

Geography – Part 3

3] Earth We Live

Notes

Mountains

- A mountain is a large landform that stretches above the surrounding land in a limited area, usually in the form of a peak.
- A mountain is generally steeper than a hill. Mountains are formed through tectonic forces or volcanism.
- These forces can locally raise the surface of the earth. Mountains erode slowly through the action of rivers, weather conditions, and glaciers.
- A few mountains are isolated summits, but most occur in huge mountain ranges.

Types of mountains:

Mountains can be classified into five different basic types based on the cause that formed the mountain, type of rocks, shape and placement on land.

- ✓ Fold Mountains (Folded Mountains)
- ✓ Fault-block Mountains (Block Mountains)
- ✓ Dome Mountains
- ✓ Volcanic Mountains
- ✓ Plateau Mountains

Fold Mountains:

- These are the most common types of mountains. These are formed when two continental tectonic plates collide and their edges crumble to form mountains.
- The crust is uplifted forming folds on top of the other. Vast mountain ranges stretching across thousands of kilometres are Fold Mountains.
- The Rocky Mountains in North America, the Alps in Europe, the Andes in South America, the Urals in Russia and the Himalayan Mountains in Asia are examples of Fold Mountains.
- Himalayas is the highest mountain range in the world.

Fault-Block Mountains:

- The Fault-block Mountains or block mountains are created when faults or cracks in the Earth's crust force materials or blocks of rocks upward or down.
- The uplifted blocks are Block Mountains or horsts. The intervening dropped blocks are called graben, which can be small or form rift valley systems.
- These block mountains break up into chunks or blocks and move either up or down. When they move apart blocks of rock get stacked on one another Fault-block Mountains usually have a steep front side and then a sloping back side.
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Dome Mountains:

- Dome Mountains are also called Upwarped Mountains.
- These mountains are formed when large amounts of molten rock or magma push the earth's crust from underneath.
- The magma in this case never reaches the top surface of the earth. So even before it can erupt the source of magma goes away leaving the pushed up Rock as such. This rock then cools and forms a mountain.
- With time the mountain forms a dome shape, where it gets warped due to erosion.
- Dome mountains are formed when large amounts of molten rock or magma push the earth's crust from underneath. The magma in this case never reaches the top surface of the earth.
- The Black hills of South Dakota in the USA and the Adirondack

Volcanic mountains:

- Volcanic mountains are created by volcanoes as the name suggests.
- They are created when magma pushes its way from beneath the earth to the crust, and when it reaches the surface, it erupts as lava, ash, rocks and volcanic gases.

- These erupting materials build around the vent through which they erupted. These mountains are then shaped by further eruptions, lava flows, and collapses.
- Mount Fuji in Japan, Mount Rainer in the US, including Mauna Loa and Mauna Kea on the Big Island of Hawaii are examples of volcanic mountains.

Plateau Mountains:

- Plateau Mountains are formed by Erosion.
- These are large areas of high levels of flat land, over 600 meters above sea level formed due to earth's internal activity. Over billions of years, the rivers can cut deep into a plateau and make tall mountains.

Plateau

The widely spread region of irregular relief on the earth surface, that has a height at least 300 meters from the sea level, uneven wavy top surface and steep slants all around, is called plateau.

Characteristics of a plateau:

- A plateau is a widely spread high land surface.
- The top of a plateau is either uneven or wavy.
- The steep slanting edge of the plateau meets the plain.
- A plateau is at least 300 meter high measured from the sea level.
- Some plateaus are very high.
- In some cases, these are of tabular form.
- Plateaus look like mountains without peaks.

- Some plateaus are encircled with mountains.

Tibetan Plateau

- The Tibetan Plateau, also known as the Qinghai-Tibetan Plateau, is a vast, high plateau in Central Asia. It covers most of the Tibet Autonomous Region, the Qinghai Province in China, and Ladakh in Kashmir, Pakistan.
- The Tibetan Plateau occupies an area of around 1,000 by 2,500 kilometers, and has an average elevation of over 4,500 meters. It is the highest and largest plateau in the world.
- It was formed by the same forces which formed the Himalayas, namely, the movement of the Indian continental plate into Asia. The Plateau has a great effect on climate, and is the main cause of the monsoon rains.

