

EARTH: THE BLUE PLANET

Why Earth is called the Blue Planet:

- About **71%** of the Earth's surface is covered by water.
- When viewed from outer space, it looks like a beautiful blue marble because the vast oceans reflect blue light.

| All About Oceans

What is an Ocean?

- An ocean is a massive, continuous body of salty water that covers most of the Earth's surface.

Core Features of Oceans:

- **Salty Water:** Contains dissolved minerals, mostly sodium chloride (common salt).

- **Massive Depth:** The average depth is about 3,700 meters, featuring giant underwater mountains and deep trenches.
- **Continuous Flow:** Ocean waters are never completely still; they constantly move via currents and tides.

| The 5 Oceans of the World

- **1. Pacific Ocean:**

- The largest and deepest ocean in the world.
- Contains the **Mariana Trench** (the deepest point on Earth) and the volcanic **Ring of Fire**.

- **2. Atlantic Ocean:**

- The second-largest ocean, unique for its **'S' shape**.
- It is the busiest ocean route for international shipping and trade.

- **3. Indian Ocean:**

- The third-largest ocean, bounded by Asia, Africa, and Australia.
- It features significantly warmer water temperatures compared to others.

| The 5 Oceans (Continued)

- **4. Southern Ocean (Antarctic Ocean):**

- Completely encircles the frozen continent of Antarctica at the South Pole.
- Characterized by freezing temperatures, massive icebergs, and exceptionally strong winds.

- **5. Arctic Ocean:**

- The smallest, narrowest, and shallowest ocean, located at the North Pole.

- Mostly locked in thick ice throughout the year.

| Life & Weather Systems

Flora (Plant Life) in Oceans:

- Includes **phytoplankton** (microscopic organisms), seaweed, and giant kelp.
- Marine plants produce more than **50% of the Earth's oxygen** via photosynthesis.

Fauna (Animal Life) in Oceans:

- Ranges from tiny krill and colorful coral reefs to gigantic blue whales, sharks, sea turtles, and fish.

Is the Ocean Responsible for Rain?

- **Yes!** The sun heats ocean water, making it evaporate into water vapor. This vapor rises, cools, forms clouds, and returns to land as rain.

| Natural Disasters in Oceans

- **Cyclones (Tropical Storms):**
 - Massive, spinning storm systems with violent winds and heavy rainfall.
 - **Why they happen:** Warm ocean water evaporates quickly, creating a low-pressure zone. Air rushes into the gap and spins due to Earth's rotation.

- **Tsunamis:**

- A series of giant, highly destructive ocean waves that smash into coastlines.
- **Why they happen:** Triggered by sudden, massive water displacements caused by underwater earthquakes, volcanic eruptions, or landslides.

| All About Continents

What is a Continent?

- A continent is one of the world's main continuous expanses of land. The Earth is divided into **7 continents**.

Features of Continents (Part 1):

- **1. Asia:** The largest continent in land area and population. Features Mount Everest.

- **2. Africa:** The second-largest continent. Contains the Nile River and the Sahara Desert.
- **3. North America:** Located entirely in the Northern and Western Hemispheres. Highly diverse climates.

| Features of Continents (Part 2)

- **4. South America:** Famous for the Amazon Rainforest (the lungs of the planet) and the Andes Mountains.
- **5. Antarctica:** The coldest, driest, and windiest continent. Covered completely in thick ice with no permanent human residents.
- **6. Europe:** Highly industrialized with a rich cultural history. Separated from Asia by the Ural Mountains.

- **7. Australia:** The smallest continent, known as the "island continent". Famous for unique wildlife (kangaroos) and the Great Barrier Reef.

| Why Oceans are Essential for Human Life

- **Climate Regulation:** Oceans absorb over 90% of excess global warming heat and distribute temperature evenly via currents.
- **Oxygen Supply:** Marine plants generate the majority of the air we breathe.
- **Food & Medicine:** Provide vital protein for billions of people and ingredients for life-saving medications.

- **Global Trade:** Around 80% of global trade is moved through international maritime shipping routes.