

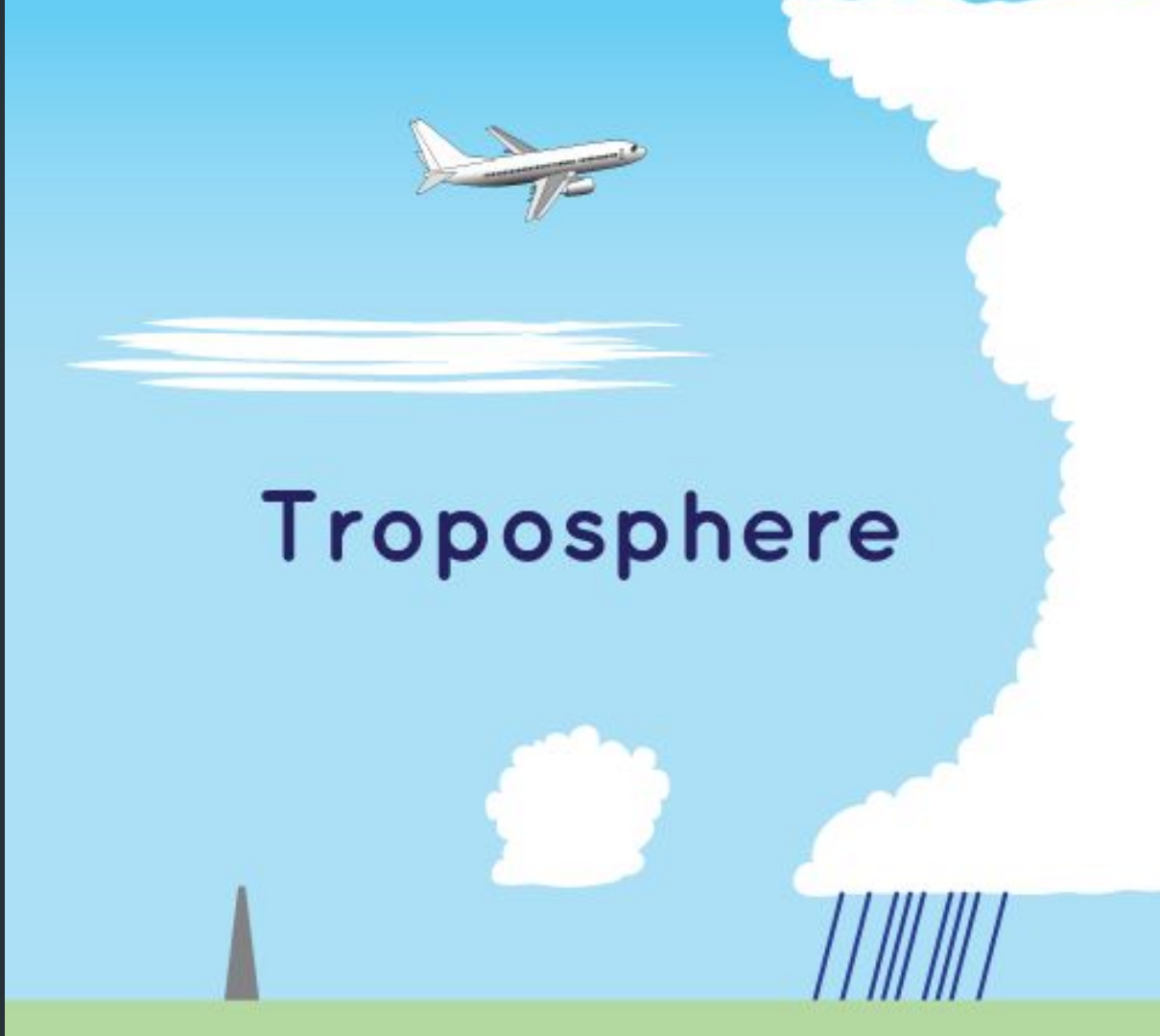
A satellite view of Earth at night, showing the curvature of the planet and the glowing lights of cities and urban areas. The lights are concentrated in the lower half of the frame, with a dark blue arc of the atmosphere visible at the top. The text "Benchmark 1.1 Google Slides Presentation" is overlaid in white on the left side of the image.