Gobi Desert

- The Gobi Desert is a large desert region in Asia.[1] It covers parts of northern and northwestern China, and of southern Mongolia.
- The desert basins of the Gobi are bounded by the Altai Mountains and the grasslands and steppes of Mongolia on the north, by the Taklamakan Desert to the west, by the Hexi Corridor and Tibetan Plateau to the southwest, and by the North China Plain to the southeast.
- The Gobi is a rain shadow desert, formed by the Tibetan Plateau blocking precipitation from the Indian Ocean reaching the Gobi territory.

Continents

- Continents are the large landmasses separated by large water bodies.
- These continents are made up of countries, and are surrounded by oceans.
- There are Seven major continents.
- On the basis of size Asia is largest continent and Australia is the smallest continent.

Asia

- Asia is the world's largest continent - both by area and by population.
- Asia is the only continent joined to two others
- Asia covers one-third of the total area of the earth.
- Asia lies in Eastern Hemisphere.
- Latitude tropic of cancer passes through Asian continent.
- On the west Europe is separated from Asia by Ural mountains.

Europe

- Second most smallest continent by surface area
- Europe is the third most populous continent after Asia , Africa
- Europe is the wealthiest continent in the world.
- Latitude-Arctic circle passes through European continent.
- Europe is surrounded by water bodies on three sides.

Africa

- Africa, the 2nd largest and 2nd most populous continent in the world
- Africa was formerly known as Ifriqiya or sunny place.

- Three latitudes pass through the African continent: the Tropic of Cancer, the Equator, and the Tropic of Capricorn. This continent is situated in both the northern and southern hemispheres.
- The equator divides the continent into two equal halves.
- The African continent is surrounded by water bodies on all sides.
- The world's largest hot desert, the Sahara Desert, is in Africa.
- The world's longest river, the Nile, flows through Africa.
- This continent lies mostly in the southern hemisphere.
- The Alps mountain range is located in this continent.

North America

- North America is the third-largest continent.
- North America is linked to South America by the Isthmus of Panama.
- North America lies in the Northern and Western Hemispheres.
- The North American continent is surrounded by the Arctic Ocean, Atlantic Ocean, and Pacific Ocean.
- Contains the world's tallest mountain (Mount Kea).

South America

- South America is the world's fourth largest continent on Earth.
- South America lies mostly in the Southern Hemisphere.
- The world's longest mountain range, the Andes, is located in South America.
- The world's largest river, the Amazon, lies in South America.

Australia

- Australia is the smallest continent and lies in southern hemisphere.
- Australia is surrounded on all sides by oceans and sea
- Australia is called an Island continent.
- New Zealand , Fiji , Papua and New Guinea are generally called as Oceanic Islands.

Antarctica

- Antarctica is in southern hemisphere.
- Antarctica is the only continent completely covered in ice.
- Many countries have research stations in Antarctica as there is no permanent human settlement in Antarctica .
- Penguins and seals can be seen here.
- Some Indian research stations in Antarctica are Maitri and Dakshin Gangotri.

Archipelago

An archipelago, sometimes called an island group or island chain, is a chain, cluster or collection of islands, or sometimes a sea containing a small number of scattered islands.

Peninsula

A peninsula is a piece of land surrounded by water on the majority of its border, while being connected to a mainland from which it extends.

Strait

A strait is a naturally formed, narrow, typically navigable waterway that connects two larger bodies of water. Most commonly it is a channel of water that lies between two land masses.

Isthmus

An isthmus is a narrow strip of land that connects two larger landmasses and separates two bodies of water. Isthmuses have been strategic locations for centuries.

