zealand and Fiji. Fiji islands, Papua and New Guinea are called oceanic islands. The Great Barrier Reef, the world's largest coral reef is situated off the east coast of Australia.

7. Antarctica:

This continent is situated in the South Pole and is entirely covered with snow. It is a very cold place. Penguins, Seals and other living creatures live here.

Our Country has set up the Dakshin Gangotri and Maitri research stations. Throughout the year Indian scientists conduct many experiments in this continent.

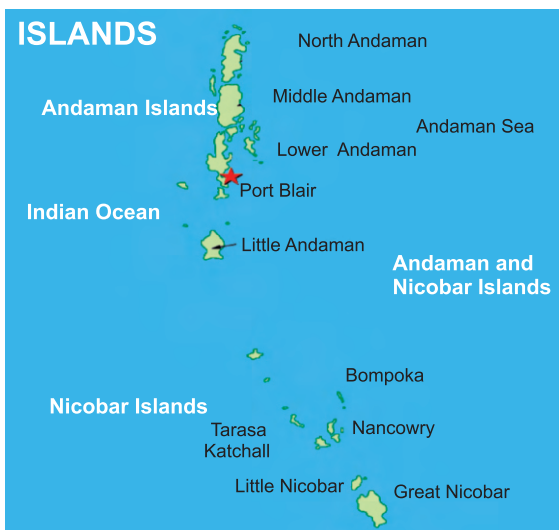


Antarctica - Maitri research station

Island:

A piece of land surrounded by water on all sides is called an island. Sri Lanka is an island. A group of islands is called an archipelago.

Locate an island group belonging to India.



Oceans:

71% (two third) of the earth's surface is covered by water. A large stretch of water covering a huge area is called an **Ocean**. Just like the mountains, plains and plateaus are part of the Earth. Oceans are also a part of the earth.

There are **five oceans** on the Earth. They are the Pacific ocean, the Atlantic ocean, the Indian ocean, the Arctic ocean and the Antarctic ocean.

For our convenience oceans are divided into **seas**. The sea to the east of Tamil Nadu is called the **Bay of Bengal** and the sea to the west of Kerala is called **Arabian sea**.

Locate two other seas on the world map.

1. Pacific Ocean:

It is the deepest ocean in the world. The volcanic mountains surrounding the Pacific Ocean are called the **Pacific Ring of Fire**.

The deepest **Mariana Trench** is located in the Pacific Ocean. This trench is so deep that even Mt. Everest is not enough to fill it.

2. Atlantic Ocean:

It is the second largest ocean in the world. **Hurricanes** are very common in this ocean.

3. Indian Ocean:

It is the third largest ocean in the world. India receives rainfall from the **monsoons** which originate in this ocean.

4. Antarctic Ocean:

The ocean surrounding the continent of Antarctica is called the Southern ocean or Antarctic Ocean.

5. Arctic Ocean:

This is the smallest ocean in the world. It surrounds the North Pole. This ocean has many **icebergs**.

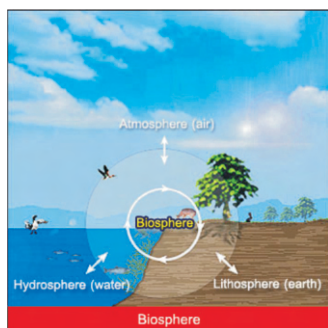
Land, Water, Air:-

Apart from the seas, the rivers, lakes, ponds and tanks are the other water bodies. The peaks of the Himalayas, Arctic circle and Antarctic circle are **covered with snow** and not with water.

The atmosphere is filled with **water vapour**, cloud and moisture. The water on earth is found in **three forms namely solid, liquid and gas**. Apart from land and water, air is present in the earth.

Though we are always surrounded by **air**, we feel its **presence**, only when there is **wind and cyclones**.

The solid portion of the earth on which we live is called the **Lithosphere**. Water covers a large area of the earth's surface and this area is called **Hydrosphere**. The gaseous layer that surrounds the earth is called **Atmosphere**.



Apart from water, land and air, the life that exists here is unique to this planet. Plants, animals and millions of micro organisms are found on the land surface.

Let us learn

The zone in which living organisms exist is called as **Biosphere**. Lithosphere, Hydrosphere and Atmosphere together forms Biosphere. Hence if any one of these is **polluted**, the living organisms are affected.

Trees, plants, creepers, worms, insects, birds, animals, micro organisms and other millions of living forms exist in the biosphere. The living organisms extend upto many kilometers in the atmosphere.

Apart from many kinds of fish, plankton which serves as food for the fish are also found in the ocean.