Benchmark 1.1 Google Slides Presentation

The Earth's Atmosphere

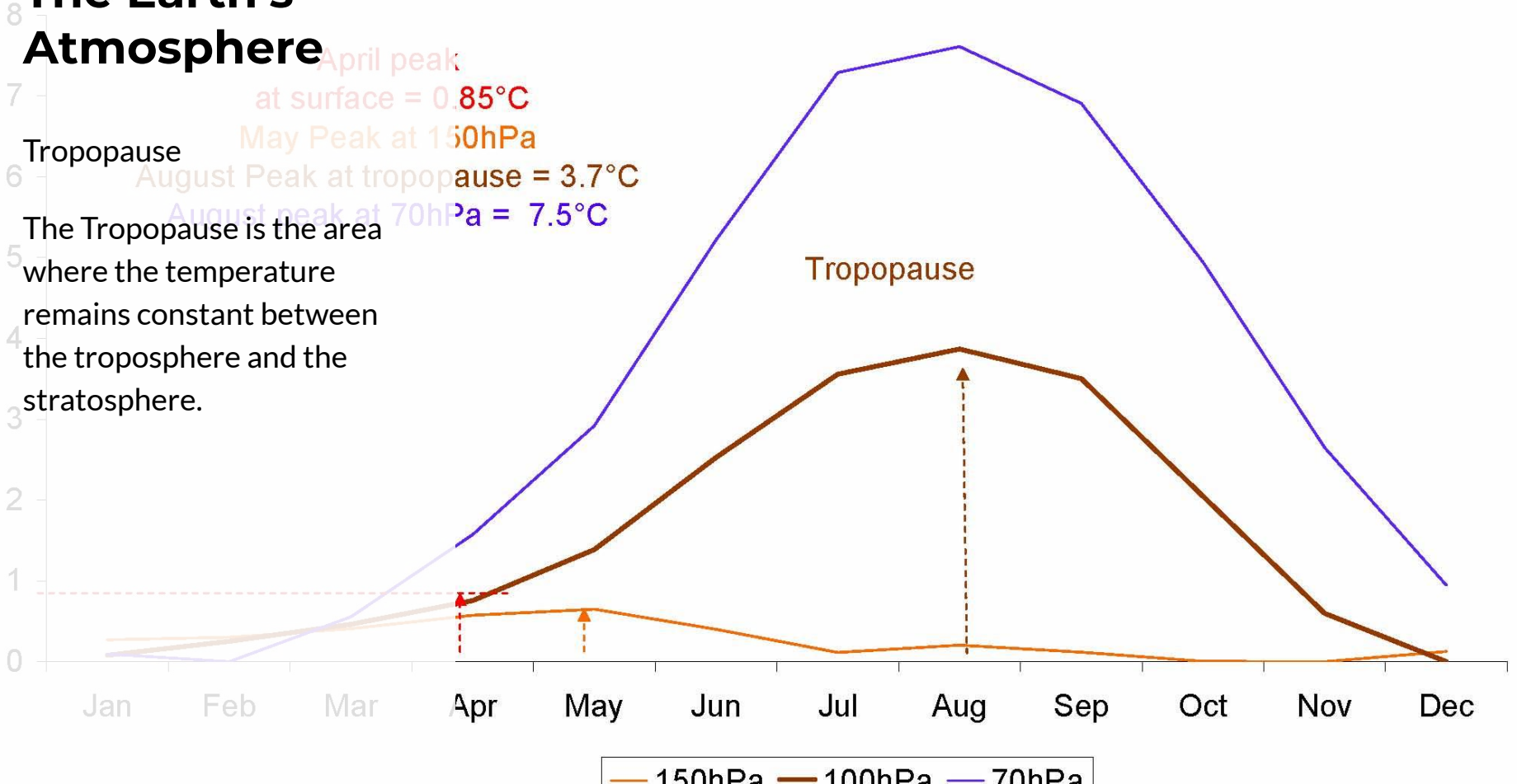
Troposphere

- The troposphere is the layer closest to earth. This is layer we live on.
 - The troposphere extends to about 12km
 - The troposphere is also where all weather occurs
 - The temperature decreases at a rate of 6.5 degrees celsius per kilometer to the tropopause
 - This is also the layer where most airplanes fly.
 - The air is made of 78% nitrogen 21% oxygen and about 1% Argon, water vapor, and carbon dioxide.
-
-
-



variation in mean monthly temperature
Where: Equator to 10° north (warmest latitude)
When: 1948-2008

The Earth's Atmosphere



The Earth's Atmosphere



Stratosphere

- The Stratosphere is the second layer in our atmosphere
- The Stratosphere extends to about 50km
- The Temperature in the Stratosphere ranges from, -60° to 0° Celcius
- A very important feature about this layer is that it contains the ozone layer. The ozone layer shields earth from UV radiation.
- Another very important feature about this layer is the jet streams that can be found their. These jet streams contain very high speed winds.