Bay

A bay is a recessed, coastal body of water that directly connects to a larger main body of water, such as an ocean, a lake, or another bay.

Gulf

A gulf is a large bay that is an arm of an ocean or a sea.

Major Domains Of The Earth

- The surface of the earth is a complex zone in which three main components of the environment meet, overlap and interact.
- The solid portion of the earth on which we live is called the Lithosphere.
- The gaseous layer that surrounds the earth is the Atmosphere.
- Water covers a very big area of the earth's surface and this area is called the Hydrosphere. It comprises water in all its forms- ice, water and water vapour.
- The Biosphere is the narrow zone where we find land, water and air together, which contains all forms of life.

Atmosphere

- It is the layer of gas surrounding the earth.
- It provides us with the air we breathe and protects us from the harmful effects of sun's rays.
- It extends up to a height of about 1,600 km.
- It is divided into five layers based on composition, temperature and other properties.
- These layers starting from the earth's surface are called the troposphere, the stratosphere, the mesosphere, the thermosphere and the exosphere.
- The atmosphere has- Nitrogen (78%), Oxygen (21%), and other gases like carbon dioxide, argon and others comprise 1% by volume.
- Oxygen- breath of life.
- Nitrogen- helps in the growth of living organisms.
- Carbon Dioxide- absorbs heat radiated by the earth, thereby keeping the planet warm. It is also essential for the growth of plants.
- An increase in the amount of carbon dioxide leads to increase in global temperatures. This is termed as global warming.
- The density of the atmosphere varies with height. It is maximum at the sea level and decreases rapidly as we go up. The climbers experience problems in breathing due to this decrease in the density of air. They have to carry oxygen cylinders for breathing at high altitudes.
- The temperature also decreases as we go upwards.
- The atmosphere exerts pressure on the earth which varies from place to place.

- Air moves from high pressure to low pressure. Moving air is known as wind.

Biosphere

- It is the narrow zone of contact between the land, water and air.
- It is in this zone that life exists.
- All living organisms including humans are linked to each other and to the biosphere for survival.
- The organisms in the biosphere are broadly divided into the plant kingdom and the animal kingdom.
- A strait is a narrow passage of water connecting two large water bodies.
- Palk Strait is the strait between India & Sri Lanka.

Lithosphere

- The solid portion of the earth.
- It comprises the rocks of the earth's crust and the thin layers of soil that contain nutrient elements which sustain organisms.
- Earth's surface has two main divisions- continents (large landmasses) and ocean basins(huge water bodies).
- All the oceans of the world are connected to each other.
- The level of seawater remains the same everywhere. Elevation of land is measured from the level of the sea, which is taken as zero.
- The highest mountain peak Mt. Everest is 8,848 metres above the sea level.

Hydrosphere

- Earth, also called the blue planet, is covered with – 71% water + 29% land.
- More than 97% of the Earth’s water is found in the oceans and is too salty for human use.
- A large portion of the rest is in the form of ice sheets and glaciers or under the ground.
- A very small percentage is available as fresh water for human use.

Ocean

- Around 70% of the Earth’s surface is covered by oceans.
- The word ocean come from the greek word okeanos.
- The largest ocean on Earth is the Pacific Ocean, covering around 30% of the Earth’s surface.
- The name “Pacific Ocean” comes form the Latin name Tere Pacificum, “peaceful sea”.
- The deepest known area of the Earth’s oceans is known as the Mariana Trench. It’s deepest point measures 11km.
- The longest mountain range in the world is found under water. Stretching over 56,000km, the Mid-Oceanic Ridge is a mountain chain that runs along the centre of the ocean basins.
- About 70% of the oxygen we breathe is produced by the oceans.
- The sea is home to the world’s largest living structure – the Great Barrier Reef. Measuring around 2,600km, it can even be seen from the Moon!
- We have only explored about 5% of the world’s oceans.
- The sea can be described as the planet’s mega museum.

