

The world we live

01

The **Earth** is the only planet that has a conducive atmosphere to support plant and animal lives. It is a marvellous creation of nature. The Earth rotates around its own axis while revolving around the sun in an elliptical orbit. It takes about 23 hours and 56 minutes for one complete rotation (Fig. 1.2) and 365 days and 6 hours to revolve round the sun (Fig. 1.1).

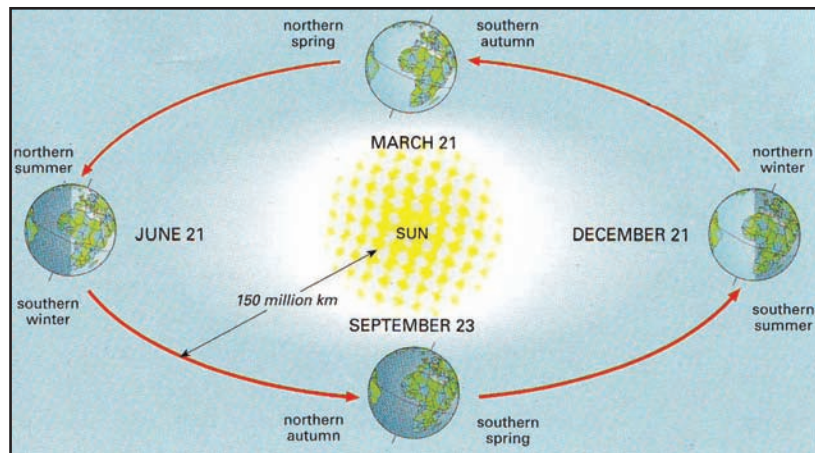


Fig. 1.1 : Revolution of the Earth round the sun

This chapter enables you to study the shape of the Earth, its latitudes and longitudes and its significance as well as continents and oceans.

Shape of the Earth

The teacher who entered the class room with a globe, started a discussion with the students about the shape of the Earth.

Teacher

You have some ideas about the Earth we live in. Let us learn about the shape of the Earth today.

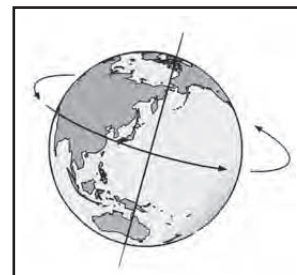


Fig.1.2: Rotation of the Earth

The teacher divided the class into groups and distributed some information sheets among the groups and asked them to read those by exchanging. Information given in those sheets are as follows:

People of early ages believed that the Earth was flat. But, now it has been well proved that the Earth is round (Fig 1.3).

If we observe the horizon of the sea from a ship, aeroplane or from a very high place, the horizon is curved. This curvature proves that the Earth is round in shape.



Fig.1.3: Satellite Picture of the Earth

The photographs, taken by aeronauts show the planet Earth is round in shape (Fig. 1.3).

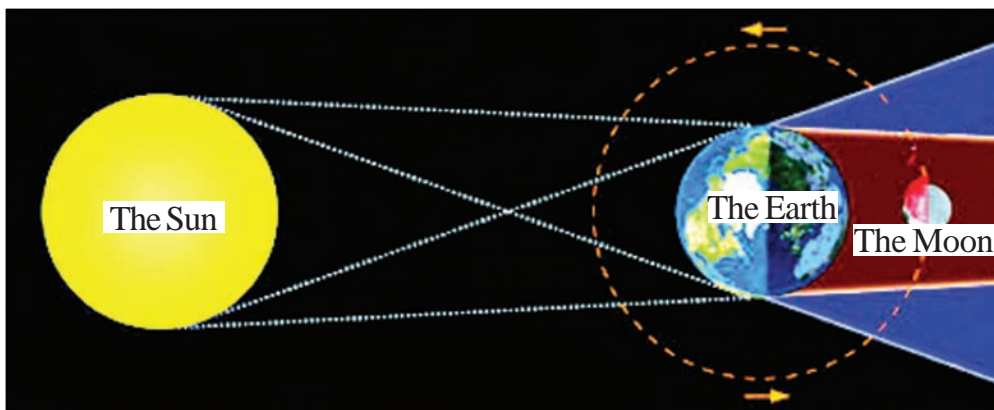
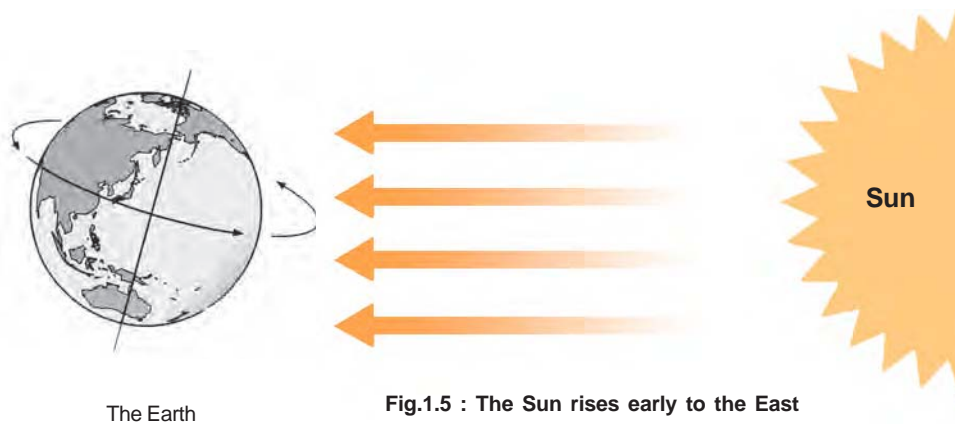
Because of the Earth's roundness, we can travel round the Earth by sea, land and air. If we go or fly from Colombo through Tokyo, Los Angeles, New York, London we can reach Colombo again circling round the world. This proves the world is round in shape (Fig. 1.4).