The Earth's atmosphere

Stratopause

The Stratopause is the region between The Stratosphere and the mesosphere

Ionosphäre

≈ 500 km

Exosphäre

Thermosphäre

Mesopause

≈ 80 km

Mesosphäre

Stratopause

≈ 50 km

Stratosphäre

Topopause

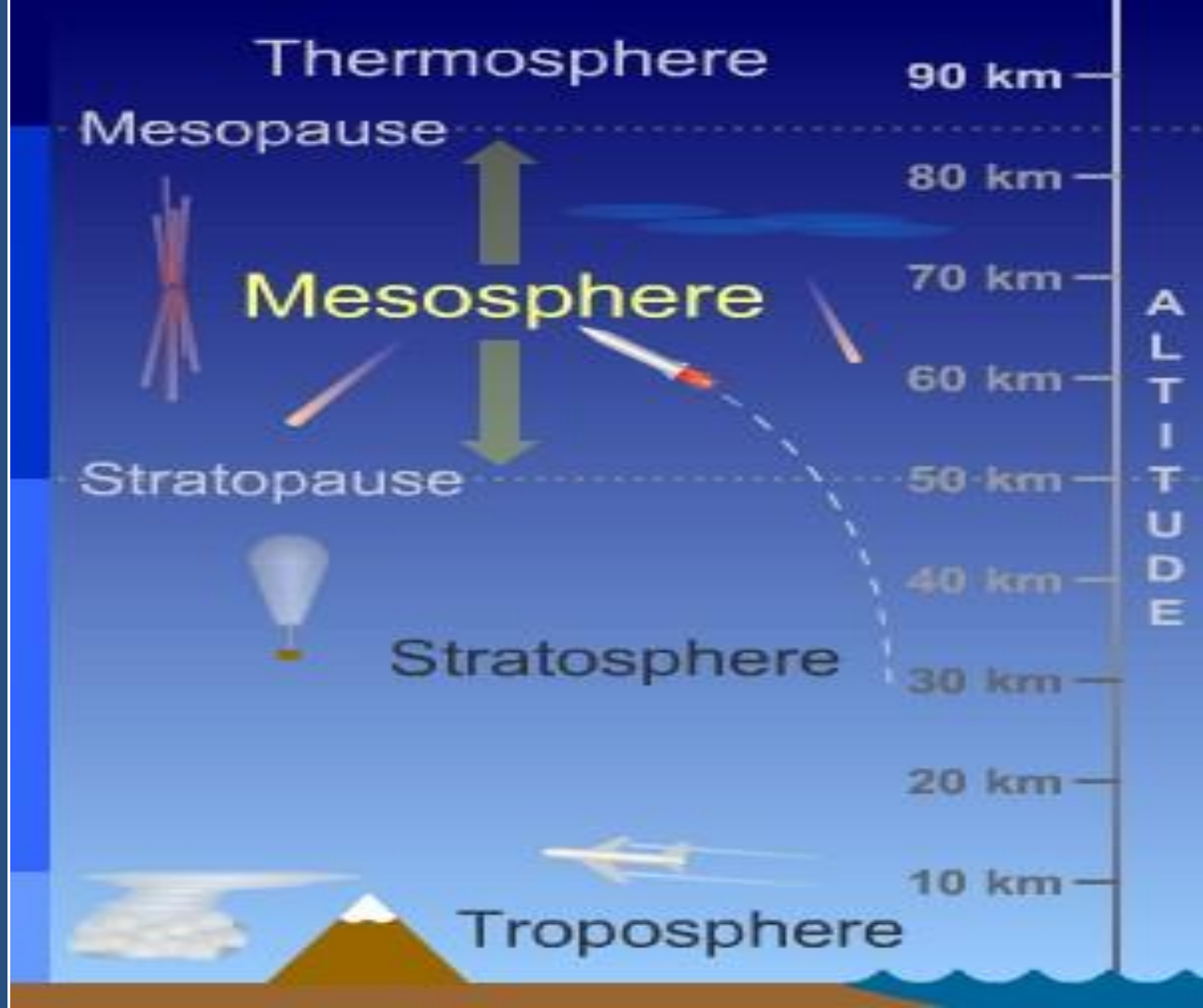
≈ 15 km

Toposphäre

The Earth's Atmosphere

Mesosphere

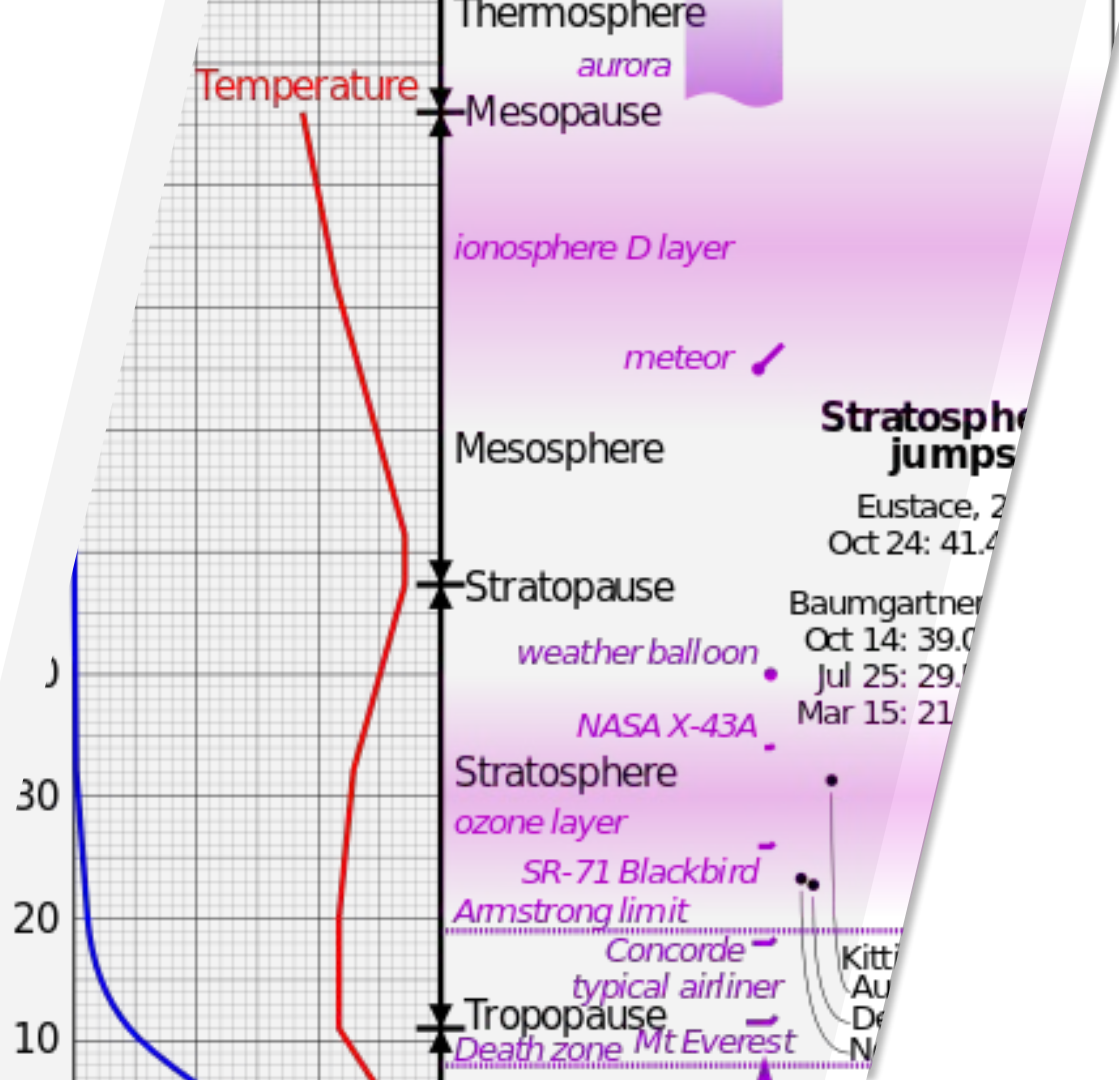
- The mesosphere is the 3rd layer in our atmosphere
- The mesosphere extends to about 85km
- This is also the coldest layer in the atmosphere
- The temperature in the mesosphere ranges from 0 to 100 degrees celsius



The Earth's Atmosphere

Mesopause

The Mesopause is the region between the mesosphere and the thermosphere. The temperature in the mesopause remains constant.



Thermosphere

The Earth's Atmosphere

Thermosphere

- The Thermosphere is the 4th layer in our atmosphere
- This layer extends to about 85km
- The Temperature in the increases by a lot with an increase in elevation.
- The air in this layer is so thin it can't be measured



The Earth's Atmosphere

Ionosphere

Within the thermosphere is the ionosphere. This layer contains tiny particles called ions. Low frequency radio waves bounce off of it and return to earth. This layer is also responsible for the aurora borealis. Also known as the Northern and Southern Lights.