- An ocean is a large body of water that is saline. Oceans are a major component of the Earth's hydrosphere and cover 71% of the Earth's surface. Although the oceans of the Earth are all connected and are truly one "World Ocean," most often the world is divided into five different oceans.

Pacific Ocean

- The Pacific Ocean is by far the world's largest ocean at 60,060,700 square miles (155,557,000 sq km).
- It covers 28% of the Earth and is equal in size to nearly all of the land area on the Earth.
- The Pacific Ocean is located between the Southern Ocean, Asia and Australia and the Western Hemisphere.
- It has an average depth of 13,215 feet (4,028 m) but its deepest point is the Challenger Deep within Mariana Trench near Japan. This area is also the deepest point in the world at -35,840 feet (-10,924 m).
- The Pacific Ocean is important to geography not only because of its size but it has been a major historical route of exploration and migration.
- 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.
- It has the border of Asia and Australia in west, North America in east and Antarctica in south.

Atlantic Ocean

- The Atlantic Ocean is the world's second-largest ocean with an area of 29,637,900 square miles (76,762,000 sq km).
- It is located between Africa, Europe, the Southern Ocean and the Western Hemisphere.
- It covers 16.5% of the earth's surface.
- It includes other water bodies such as the Baltic Sea, Black Sea, Caribbean Sea, Gulf of Mexico, Mediterranean Sea and the North Sea.
- The average depth of the Atlantic Ocean is 12,880 feet (3,926 m) and the deepest point is the Puerto Rico Trench at -28,231 feet (-8,605 m).
- The trade route of the Atlantic is considered as one of the world's important routes in the world.

Indian Ocean

- The Indian Ocean is the world's third-largest ocean and it has an area of 26,469,900 square miles (68,566,000 sq km).
- It is located between Africa, the Southern Ocean, Asia and Australia. The Indian Ocean has an average depth of 13,002 feet (3,963 m) and the Java Trench is its deepest point at -23,812 feet (-7,258 m).
- The waters of the Indian Ocean also include water bodies such as the Andaman, Arabian, Flores, Java and Red Seas as well as the Bay of Bengal, Great Australian Bight, Gulf of Aden, Gulf of Oman, Mozambique Channel and the Persian Gulf.

- The Indian Ocean is known for causing the monsoonal weather patterns that dominate much of southeast Asia and for having waters that have been historical chokepoints.
- It ocean connects with the Africa's southernmost of Atlantic ocean and in east and south east of pacific ocean.

Southern Ocean

- The Southern Ocean is the world's newest and fourth-largest ocean.
- In the spring of 2000, the International Hydrographic Organization decided to delimit a fifth ocean.
- In doing so, boundaries were taken from the Pacific, Atlantic and Indian Oceans. The Southern Ocean extends from the coast of Antarctica to 60 degrees south latitude.
- It has a total area of 7,848,300 square miles (20,327,000 sq km) and an average depth ranging from 13,100 to 16,400 feet (4,000 to 5,000 m).
- The deepest point in the Southern Ocean is unnamed but it is in the south end of the South Sandwich Trench and has a depth of -23,737 feet (-7,235 m).
- The world's largest ocean current, the Antarctic Circumpolar Current moves east and is 13,049 miles (21,000 km) in length.
- Alexander Islands , Pakleni islands and Rose islands were situated here.

Arctic Ocean

- The Arctic Ocean is the world's smallest with an area of 5,427,000 square miles (14,056,000 sq km).
- It extends between Europe, Asia and North America and most of its waters are north of the Arctic Circle.
- Its average depth is 3,953 feet (1,205 m) and its deepest point is the Fram Basin at -15,305 feet (-4,665 m).
- Victoria Islands , Elizabeth islands ,Iceland were situated here.