Living organisms are found at great depths where geysers are present. Worms and micro organisms are present deep in the soil. **Many species of plants and animals are present on land.**



Peninsula is a piece of land that is surrounded by water on three sides. India is a peninsula.



A strait is a narrow stretch of water that connects two large water bodies.

For example the Palk strait between India and Sri Lanka.



A gulf is a hollow carved out in the sea coast which lets the water reach deep inland. A bay is an inlet of the sea with a wider opening than a gulf. Examples of these are the Bay of Bengal and the Persian Gulf. Which are the gulf countries? Why are they called so? Refer a world map.



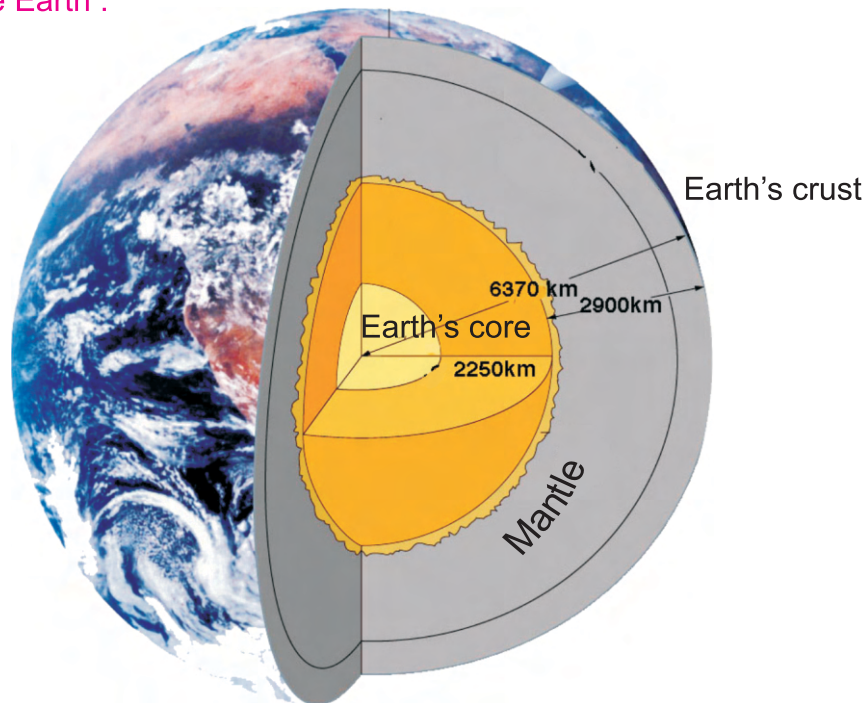
An isthmus is a narrow strip of land connecting two large land masses. The Isthmus of Panama connects North America with South America.

Lithosphere, hydrosphere and atmosphere do not exist separately. They are interdependent and interact with each other. For example sea water evaporates and forms water vapour. This mixes with the atmosphere. The surface of the Earth is heated by the sun's rays, as a result of this air on the land surface gets heated.

This hot air rises upward towards the cooler atmosphere. Therefore changes take place in the atmosphere. As a result of this, air moves and causes winds and breeze.

Land, water and air together help the plants to grow.

Structure of the Earth :



When an apple is cut into two halves you can see the skin, flesh and seeds. Similarly what can you see if you cut the earth in to two halves?

The core is in the semi solid state. Nickel and iron is found in abundance in this layer. This is called as the inner core. Minerals are found in the molten stage around the core. Here the temperature is very high. It is approximately $5,000^{\circ}\text{C}$.

The core is surrounded by the Mantle. 85% of the Earth's minerals are found here. The entire layer consists of rocks in the solid and semi solid state. Like the skin of the apple, the Earth's outer crust is a thin layer.

The continents and oceans are found in this layer. The thickness of the Earth's crust below the oceans is 5-10 km. The thickness of the crust varies from 30 – 50 kms. on the continents.