The Earth's Atmosphere

Exosphere

The exosphere is the highest layer in our atmosphere. The exosphere is a thin, atmosphere-like volume surrounding a planetary body where molecules are gravitationally bound to that body, but where the density is too low for them to behave as a gas by colliding with each other.



Air

Air is an invisible gaseous substance surrounding the earth, a mixture mainly of oxygen and nitrogen.

Air Pressure

Air Pressure is the force exerted onto a surface by the weight of air



Millibar

A Millibar is one thousandth of a bar, the cgs of atmospheric pressure equivalent to 100 pascals

Vacuum

A vacuum is a space entirely devoid of matter



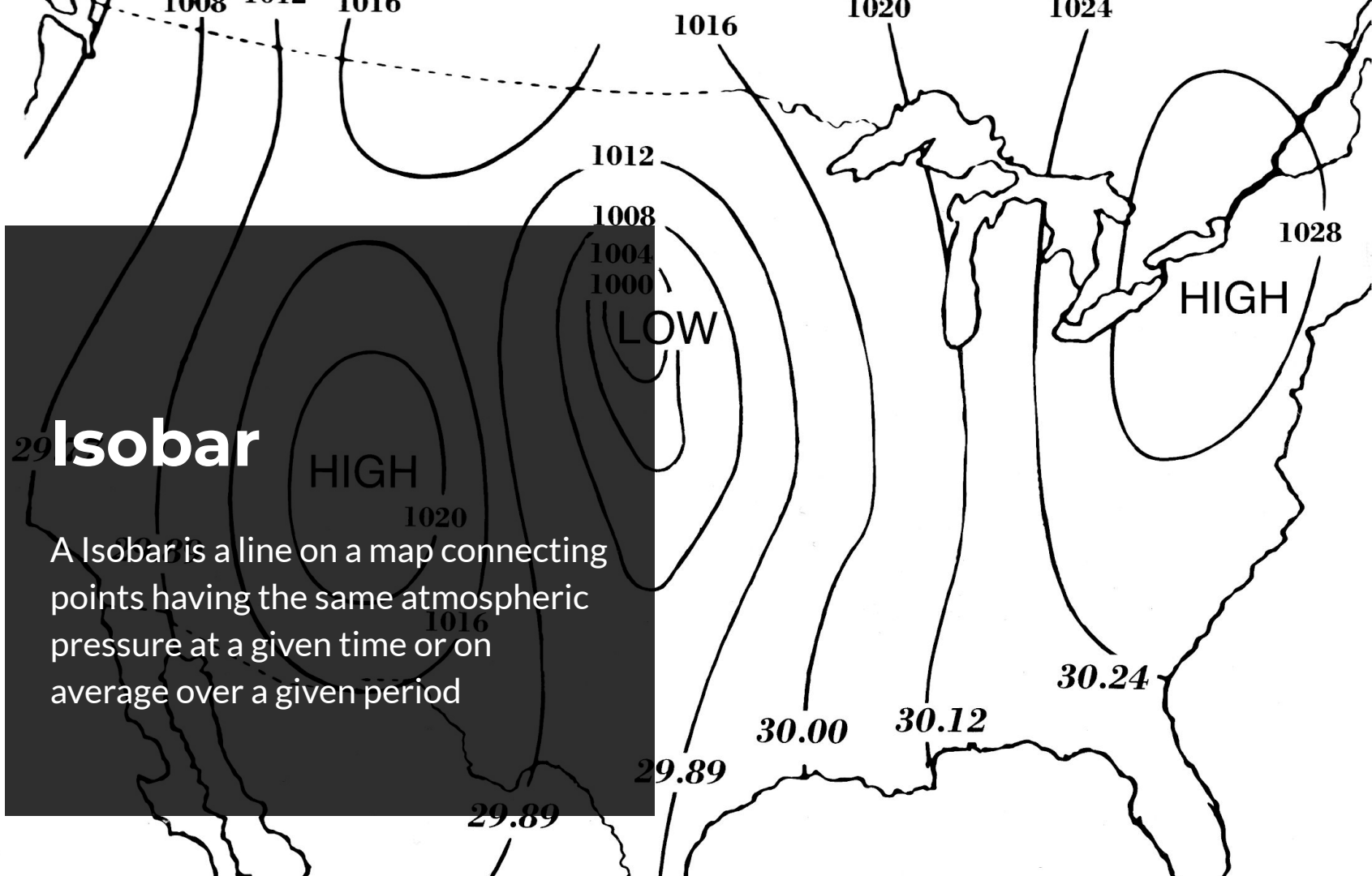
Humidity

Humidity is a quantity representing the amount of water vapor in the atmosphere or in a gas. (humidity is everyday for us)