If the Earth is flat, every one in the world should see the rising sun at the same time. But the sun rises early to the East and approaches gradually to the West as the Earth is round in shape (Fig.1.5). This explains the time differences between Eastern and Western locations.



Fig.1.4: Flight round the Earth

Pictures of lunar eclipses provide another example. The shadow of the Earth falls on the moon in a lunar eclipse. This shadow is curved in shape. That is a typical example showing the shape of the Earth (Fig. 1.6).



Teacher

Have you already read the information sheets? Tell me what is the shape of the Earth.

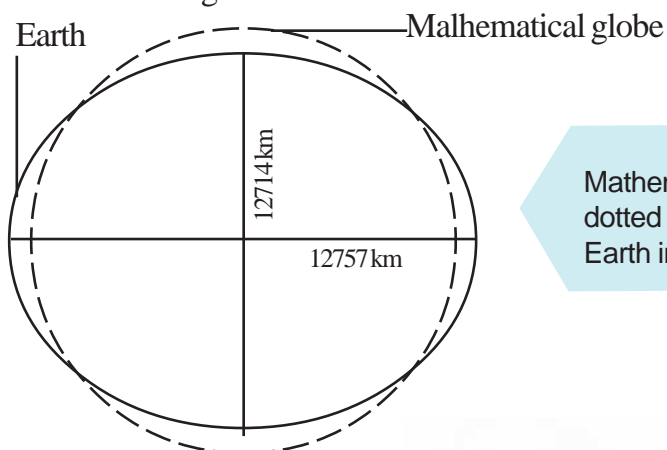
Saranga

Madam, all these information sheets have mentioned that the Earth is round. Is it actually true that the Earth is round like a ball?

Teacher

Good question. Now all the evidences in these sheets indicate the shape of the Earth is round in general terms. But actually it is not a mathematical globe. I will explain why.

The diameter of the equator running round the Earth is not similar to the North and South pole diameter of the Earth. The latter is shorter than the equatorial diameter. The diameter of the equator has been measured as 12,757 km while the distance from North pole to South pole is calculated as 12,714 km. Thus, the axis of the Earth from North pole to South pole is 43 km shorter than the diameter of the equator. This proves that the Earth is not a mathematical globe.



Mathematical globe is shown by dotted lines and the shape of the Earth in a dark line (Fig. 1.7).

Fig.1.7 : Equatorial and polar diameters

Latitudes and Longitudes

Teacher

Look at the globe carefully. You may be able to see another important feature on the globe. You may have learned about latitudes and longitudes in Grade 6.

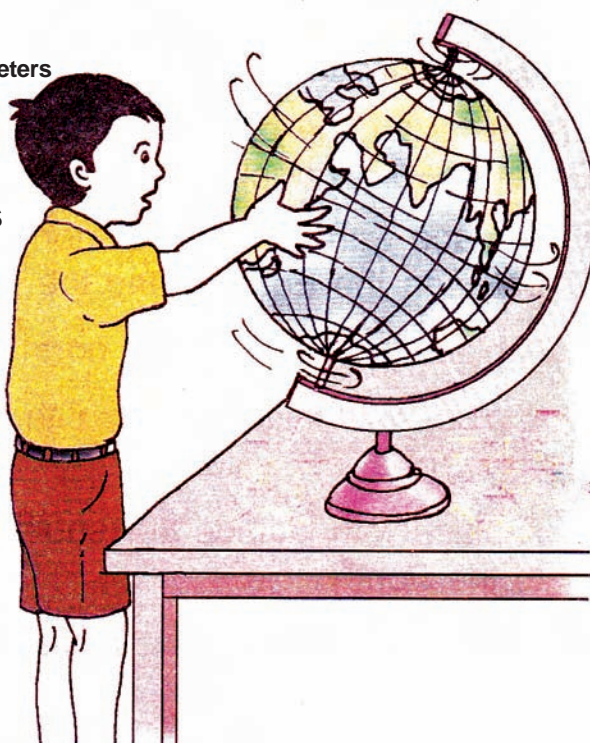


Fig. 1.8 : Globe of the Earth

Teacher

Kasun! tell us what you know about latitudes.