Evaluation

I. Choose the correct answer

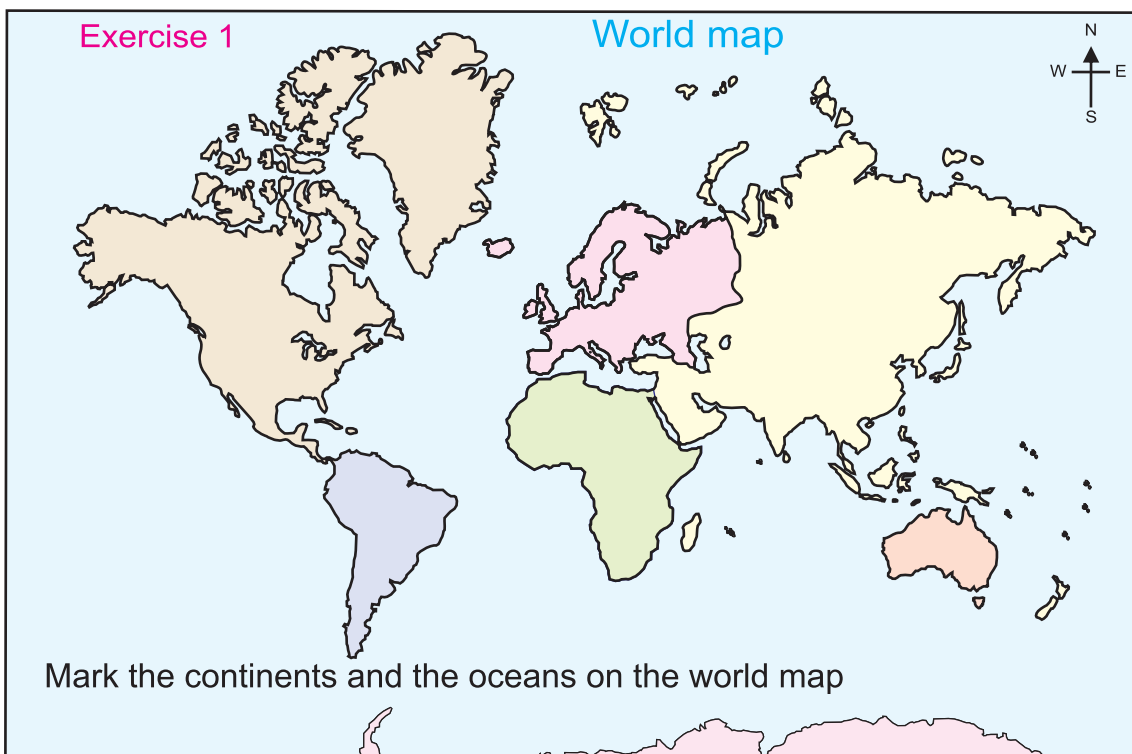
1. Land that is surrounded by water on all the four sides is called an _____.
a) strait b) island c) peninsula
2. The world's deepest Mariana trench is located in the _____ Ocean.
a) Pacific b) Atlantic c) Arctic
3. Sri Lanka is an _____.
a) island b) peninsula c) strait

II. Answer the following questions

1. Distinguish between a plain and a plateau.
2. Define a peninsula. Give an example.
3. Why is the earth called a 'living planet'?

III. Map skill

1. Mark the continents and the oceans on a world map.
2. Mark a few peninsulas, bays, gulfs, straits, isthmus and islands on a world map.