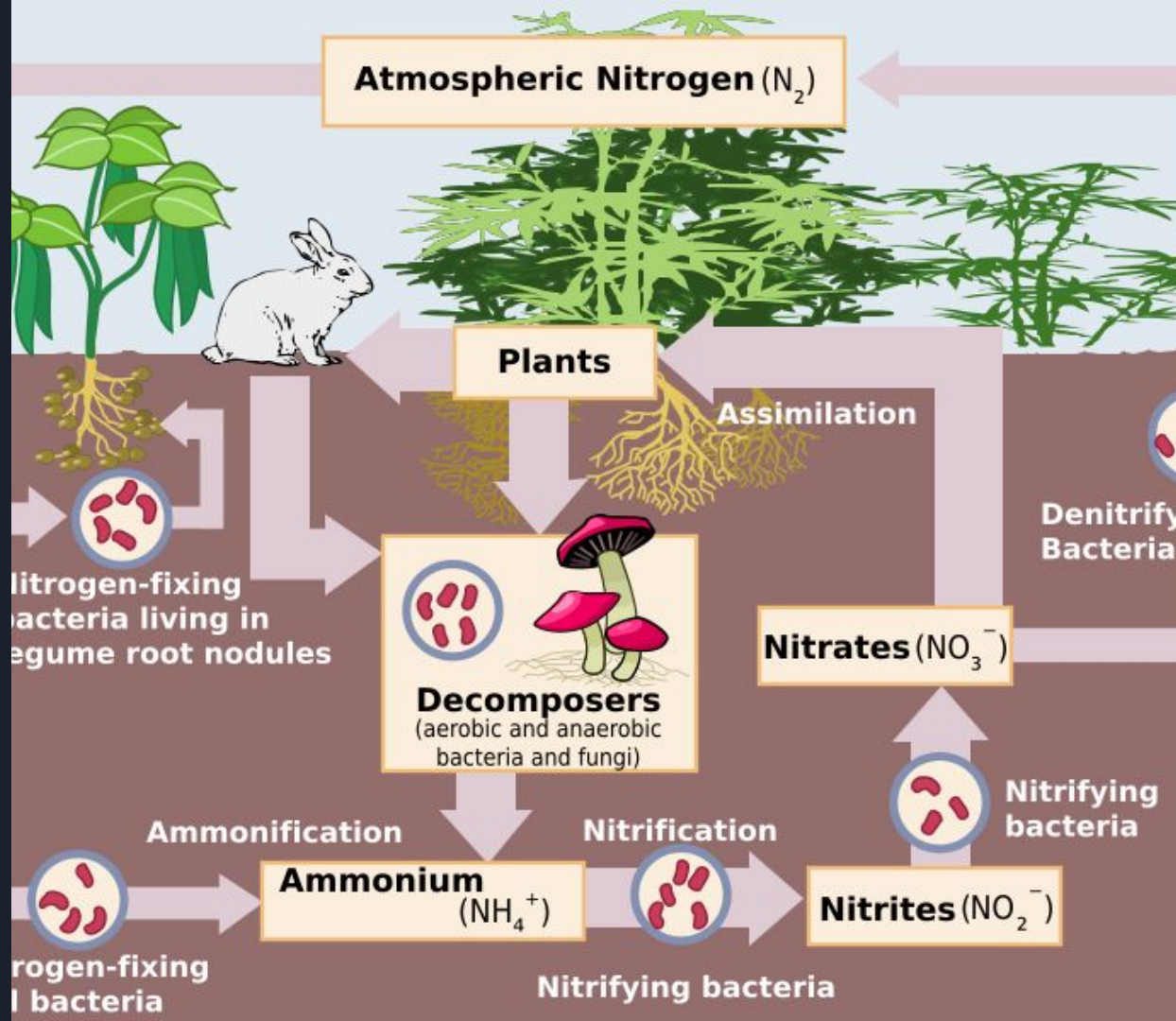
29 Isobar

A Isobar is a line on a map connecting points having the same atmospheric pressure at a given time or on average over a given period



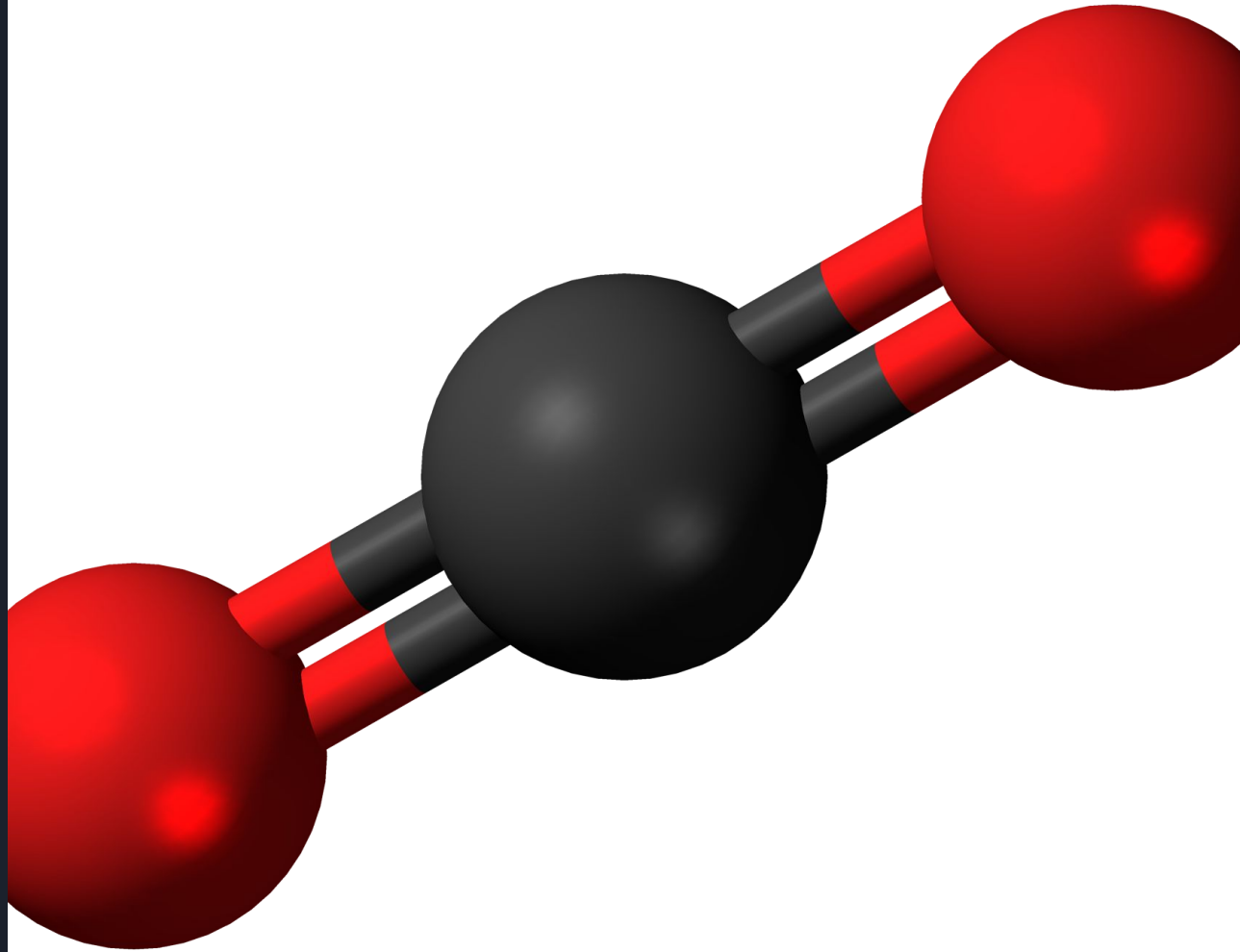
Nitrogen Cycle

The Nitrogen Cycle is when nitrogen is removed from the air by nitrogen fixing bacteria that lives in the soil and on the roots of some plants. They change the Nitrogen into a Nitrogen-compound that all plants need. Animals that eat the plants get the the Nitrogen-compounds they need and then plants and animals return the compounds to the soil when they die and decay. The process of decaying returns Nitrogen to the atmosphere



Carbon Dioxide

Carbon Dioxide is basically just a product of oxygen consumption.