Kasun

The imaginary lines drawn from West to East parallelly circling round the globe are called **latitudes**. The latitude in the middle which is indicated by 0° is named as equator. The Equator divides the Earth into two equal parts. The lines North of the equator are North latitudes while the lines to its South are South latitudes. Look at the figures. 1.9 and 1.10.

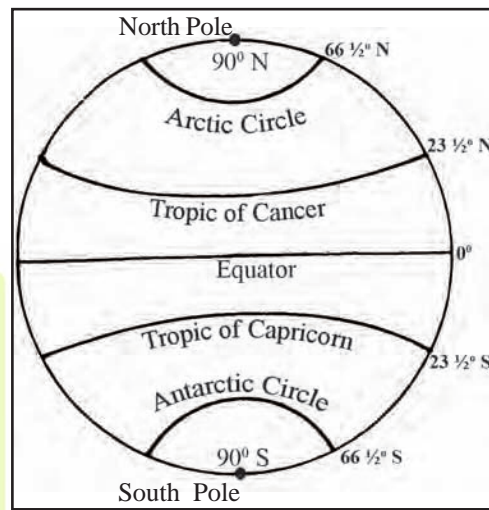


Fig 1.9 Major Latitudes

Teacher

Very good ... son. I will explain some more details about latitudes other than what is said by Kasun.

$23\frac{1}{2}^\circ$ North latitude is named as the Tropic of Cancer.

$23\frac{1}{2}^\circ$ South latitude is named as the Tropic of Capricorn.

$66\frac{1}{2}^\circ$ North latitude is called Arctic Circle and $66\frac{1}{2}^\circ$ South latitude is called Antarctic Circle. As we go towards North or South from the equator the latitudes become shorter until the 90° N and 90° S are reduced to point locations.

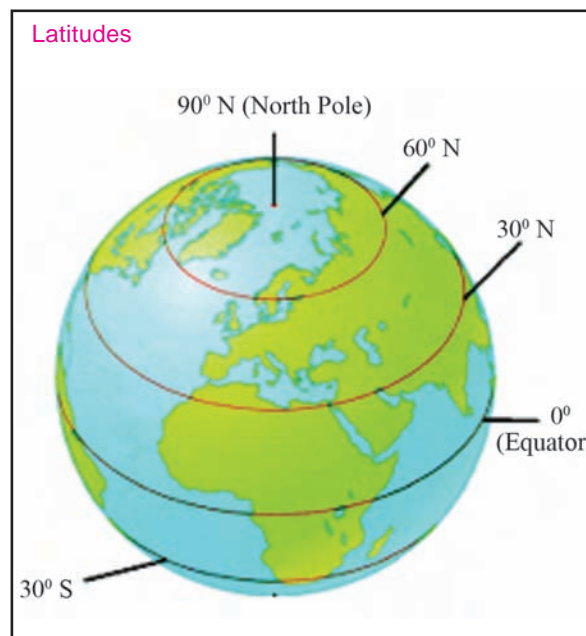


Fig. 1.10 :Latitudes

Longitudes

As you have observed, there are imaginary lines drawn vertically from North pole to South pole on the globe. They are called **longitudes**. Longitudes are also imaginary lines that are numbered in degrees. There are longitude lines of 360° around the Globe. The 0° longitude lies over Greenwich near London in England. From 0° (Greenwich) longitude, which is considered as the Prime Meridian, other longitudes are numbered westwards and eastwards upto 180° . This line is common to both West and East. The International Date Line follows this longitude except where the countries are divided by it. Times of different locations could be calculated on the basis of these longitudes.