Divisions of the Ocean Floors

An oceanic basin is the land surface under an ocean that includes the topography under the water. The ocean floors can be divided into four major divisions:

- ✓ The Continental Shelf
- ✓ The Continental Slope
- ✓ The Deep Sea Plain
- ✓ The Trenches

Minor relief features in the ocean floors

Besides, the major divisions, there are also major and minor relief features in the ocean floors like

- ✓ Ridges
- ✓ Hills
- ✓ Seamounts
- ✓ Guyots
- ✓ Trenches
- ✓ Canyons

Continental Shelf

- The continental shelf is the stretched margin of all continent occupied by comparatively shallow gulfs and sea.
- It is the shallowest part of the ocean
- The shelf normally ends at a very steep slope which is called the shelf break.
- The average width of continental shelves is about 80 km.
- The Continental shelves are very narrow or almost absent along certain margins like the
 - ✓ Coasts of Chile
 - ✓ The west coast of Sumatra
- The Siberian shelf in the Arctic Ocean is the largest in the world
- Enormous sedimentary deposits received over a long time by the continental shelves, turn out to be the source of fossil fuels.

Continental Slope

- The continental slope links the continental shelf and the ocean basins.
- It starts where the bottom of the continental shelf abruptly drops off into a steep slope.
- Canyons and trenches are seen in this region.

Deep Sea Plain

- Deep sea plain is gently sloping areas
- These are the flattest and flattest areas
- These plains are completely covered with fine-grained deposits like silt and clay.

Oceanic Deeps or Trenches

- Trenches are the deepest parts of the oceans.
- The trenches are comparatively steep sided and have narrow basins.
- They are some 3-5 km deeper than the adjacent ocean floor.
- They are found at the bases of continental slopes and along island arcs
- Trenches are associated with active volcanoes and strong earthquakes.
- That is why they are very important in the study of plate movements.

Oceanic trough

- Oceanic trough, an elongate depression in the seafloor that is characteristically shallower, shorter, narrower, and topographically gentler than oceanic trenches.
- Maximal depths of oceanic troughs range between 2,300 m (7,500 feet) in the Papuan Trough and 7,440 m in the Banda Trough.
- More typical maximum depths lie between 4 and 5 km (2.5 and 3 miles) below sea level.
- Lengths of the 25 best-known troughs range between 270 and 2,300 km and average about 700 km; their widths are from 20 to 100 km and average about 50 km.
- Unlike trenches, oceanic troughs probably owe their origins to a wide variety of geologic mechanisms.
- The Oceanic trough covers 40% of the total ocean area.

Guyot

Ancient volcano whose summit has been cut off by erosion and then submerged.

Seamount

Isolated mountain of volcanic origin featuring a pointed summit.

Trench

Extremely deep elongated depression bordering a continent or island arc; it occurs when one tectonic plate moves under another.

Volcanic island

Volcano whose summit rises above sea level.

Island arc

String of volcanic islands formed when two tectonic plates meet.

Abyssal hill

Rounded underwater rise of low elevation.

Sea level

Mean water level observed for a given duration (day, month, year); it is used as a reference to define coastal features and calculate the elevation of topographical elements.

Mid-ocean ridge

Group of underwater mountain chains criss-crossing the oceans; it is formed by an outpouring of magma.

Continent

A collective term for the vast landmasses and their submerged margins.

Submarine canyon

Deep valley that is frequently the extension of a river; it ends in a sediment buildup.

Continental slope

Slope of a few degrees that extends from the continental shelf; it is 660 to 6,600 feet deep.

Continental rise

Gently sloping section of the continental margin; it connects the continental slope to the abyssal plain.

Abyssal plain

Zone located at a depth of 6,600 to 20,000 feet; it covers most of the ocean floor.

Salinity of ocean waters

- Salinity means the total content of dissolved salts in Sea or Ocean.
- Salinity is calculated as the amount of salt dissolved in 1,000 gm of seawater.
- It is generally expressed as ‘parts per thousand’ (ppt).
- A salinity of 24.7 % has been regarded as the upper limit to fix ‘brackish water’.