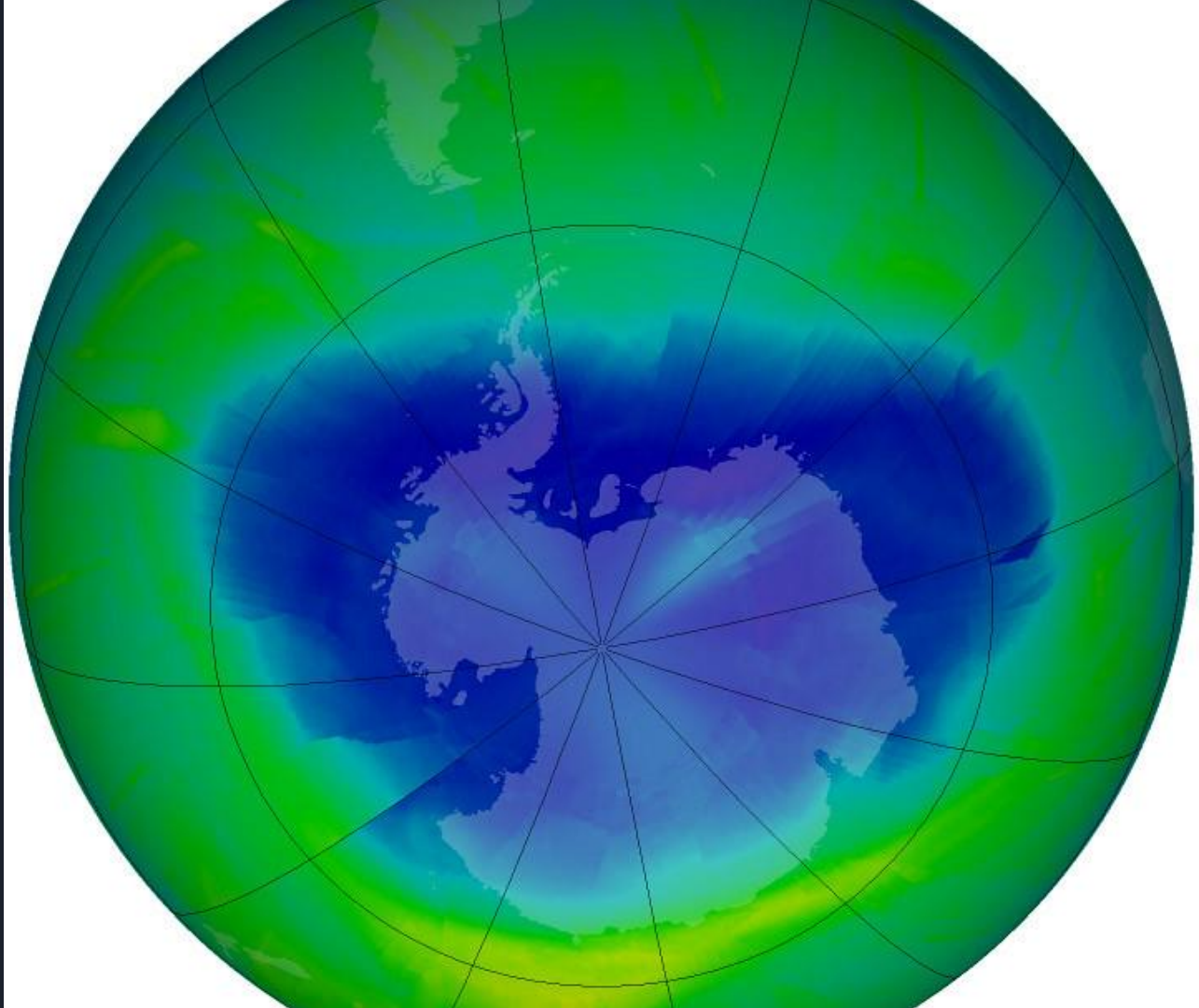


Water Vapor

Water vapor is added by evaporation. Though the percentage varies depending on the time of the day, season and location. Evaporation is when a liquid turns into vapor.