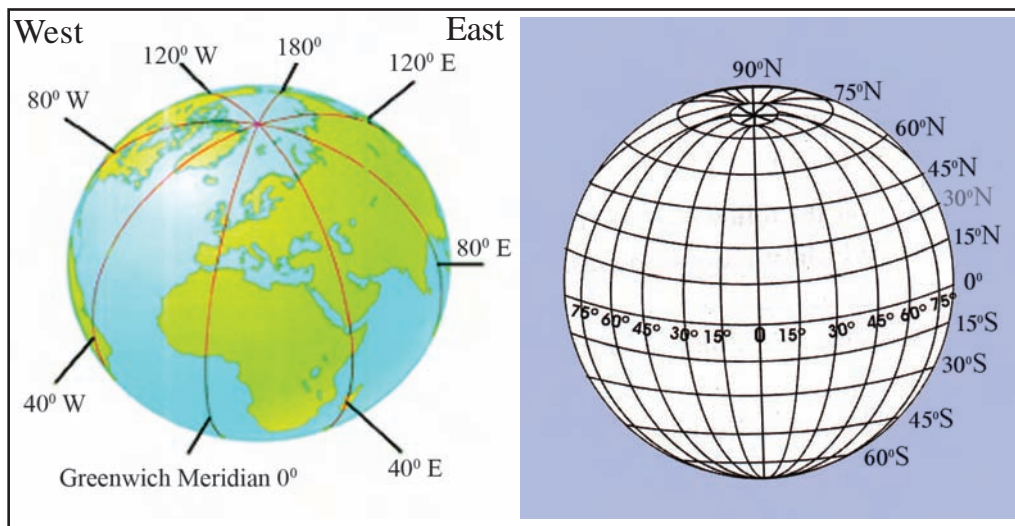


Fig. 1.11 ; Longitudes of the Globe

Fig.1.12 : Latitudes and Longitudes



Activities

1. Take a rubber or plastic ball having a smooth surface about 15cm in diameter and draw the important latitudes in red.
2. Take a piece of rigifoam or any other material and paste a map of the world on it.
3. Draw the Equator, two Tropics, Arctic and Antarctic Circles, North and South 90° latitudes. Note all these lines are equal to the equator in length.
4. Fix pins on 90° N and 90° S latitudes according to 20° intervals and join each longitude with coloured strings. By looking at the strings now you can understand how longitudes run from North to South.



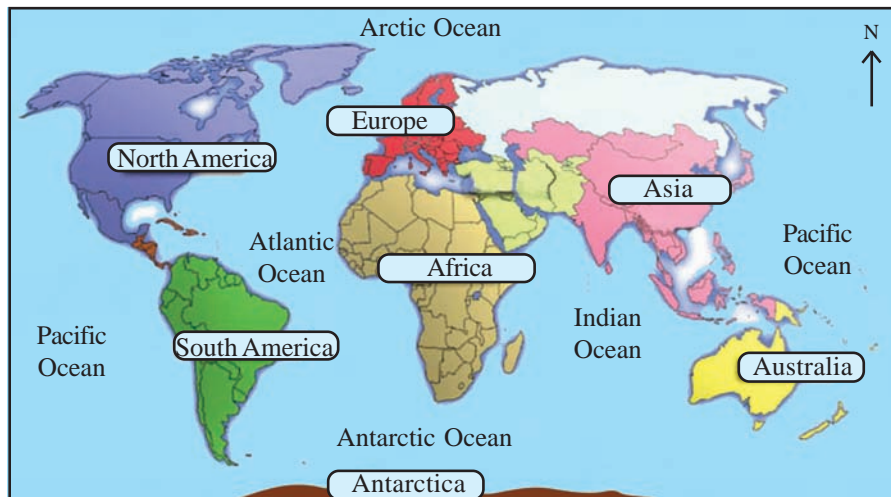
Student survey

Find the approximate location giving longitudes and latitudes of the following continents / countries with the help of a world atlas: Sri Lanka, Australia, South America and Great Britain.

Now you know the shape of the Earth. You have already studied that the latitudes and longitudes are useful to find the location of a place. Let us learn about the continents and oceans where the countries are located.

Continents and Oceans

One of the seven main areas of land on the Earth is called a continent. These seven continents are different from one another when we consider the features like relief, size and shape. There are five huge oceans in the world.



Map 1.1 : Map of the world showing continents and Oceans.

Teacher who came to the class next day showed a map of the world where continents and oceans are marked and questioned the students about continents and oceans of the world.

Teacher

Lasith, tell me the names of the continents of the world.

Lasith

The continents are Asia, Africa, North America, South America, Europe, Australia and Antarctica.

Teacher

Very good Lasith, I have told all of you to find information about continents. Who is going to tell about the continent of Asia?

The Continent Of Asia

Amara

Teacher, I can give some information about Asia.

Asia is the largest continent in the world. It includes a large number of countries such as China, India, Japan and Sri Lanka. A large number of long rivers too can be seen in this continent. The huge Himalaya range is also located in Asia (Map 1.2).

Teacher

Good Amara. Shall we learn some more details using this map? Mountain ranges, such as Himalaya, Hindu Kush, Althai, Western Ghats are located in the continent of Asia and shaded in brown. The highest peak (Mount Everest 8848 m high) is also located in the Himalayan mountain range. The rivers are shown in blue. Hwang-Ho and Yangtze Kiang in China, Ganges and Indus in India, Irrawaddy in Myanmar are some of them. You may have heard that half of the world population live in this continent.



Map 1.2 : The continent of Asia (Source: Sarasavi School Atlas, 2004)



Activity

Trace an outline map of Asia. Mark and name five countries (India, China, Japan, Thailand and Vietnam), five major mountain ranges.(Himalaya, Hindu Kush, Tian shan, Great Khingan, Althai, Sulaiman and Western Ghats), five major rivers (Ganges, Hwang Ho, Indus, Ob and Yenesi) and two plateaus (Tibet and Pamir).

The Continent Of Africa

Mihiri, who was very eagerly waiting to say what she has found about the continent of Africa, requested an opportunity for that.