FORMATIVE ASSESSMENT

1. Write the name of the following using Atlas

Islands			
Peninsula			
Gulf			
Bay			
Strait			

2. Cross word puzzle

From left to right

1. The longest river
2. The largest desert
3. Island continent
4. Land surrounded by water

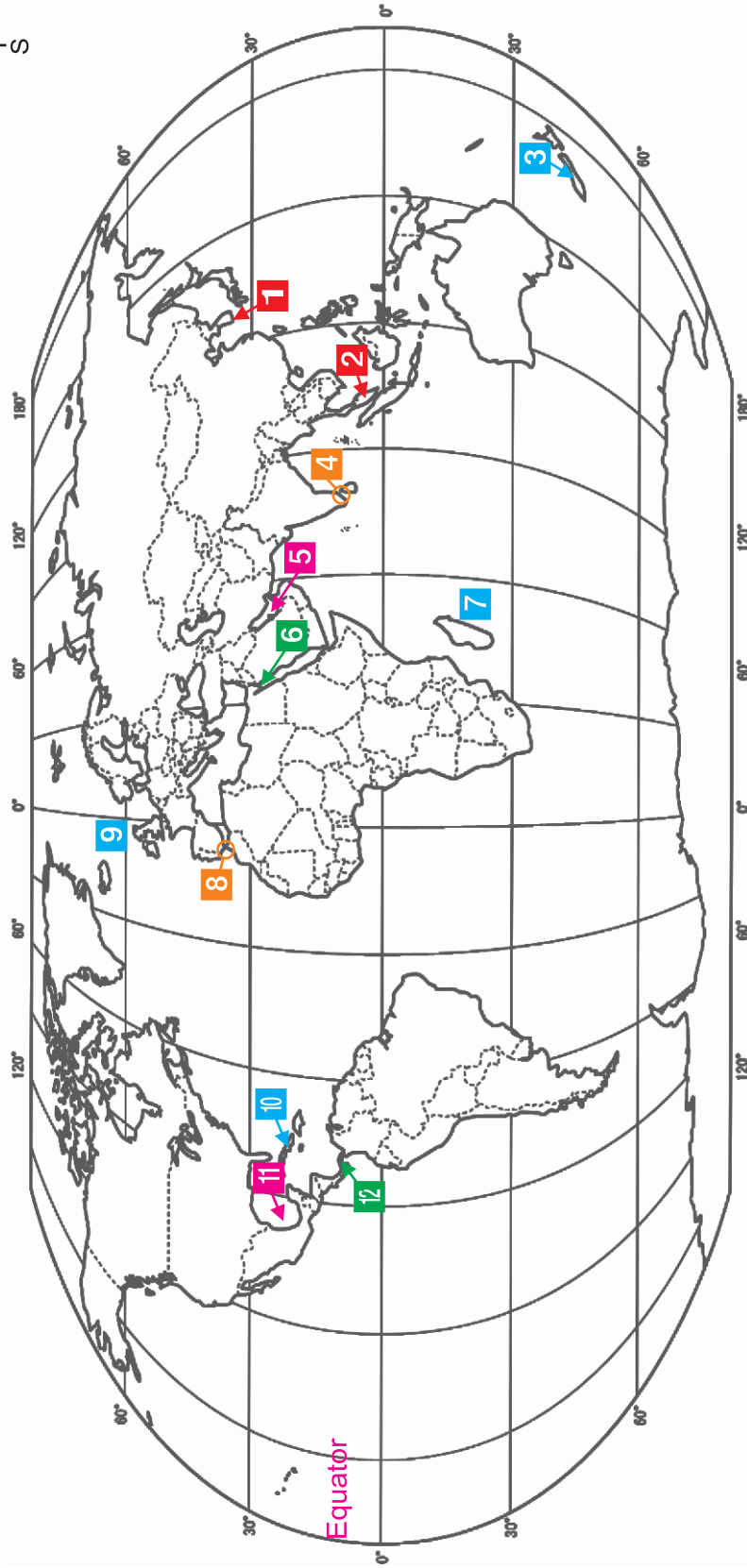
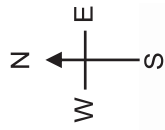
From top to down

5. The largest continent
6. The highest mountain range
7. The deepest ocean
8. The largest river
9. The longest mountain range
10. The largest plateau

					2		6	8	9	
3										
5										
			7							10
4										
		1								

Exercise 2

World Map



Mark the following on the world map:

Peninsula	Bay / Gulf	Strait	Isthmus	Island
1.	1.	1.	1.	1.
2.	2.	2.	2.	2.
3.	3.	3.	3.	3.
4.	4.	4.	4.	4.

2. MAPS AND GLOBE

What is the shape of the Earth in which we live? Is it in the shape of a ball? Is it in the shape of an orange? What is its true shape?



Until the late 17th century, people had many wrong ideas about the shape of the Earth because they did not know the shape of the Earth. We sent rockets and satellites into space and when the Earth was viewed from space, many old beliefs changed. Will you be able to see the complete shape of an object if you keep it very close to your eyes? If you keep your book very close to your nose, you will not be able to see its full view. Only if you keep it at a certain distance you will be able to see it fully.



The Earth is a big sphere. Our Earth is slightly bulged at the equator and slightly flattened at the poles. The shape of our Earth is unique. The shape of the Earth is called as a Geoid.

MAPS

A map is a representation of the Earth or part of it and is drawn to scale on paper or on cloth.

What is meant by scale? Can we draw the map of our village or town on a sheet of paper? Even if we draw it on a large sheet of paper, will we be able to spread this paper and view the map?

Hence to represent one kilometre on land, we reduce it and draw it as one centimetre on the map. We draw the map of the entire place in the similar way and say that the map is drawn to a scale of 1 centimetre = 1 kilometre.

In earlier days, maps were not required because the people lived in one place. Then people started to move from place to place, either in search of food or due to the change in seasons.

Later, merchants travelled from one country to another country for trade and commerce. People used maps to travel in the correct route. Migration created the need for maps.

To prepare and understand maps we need training. If we want to go to a cinema hall in our neighbouring city, we may not know where it is. Our friend would say, "Don't you know it is in the street behind the bus stop which is opposite to the telephone booth"?

If you still don't understand, he will draw a route map on a paper. This is a map without a scale. This is called a **sketch map**.

An architect or a civil engineer will draw a plan of a building before construction. Have you seen that plan? (During an activity class, You can

bring such a plan to your classroom and the students can have a look at it.) It is called a blue print which is commonly called as a **plan**.