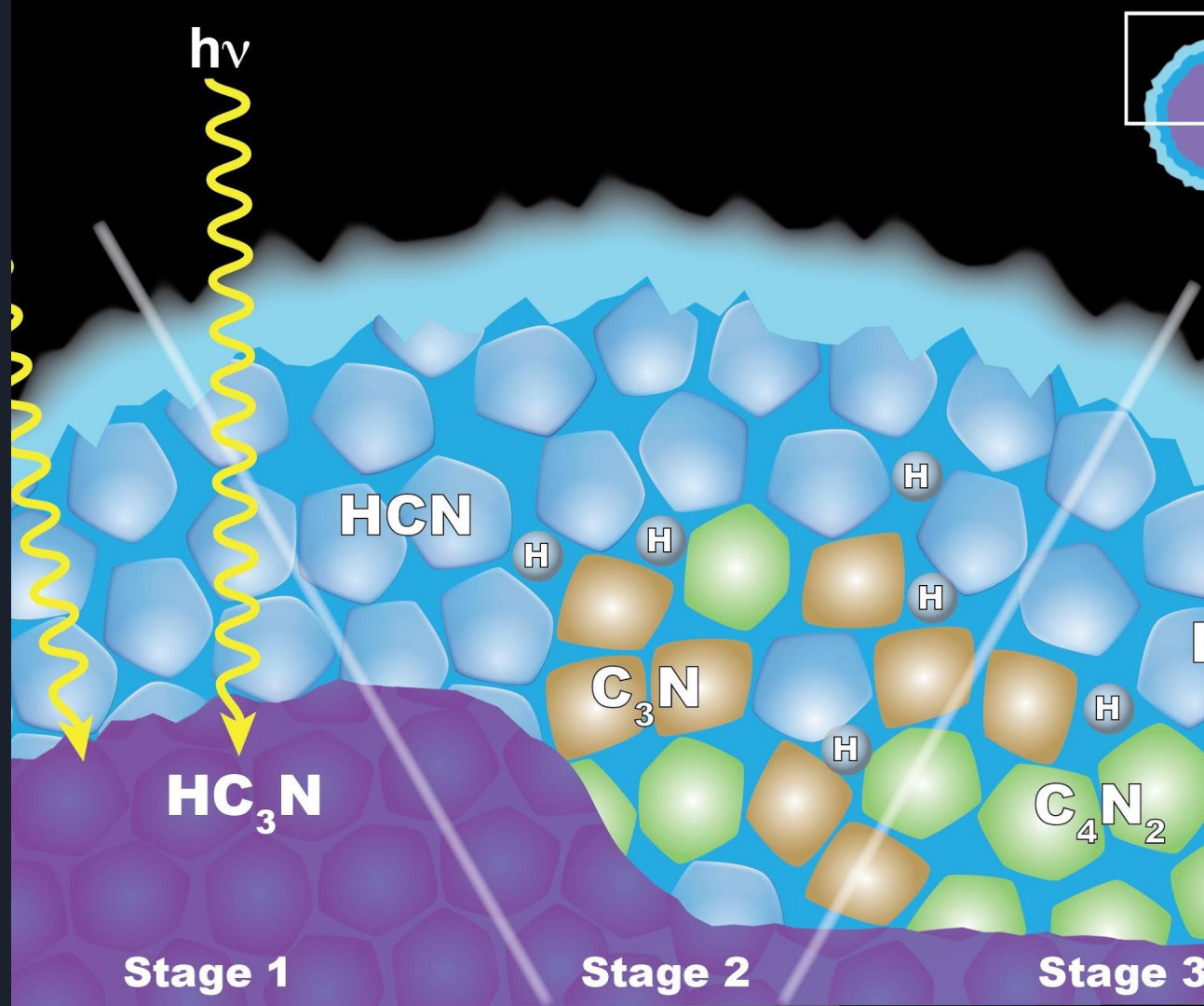
Ozone

Ozone is very important to earth's atmosphere. It protects earth's inhabitants from UV light rays from the sun. Most scientist believe without the ozone we would cease to exist. Sadly we humans are damaging it by Fluro-Hydro-Carbons found in spray cans automobile and airplane exhaust, etc.



Solid Particles

Solid Particles include wind blown dust, volcanic ash and dust, microscopic organisms, vaporized meteoroids, ocean salts, etc.