- It is a significant factor in deciding several characteristics of the chemistry of natural waters and of biological processes.
- Dead sea has the high rate of salinity.
- Due to evaporation the salt in the seawater does not gets evaporated.so the salinity is higher in sea water.
- 99% sea salts are made up of six types of elements and compounds such as chlorine , sodium , sulphur , Magnesium , potassium and calcium.
- Chlorine ions are more than 50% of the surface water found in sea water.
- Temperature plays the important role in determining the characteristics of the species in the oceans.
- Sea water contains salts like sodium chloride , Magnesium chlorite , Magnesium sulphate , Calcium sulphate ,Potassium sulphate , Calcium carbonate and magnesium bromide.
- When the temperature increases in the sea water the gases in water also increases.

Factors affecting ocean salinity

- Salinity, temperature, and density of water are interconnected. The salinity of water in the surface layer of oceans is influenced by:
 - ✓ Evaporation

✓ Precipitation

- In the coastal regions, the surface salinity is influenced by the fresh water flow from rivers.
- In the Polar region, the surface salinity is influenced by the processes of freezing and melting of ice.
- The wind also influences salinity of an area by moving water to other areas.
- The ocean currents contribute to the salinity variations.
- The change in the density or temperature influences the salinity of water in an area.

Surface Currents

- Ocean water moves in predictable ways along the ocean surface. Surface currents can flow for thousands of kilometers and can reach depths of hundreds of meters. These surface currents do not depend on weather; they remain unchanged even in large storms because they depend on factors that do not change.
- Change in temperature is the cause of formation of water currents in ocean.
- Surface currents are created by three things:
 - ✓ Global wind patterns
 - ✓ The rotation of the Earth
 - ✓ The shape of the ocean basins
- Surface currents are extremely important because they distribute heat around the planet and are a major factor influencing climate around the globe.

Global Wind Patterns

- Winds on Earth are either global or local. Global winds blow in the same directions all the time and are related to the unequal heating of Earth by the Sun — that is, more solar radiation strikes the Equator than the polar regions — and the rotation of the Earth — that is, the Coriolis effect.
- The causes of the global wind patterns will be described in detail in the chapter Atmospheric Process
- The main reason for the formation of wave is due to the air movement.
- Water does not travels waves.
- In ocean the movement of water in up and down motion is called waves.
- In oceans the water movement typically refers to the water moving in a particular direction.
- Ocean water currents are of two types they are hot and cold water movements.
- Deep sea currents are driven by density variation of sea water.
- The difference in temperature and salinity Makes the difference in the density of water in the oceans.

Shape of the Ocean Basins

- When a surface current collides with land, the current must change direction.
- The Atlantic South Equatorial Current travels westward along the Equator until it reaches South America.
- Because of Coriolis effect, the water goes right in the Northern Hemisphere and left in the Southern Hemisphere.

Gyres

- The major surface ocean currents that the surface ocean currents create loops called gyres.
- The Antarctic Circumpolar Current is unique because it travels uninhibited around the globe.

Local Surface Currents

- The surface currents described above are all large and unchanging.
- Local surface currents are also found along shorelines Two are longshore currents and rip currents.
- Boundary currents are ocean currents with dynamics determined by the presence of a coastline, and fall into two distinct categories: western boundary currents and eastern boundary currents.

Eastern boundary currents

- Eastern boundary currents are relatively shallow, broad and slow-flowing. They are found on the eastern side of oceanic basins (adjacent to the western coasts of continents).
- Subtropical eastern boundary currents flow equatorward, transporting cold water from higher latitudes to lower latitudes;

Coastal upwelling often brings nutrient-rich water into eastern boundary current regions, making them productive areas of the ocean.

Western boundary currents

Western boundary currents are warm, deep, narrow, and fast flowing currents that form on the west side of ocean basins due to western intensification. They carry warm water from the tropics poleward.

Western intensification

- Western intensification is the intensification of the western arm of an oceanic current, particularly a large gyre in an ocean basin.
- The trade winds blow westward in the tropics, and the westerlies blow eastward at mid-latitudes.
- This wind pattern applies a stress to the subtropical ocean surface with negative curl in the northern hemisphere and a positive curl in the southern hemisphere.