Mihiri

My brother told me that, Africa is the second largest continent in the world. River Nile, the longest river in the world, is in Africa. Many lakes like Victoria, Tanganyika are also in Africa. Tropical rain forest of Congo and large Sahara desert are found in the continent of Africa.

Teacher

Good Mihiri. Shall we find some more details from the map (Map 1.3). Sahara desert spreads on a large area in northern Africa. Kalahari desert is in the South. River Nile, the longest river in the world feeds a large area of the continent. The mountains like Atlas and Drakensberg are also in Africa.



Map.I. 3 : Continent Of Africa. (Source: Sarasavi School Atlas, 2004)



Activities

1. Name latitudes and longitudes in the continent of Africa.
2. Trace the outline map of Africa (Map 1.4) Mark and name Tropic of Cancer, Tropic of Capricorn and Greenwich Meridian Longitude.
3. Name the rivers and colour those in blue.
4. Shade in blue, the two lakes in the map you have traced.

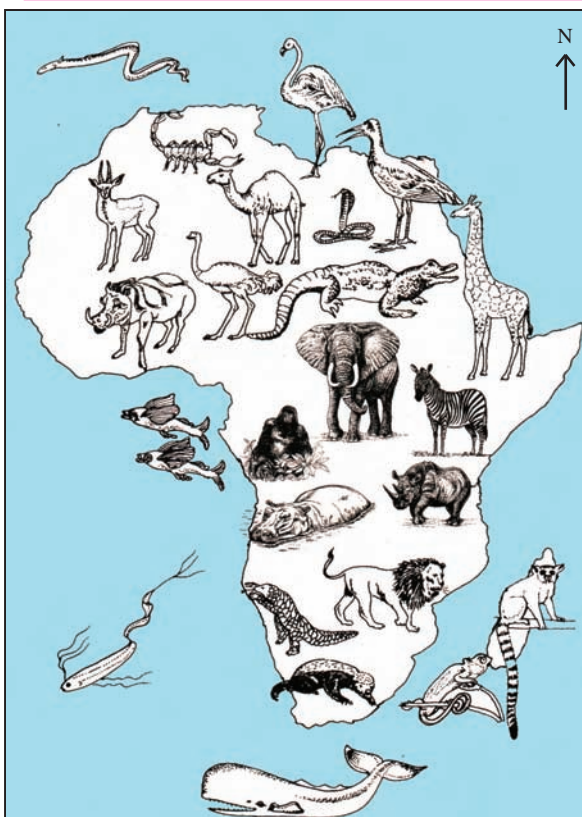


Fig.1:13 : Animal life in the continent of Africa



Map. 1.4 Outline map of Africa



Student survey

1. Recognise the animals living in Africa according to the Fig 1:13 shown above and name them.
2. Referring to the example above, prepare a model to show the animals living in Sri Lanka.

The Continent of North America

Sahan

Teacher, I will tell you about North America. It is the third largest continent in the world. Canada, United States of America, Alaska and Mexico are the countries which make up this continent. Rocky mountain range near the western coast is a significant feature in North America. Appalachian mountains are in the East. Rivers like Mississippi, St. Lawrence and Colorado are the major rivers in North America. Five major inland lakes connected together are found in this continent. My sister told me that those are called Five Great Lakes.



Map.1.5 : The Continent of North America. (Source: Sarasavi School Atlas, 2004)

Teacher

Very Good. Now take your atlas and turn to the page showing North America. Then find the location of the following cities: New York, Los Angeles, Boston, and Seattle. Next find the Appalachians and Rocky Mountain ranges. After that, find Mississippi and St-Lawrence rivers and the five great lakes, Superior, Huron, Michigan, Erie and Ontario.



Activity

Trace an outline map of North America and mark and name the mountain ranges, rivers, lakes and towns you have identified.



Student survey

Show the longitudinal and latitudinal extension of North America.

The Continent of South America

The teacher came to the class with a map of South America.

Teacher

Look at this map dear children. The continent of South America is also as large as the continent of North America. What is shaded in brown near the western coast is the Andes mountain range. River Amazon, the second longest river, in the world stretches over a vast area and covers a large extent of dense forest named Amazon forest. Major deserts in South America are Atacama and Patagonia.



Activities

1. Trace an outline map of South America and name the countries marked as A, B, C, D and E in the map 1.7. Use an atlas for this exercise.
3. Shade those countries in different colours.
4. Draw the river Amazon in blue.
5. Draw the Andes mountain range in brown.



Student survey

Search the similar and different features of two Americas and prepare a folder. Pay your attention to the longitudes, latitudes, location of mountain ranges, and deserts in the two continents.



Map.1.6 : The Continent of South America. (Source: Sarasavi School Atlas, 2004)



Map.1.7 : Outline map of America

The Continent of Europe

Dear children, find information on the continent of Europe as you did for other continents. Trace an outline map of Europe with the help of an atlas. Do the following exercise.