World maps and maps of different countries look better than these maps.

Think: Will maps have only lines?

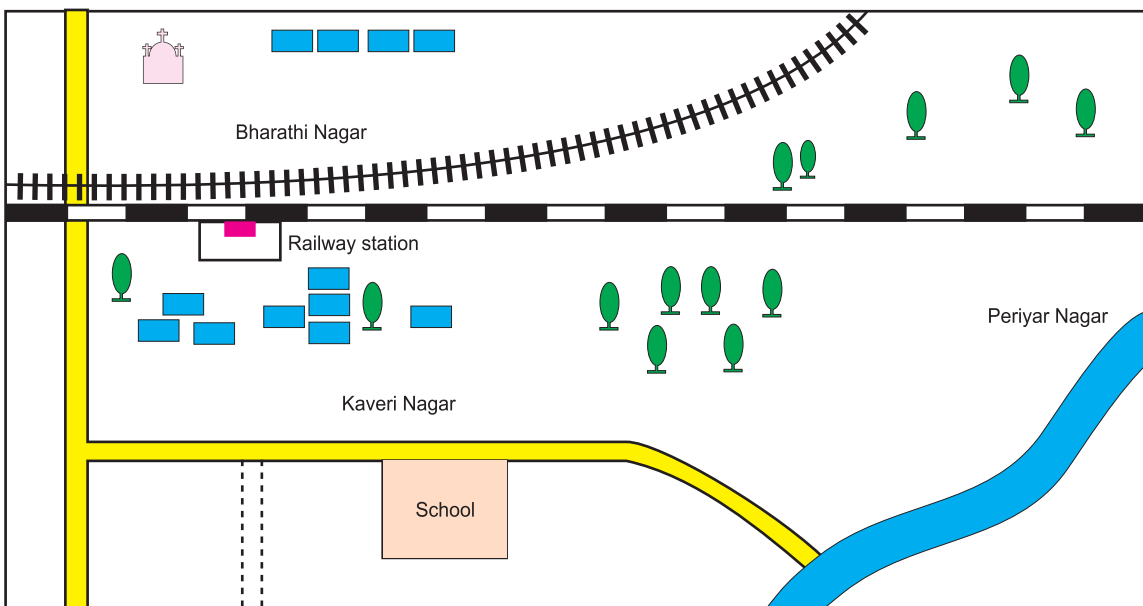
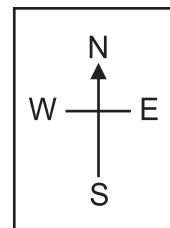
Conventional Signs and Symbols help us to understand directions and different features on a map.

The **direction** is indicated on the top right hand corner of every map like the one given below. This is the sign that shows the direction in a map.

Let us do

Draw a sketch map to show the route from your home to school.

Sketch Map



We know which is the north and the south direction of the place where we live. We can easily understand the direction by unfolding the map and by placing the north of the map in line with the north of our place.

Scale







Scale is indicated at the bottom of the map. Scale is the distance between two points or places on the map to the corresponding distance on the ground.

Conventional Signs and symbols

Can we draw on the map the mountains, forests, rivers, roads, bridges, buildings, railway lines and other land features of the Earth in the same size and shape?

We draw them with the help of certain symbols. The symbols are used within the map itself. The explanation for these symbols are given on the right or left corner of the map. It would be easy if the same symbols are used everywhere, hence standard, uniform Conventional symbols are used throughout the world.

Conventional Signs and symbols

International boundaries	— • — •
State boundaries	— • — • —
District boundaries	— — — —
Railway lines	— — — —
Railway station	 RS
River	
Well	
Temple	
Mosque	
Church	

Classification of maps

All the objects and the information about the earth cannot be shown on the same map. Hence maps can be classified into three types.

1. Physical features like mountains, plateaus, rivers and oceans are drawn on a Physical map. eg. Refer the Physical map of India which is given.

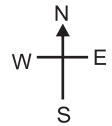
2. Countries, states, districts, cities, villages and other boundaries are drawn on a Political map. eg. Refer the Political map of India and District map of Tamil Nadu which are given.

3. Maps that show temperature, forest, and minerals resources are drawn based on a theme, hence they are called Thematic map. eg. the Transport map of India and the Industrial map of Tamil Nadu which are given.

