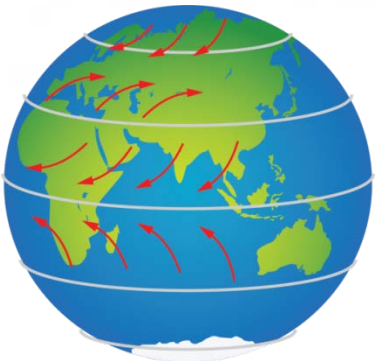
How to generate Wind Currents

Winds blow due to difference in pressure between different areas. This can be explained as follows:



(a) Uneven heating between the equator and the poles

- Air near equator gets warm.
- Warm years rises, and the cooler air from the regions (0-30 degrees latitude) of the equator moves in.
- These winds blow from the north and the south towards equator.
- At the poles, the air is colder than that at latitudes about 60 degrees.
- The warm air at these latitudes rises up and the cold wind from the polar regions rashes in and take its place.
- In this way, wind circulation is set up from the poles to the warmer latitudes.
- A change in direction is however, caused by the rotation of the earth.

(b) Uneven heating of land and water

- In summer, near the equator the land warms up faster.
- The air over the land gets heated and rises.
- This causes the winds to flow from the oceans towards the land.
- These are monsoon winds.

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- In winter, the direction of the winds flow gets reversed.
- The monsoon winds carry water and it rains.
- Uneven heating of the land and water surfaces causes two types of breezes as sea breeze and land breeze. Land breezes come from land while sea breezes come from the ocean or other water bodies.

Difference between land and sea breeze

Land breeze: At night, the land cools down faster than water in sea. So, the air above the sea is warmer than the air over the land surface. As it is lighter, the warmer air over the sea rises up, creating a low-pressure area above the water surface. So, the cool air from the land rushes to take its place and this phenomenon is referred to as land breeze.

Sea breeze: During the day the land absorbs heat better than water. This makes the air close to the land surface warmer. The warmer air rises up, creating a low-pressure area on the land surface. The cool air from the sea rushes to take its place and this phenomenon is referred to as sea breeze.

Monsoon winds

The winds blowing from the sea towards the land are loaded with moisture and bring rain. These winds that bring rain are called monsoon winds. An Indian Ocean is mainly responsible to bring rain bearing monsoon winds to Kerala coast in June every year.