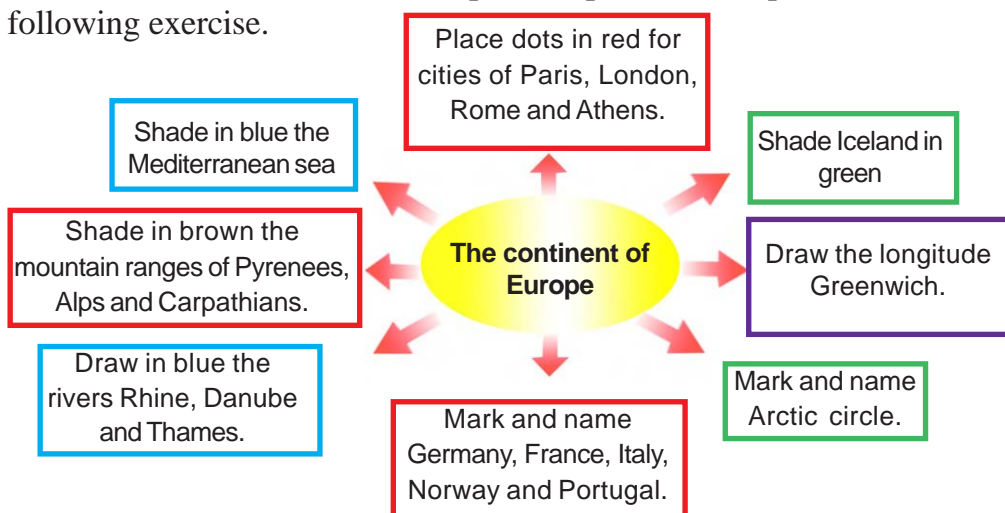


Fig 1.14



Map.I.8 : The Continent Of Europe. (Source: Sarasavi School Atlas, 2004)

The Continent of Australia

Following day the teacher came to the class and exhibited a map of the Australian continent.

Kasun

Madam, I have collected information on Australia. May I present those ?

Teacher

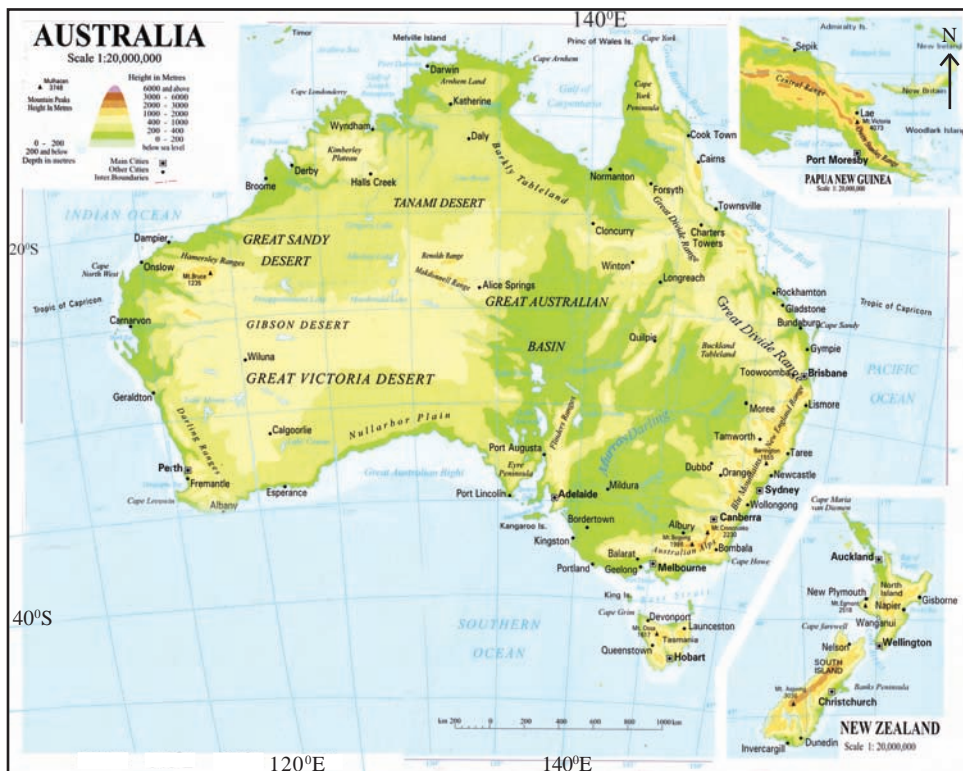
Right, Kasun present the information loudly for the others to listen.

Kasun

The continent of Australia is smaller than other continents. The Tropic of Capricorn passes through the middle of it. The major river is Murray-Darling. The Great Dividing range is located close to the Eastern coast of Australia. Deserts like Great Sandy Desert, Gibson, Great Victoria are in the Western part of Australia.

Teacher

Good Kasun. Now get an atlas and find what are mentioned by Kasun.