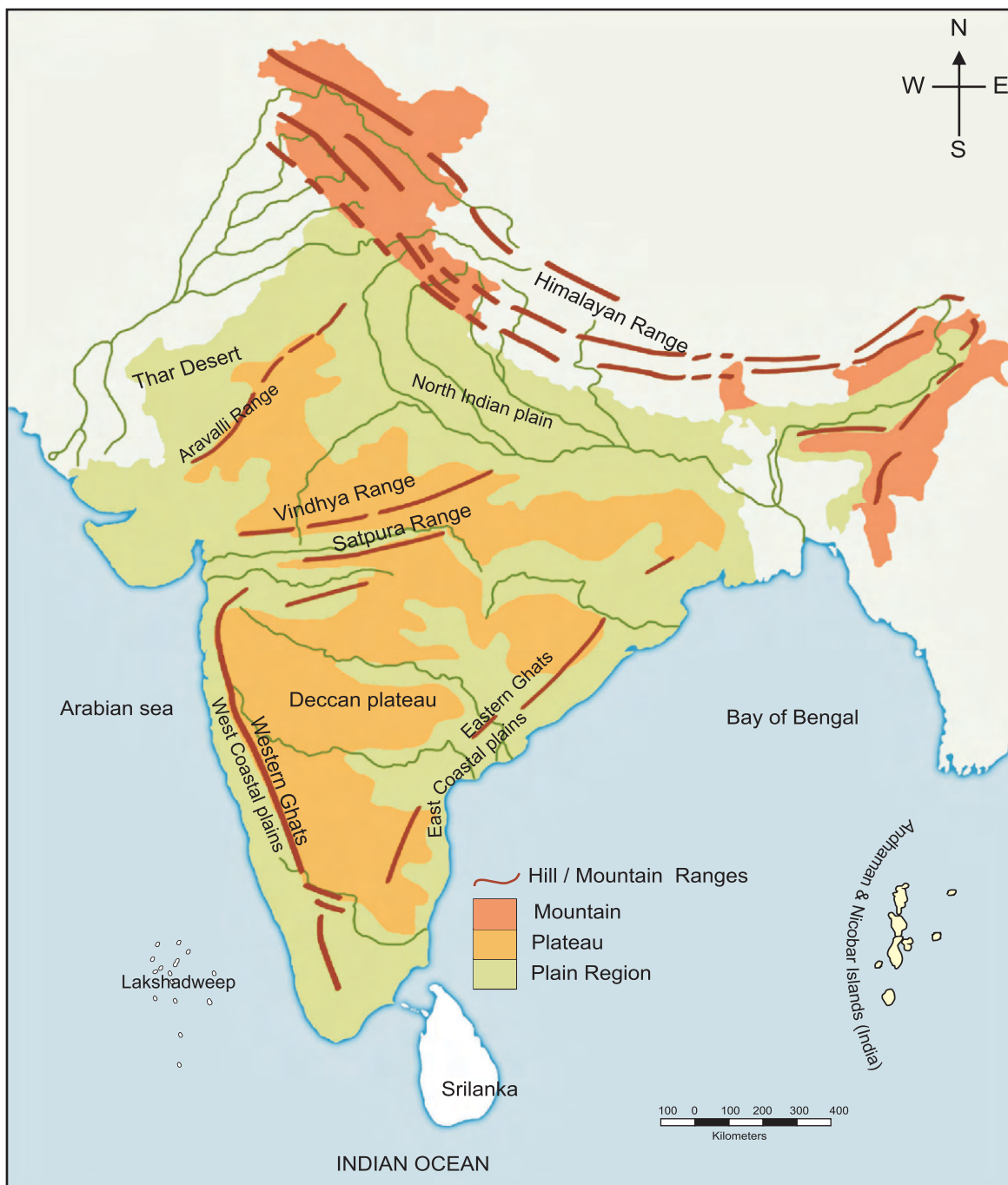
Uses of maps

1. It is used to locate places.
2. It is used to locate resources that are found on the earth.
3. It helps the military to move its troops.
4. It helps in planning.
5. It helps us to know the movement of the satellite and planets in the sky.
6. It is used for teaching and learning in a class room.