Ocean Trenches

- Ocean trenches are natural tectonic plate boundaries between two crustal plates.
- When a continental plate converges with an oceanic plate a subduction zone forms.
- The heavier oceanic plate subducts beneath the lighter continental plate forming a trench.
- Topographic depressions on the sea floor is called as Oceanic Trenches.

Mariana Trench

- Trenches form in some areas when two oceanic plates converge forming a subduction zone.
- The Pacific Plate is subducting beneath the Mariana Plate forming Mariana Trench.
- The Pacific Plate is older and colder than the Mariana Plate.
- The trench formed by these two oceanic plates is the deepest spot in the world's oceans and includes the Challenger Deep.

Spring Tides

- When the moon is full or new, the gravitational pull of the moon and sun are combined. At these times, the high tides are very high and the low tides are very low. This is known as a spring high tide.
- Spring tides are especially strong tides. They occur when the Earth, the Sun, and the Moon are in a line.
- The gravitational forces of the Moon and the Sun both contribute to the tides. Spring tides occur during the full moon and the new moon.
- A spring tide—popularly known as a "King Tide"—refers to the 'springing forth' of the tide during new and full moon.

Neap Tides

- During the moon's quarter phases the sun and moon work at right angles, causing the bulges to cancel each other.
- The result is a smaller difference between high and low tides and is known as a neap tide. Neap tides are especially weak tides.

- They occur when the gravitational forces of the Moon and the Sun are perpendicular to one another. Neap tides occur during quarter moons.
- A neap tide—seven days after a spring tide—refers to a period of moderate tides when the sun and moon are at right angles to each other.

Coral

- Corals are marine invertebrates in the class Anthozoa of phylum Cnidaria. They typically live in compact colonies of many identical individual polyps.
- The group includes the important reef builders that inhabit tropical oceans and secrete calcium carbonate to form a hard skeleton.
- A coral "group" is a colony of myriad genetically identical polyps.
- Each polyp is a sac-like animal typically only a few millimeters in diameter and a few centimeters in length.

Coral reef

- Coral reefs are diverse underwater ecosystems held together by calcium carbonate structures secreted by corals.
- Coral reefs are built by colonies of tiny animals found in marine water that contain few nutrients.
- Coral reefs is found the oceans between tropics to the polar region in the world.
- Corals are scattered in the western atlantic and the indian-pacific ocean.

- Jelly fish and sponges lives in the corals.
- Corals are white in colour.Sponges in the shells gives the colour to the corals.
- Coral reefs are diverse underwater ecosystems held together by calcium carbonate structures secreted by corals.
- Coral reefs are built by colonies of tiny animals found in marine water that contain few nutrients.
- Most coral reefs are built from stony corals, which in turn consist of polyps that cluster in groups.
- The polyps belong to a group of animals known as Cnidaria, which also includes sea anemones and jellyfish.
- Unlike sea anemones, corals secrete hard carbonate exoskeletons which support and protect the coral polyps. Most reefs grow best in warm, shallow, clear, sunny and agitated water.

Great Barrier Reef

The Great Barrier Reef is the world's largest coral reef system composed of over 2,900 individual reefs and 900 islands stretching for over 2,300 kilometres (1,400 mi) over an area of approximately 344,400 square kilometres (133,000 sq mi).The reef is located in the Coral Sea, off the coast of Queensland, Australia.

Zooxanthellae

- Zooxanthellae are single-celled dinoflagellates that are able to live in symbiosis with marine invertebrates such as corals, jellyfish, and sea anemones.
- Most known zooxanthellae are in the genus Symbiodinium but some are known from the genus Amphidinium, and other taxa, as yet unidentified, may have similar endosymbiont affinities.
- Another group of unicellular eukaryotes that partake in similar endosymbiotic relationships in both marine and freshwater habitats are green algae zoochlorellae.