Map.I.9 : The Continent of Australia. (Source: Sarasavi School Atlas, 2004)



Map.I.10 : Outline map of Australia



Activities

1. Trace the outline map of Australia (Map 1.10) and draw the major longitudes and latitudes going through it.
2. Draw the river Murray-Darling in blue, Great Barrier Reef in dark orange and shade the Great Dividing Range in brown.
3. Mark and name five towns near the coast.

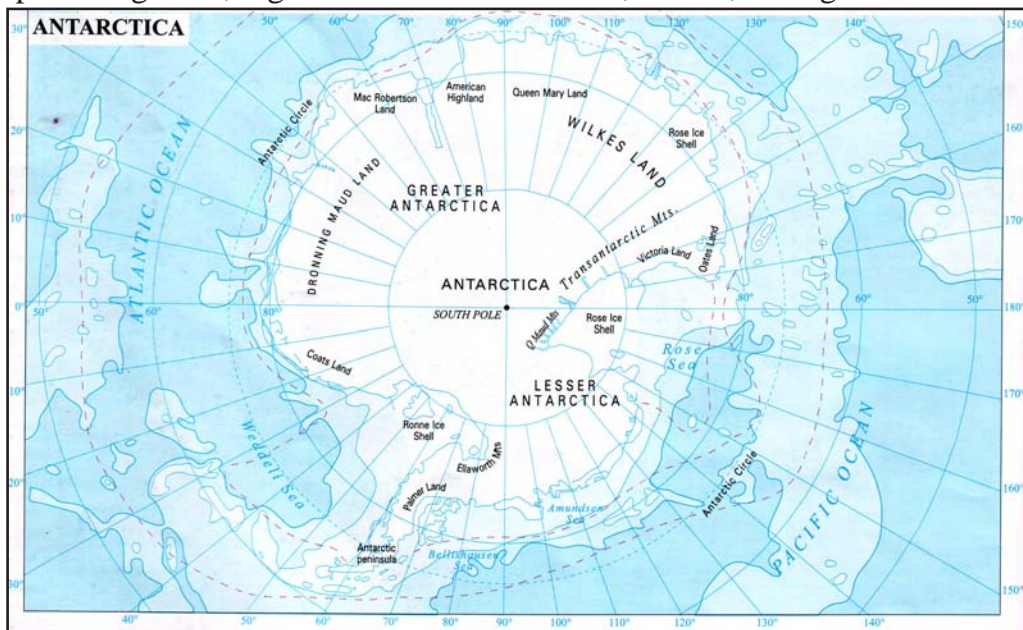


Student survey

Collect pictures and stamps of Australia and prepare a poster.

The Continent of Antarctica

The continent of Antarctica is around the South pole and it is very cold. Most of the land is permanently covered with ice and devoid of human settlements. Look at the location of Antarctica from map 1.11. Antarctica has no trees, flowering plants or grasses, vegetation is limited to lichens, mosses, and algae.



Map.1.11 : The Continent of Antarctica. (Source: Sarasavi School Atlas, 2004)



Student survey

Collect information about the continent of Antarctica.

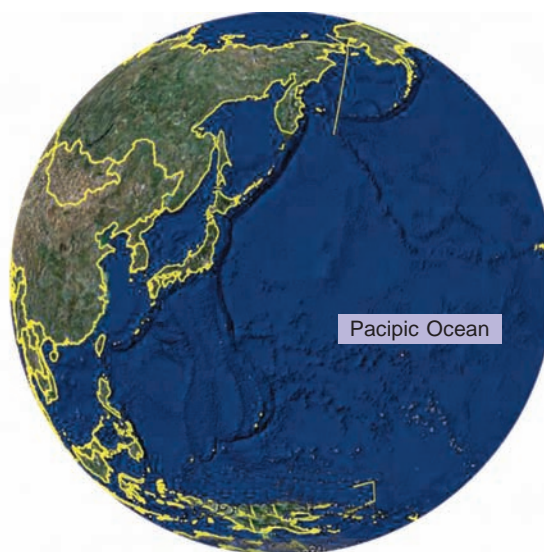
The teacher came to the class to discuss about oceans of the world on the following day with a map and explained about their locations, extents and special features.

Oceans

The oceans are masses of water occupying a vast area of the surface of the Earth. But that is excluding all lakes and inland seas. There are five major oceans. They are Pacific, Atlantic, Indian, Arctic and Antarctic oceans (Map 1.1).