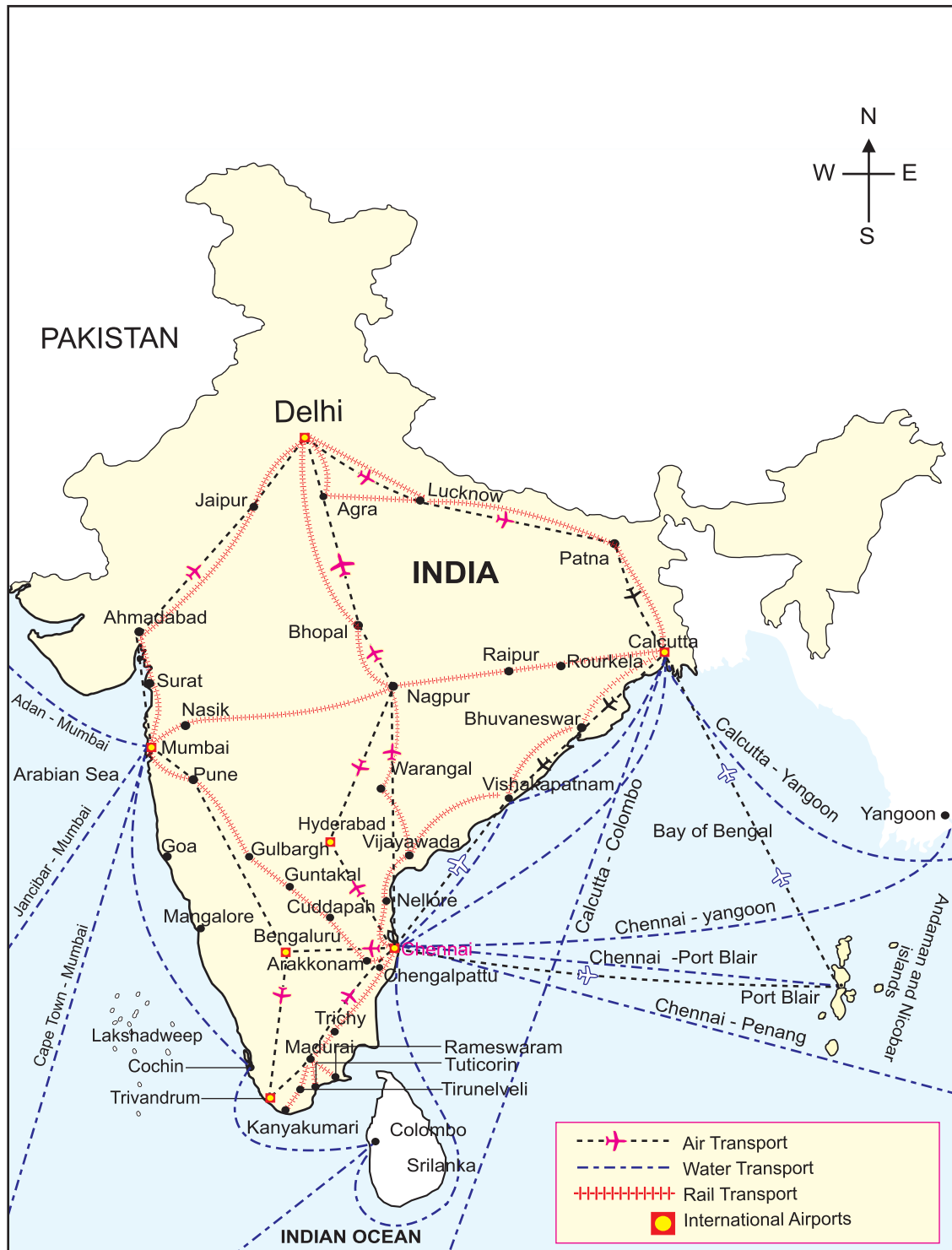
INDIA - POLITICAL



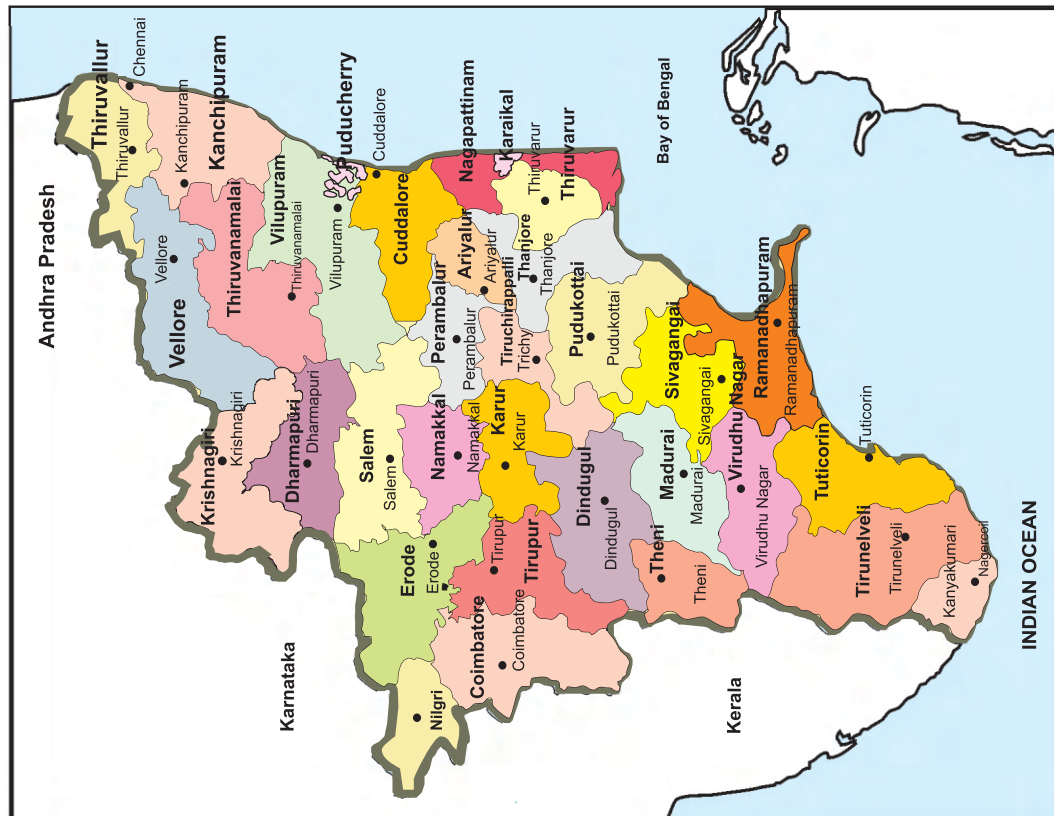
INDIA - PHYSICAL



INDIA - TRANSPORT



Tamilnadu - Districts



Tamil Nadu - Industries





Globe

Globe

We cannot see the complete shape of the Earth from the Earth. Globe is a model of the Earth, which helps us to locate continents, oceans, islands and other landforms with the help of the latitudes and longitudes on which they are located.

A Globe is a small true model of the earth. Globe is also made to an inclined axis like the rotating earth which is inclined at an angle of $23\frac{1}{2}^{\circ}$ on its axis.

The Lines on the Earth

When we travel from one place to another we enquire what is the distance between the two places. We erect milestones on roads to show the distance (kilometre). We say that the place is 15 km towards the east.

Where is a mountain located on the earth? Where is a country located on the earth? At which point exactly is the ship that sails on the sea? How can we accurately calculate these distances?

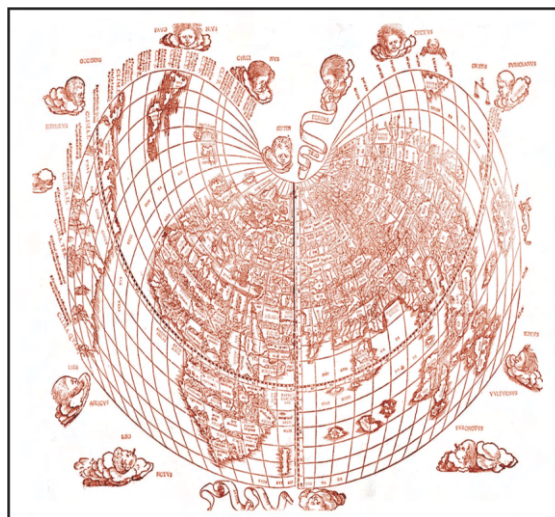
We draw few **imaginary lines** on the earth's surface. When we want to locate a place, we try to find out between which two lines this place is found.

Latitudes are imaginary lines that run from the **east to the west** on a globe. (on a map also)

Longitudes are imaginary lines that run vertically(or) from the **north to the south**.

The line that runs in the centre of the Earth from east to west is called as the **Equator**.

The Earth is a sphere and it consists of 360° . The **equator is the 0° latitude**. This is an important latitude. **Ptolemy** was the first man to draw latitudes and longitudes. He was a **Greek astronomer** who lived in the 2nd century B.C. (The world map that was drawn by him is given below). The Earth's surface to the north of the Equator (0° latitude) is called as **Northern hemisphere**. The Earth's surface to the south of the equator is called as the **Southern hemisphere**.



Ptolemy's world map

Puvi, Boomi, Ulagam, Ulagu, Gnam are some of the names given for the earth in Tamil.

A space observatory is located at Greenwich in London. The longitude that passes through Greenwich is called as 0° longitude. This is also called as the Greenwich meridian.

To identify a particular latitude we have to say how many degrees it is away from

the north or south of the Equator. For eg. 10°N latitude is the 10^{th} line north of the Equator and 10°S latitude is the 10^{th} line south of Equator.

Similarly it is indicated as 10°W and 10°E of the Greenwich meridian because the Greenwich meridian is considered as a central longitude. 'W' stands for places west of the Greenwich meridian and 'E' stands for the places east of Greenwich meridian.

How can we locate India?

Location of India