Pacific Ocean

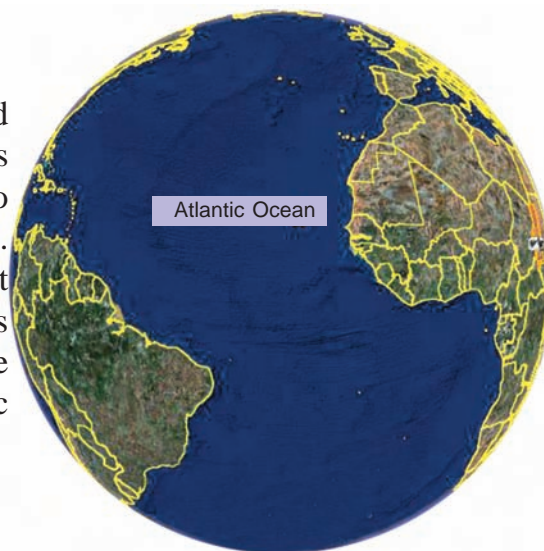
Pacific ocean is the largest ocean in the world. It is located between the continents of Asia and America. There are ocean deeps in the Pacific ocean, Mariana trench is 11,035m meters deep. It is the deepest place in the Earth. There are many islands like Japan, Philippines and there are many seas like Japanese (East Sea), Chinese and Okhotsk in this ocean.



Map 1.12: Pacific Ocean

Atlantic Ocean

Atlantic ocean is the second largest ocean in the world. Its location is in between two Americas and Europe and Africa. There are islands like West Indies, Cuba and Azores in this ocean. It has some seas like Mediterranean, Caribbean, Baltic and North sea.



Map 1.13: Atlantic Ocean

Indian Ocean

Indian ocean is the third largest ocean in the Earth. It is surrounded by the landmasses such as South Asia, Africa and Australia. There are several big and small islands like Sri Lanka, Malagasi, Maldives, Sumatra, Java and Seashells situated in the Indian ocean. Bay of Bengal and Arabian sea too are situated in this ocean.



Map 1.14 : Indian Ocean

Antarctic (Southern) Ocean

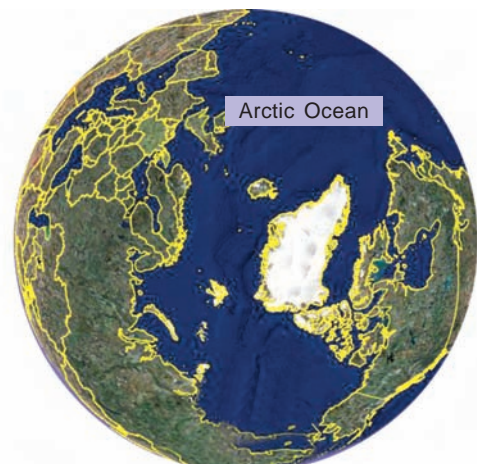
This is sometimes named as Southern ocean. It is around the Antarctic continent covered with ice all round the year. Antarctic or Southern ocean is comprised of Southern parts of the Atlantic, Indian and Pacific oceans. As the waters of these oceans are mixed in the Antarctic ocean, it is rich in marine life.



Map 1.15: Antarctic Ocean

Arctic Ocean

Arctic ocean is located around the North Pole bordering the continents of Asia and North America. Most of the surface area of this ocean is covered with ice sheets hundreds of meters thick. The largest island of the world, Greenland is also situated in this ocean.



Map 1.16 : Arctic Ocean

Areas of Continents and Oceans (Million Square kilometers)

Continent	Area (km ²)
Asia	44
Europe	9.9
Africa	30
N.America	24
S.America	17
Australia	7
Antarctica	13

Oceans	Area (km ²)
Atlantic	76
Indian	66
Pacific	155
Arctic	14
Antarctic	20

Source: <http://www.worldatlas.com/aatlas/infopageloceans/continents.htm>.



Activities

1. Mark and name the oceans in an outline map of the world in blue.
2. Mark and name the major seas and islands located in these oceans and three rivers which flow into each ocean.
3. Rank the continents and oceans according to their size. Note down the longitudes and latitudes of the continents you have learned in this lesson.
4. What is the major town that lies on the central meridian.
5. Give the approximate longitudinal and latitudinal locations of the following:
Colombo, Bangkok, Tokyo, New York, Los Angeles, London, Oslo and Geneva.
6. Find and note the continents towns, rivers, mountains, plateaus and deserts you can find in the grid below.

G	E	B	I	E	N	G	L	A	N	D	K	N	I	L	E
A	U	S	T	R	A	L	I	Y	A	A	F	R	I	C	A
U	R	A	L	N	S	E	H	I	M	A	L	A	Y	A	G
R	O	M	E	M	U	M	B	A	I	A	S	P	A	I	N
S	P	A	N	M	A	O	G	R	E	E	N	W	I	C	H
P	E	R	T	H	A	R	Z	A	L	B	R	A	Z	I	L
P	A	T	A	G	O	N	I	A	S	U	M	A	T	R	A
D	E	C	C	A	N	I	A	N	D	E	S	E	O	B	E
G	A	N	G	E	S	E	X	A	M	E	R	I	C	A	Q

A Summary of what you have learnt

- The Earth is round in shape.
- Many evidences can be forwarded to prove it.
- The Earth is not a mathematical globe.
- The latitudes and longitudes drawn on the globe are imaginary lines.
- The location of countries can be shown by longitudes and latitudes.
- There are seven continents and five major oceans in the world. All these have different features.