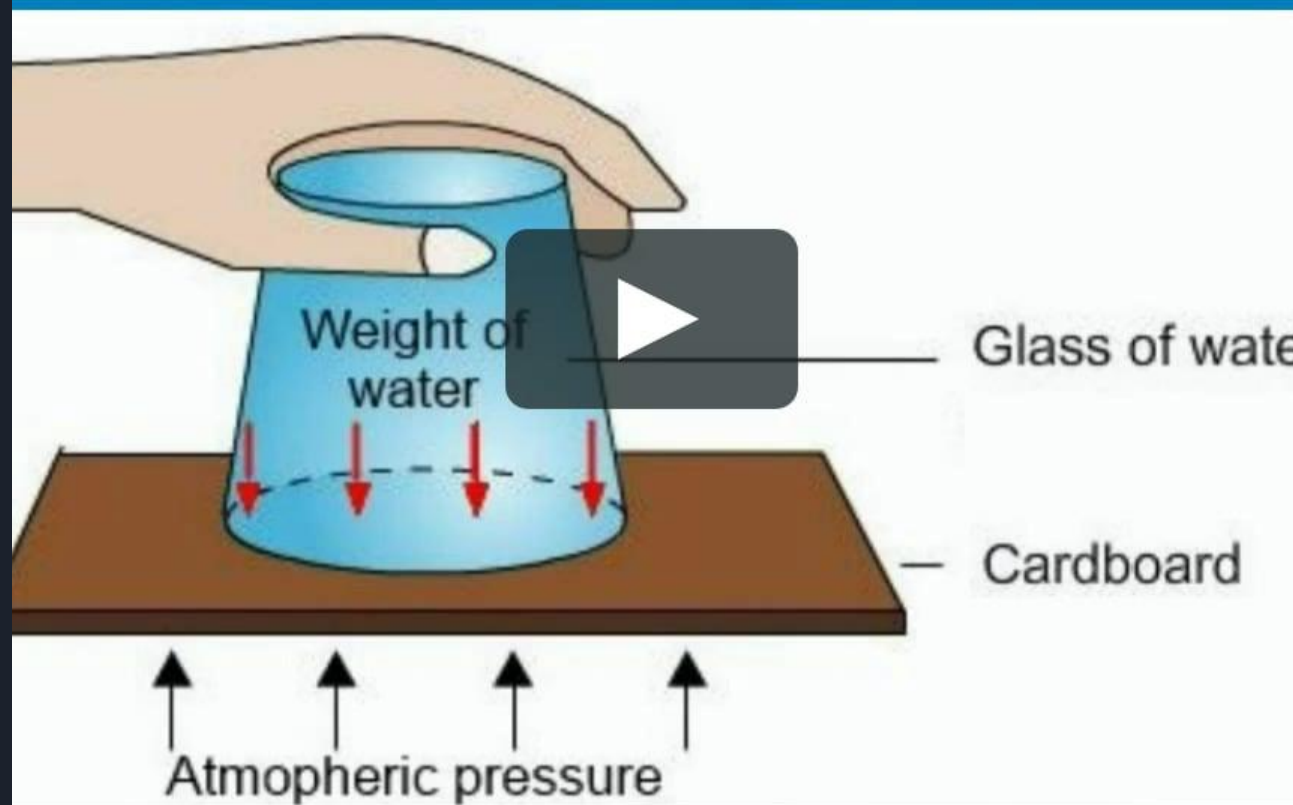


Existence of atmospheric pressure

Existence of atmospheric pressure on cardboard

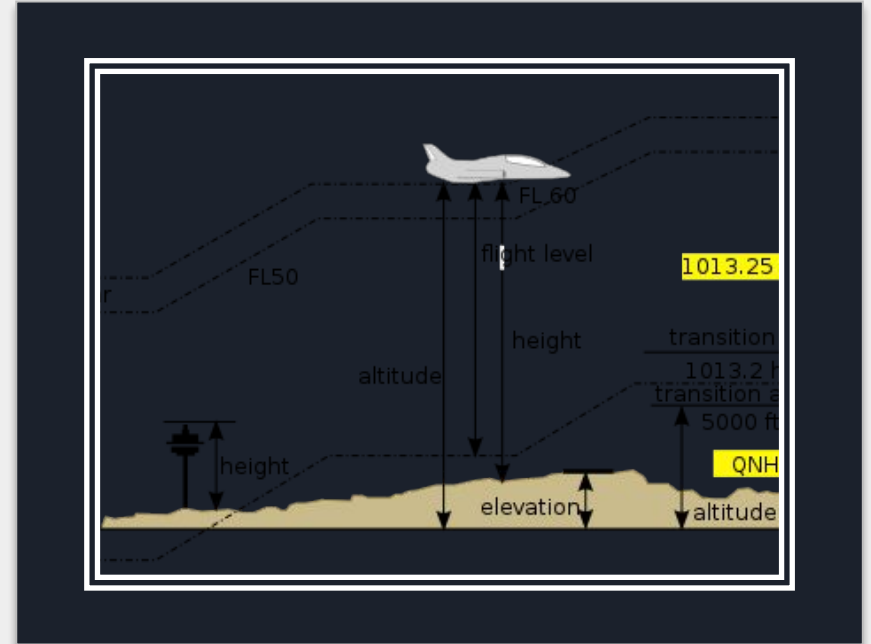
Atmospheric Pressure

The ratio of the weight of the air to the area on which it presses.



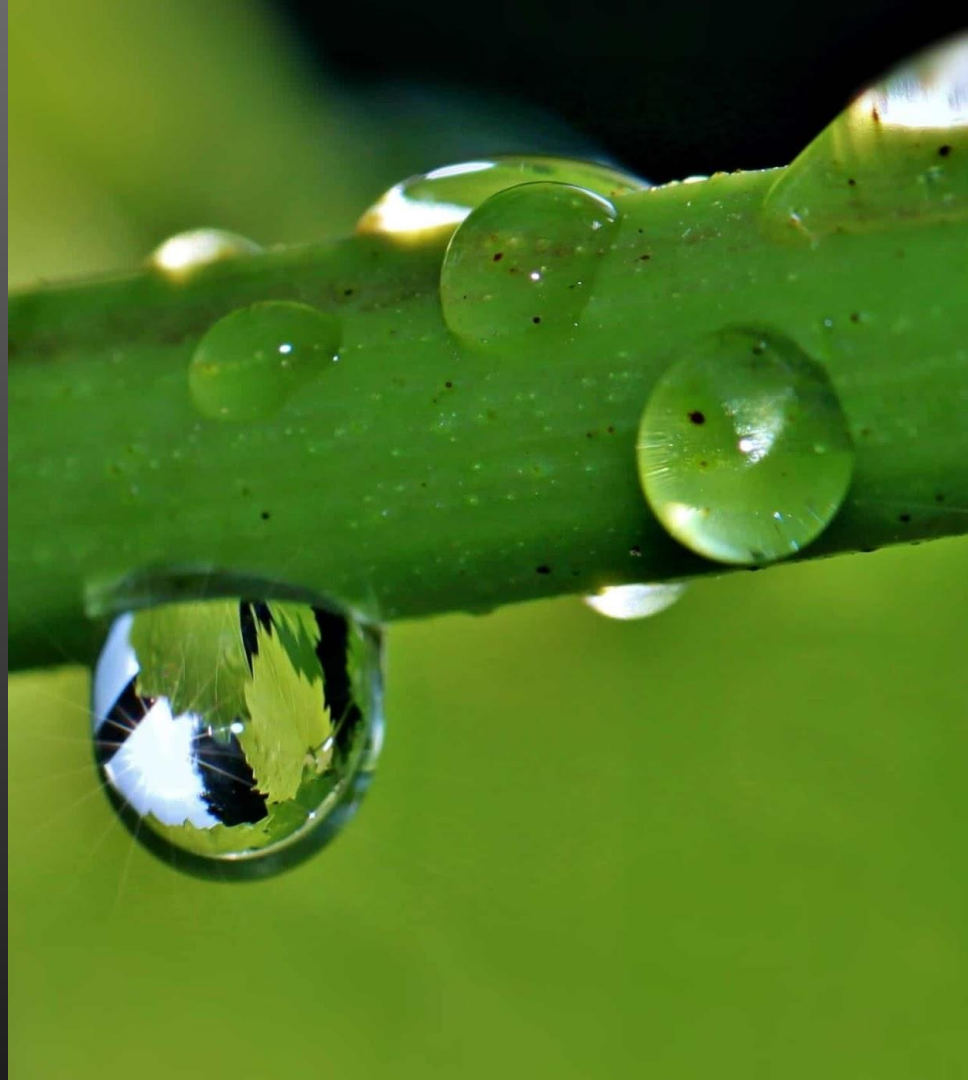
Altitude

Altitude is when there is less air as you go up in the atmosphere, therefore there is less pressure



Moisture

Moisture is when dry air is heavier than moist air therefore, water vapor rises.





Wind

Wind is the natural movement
of the air



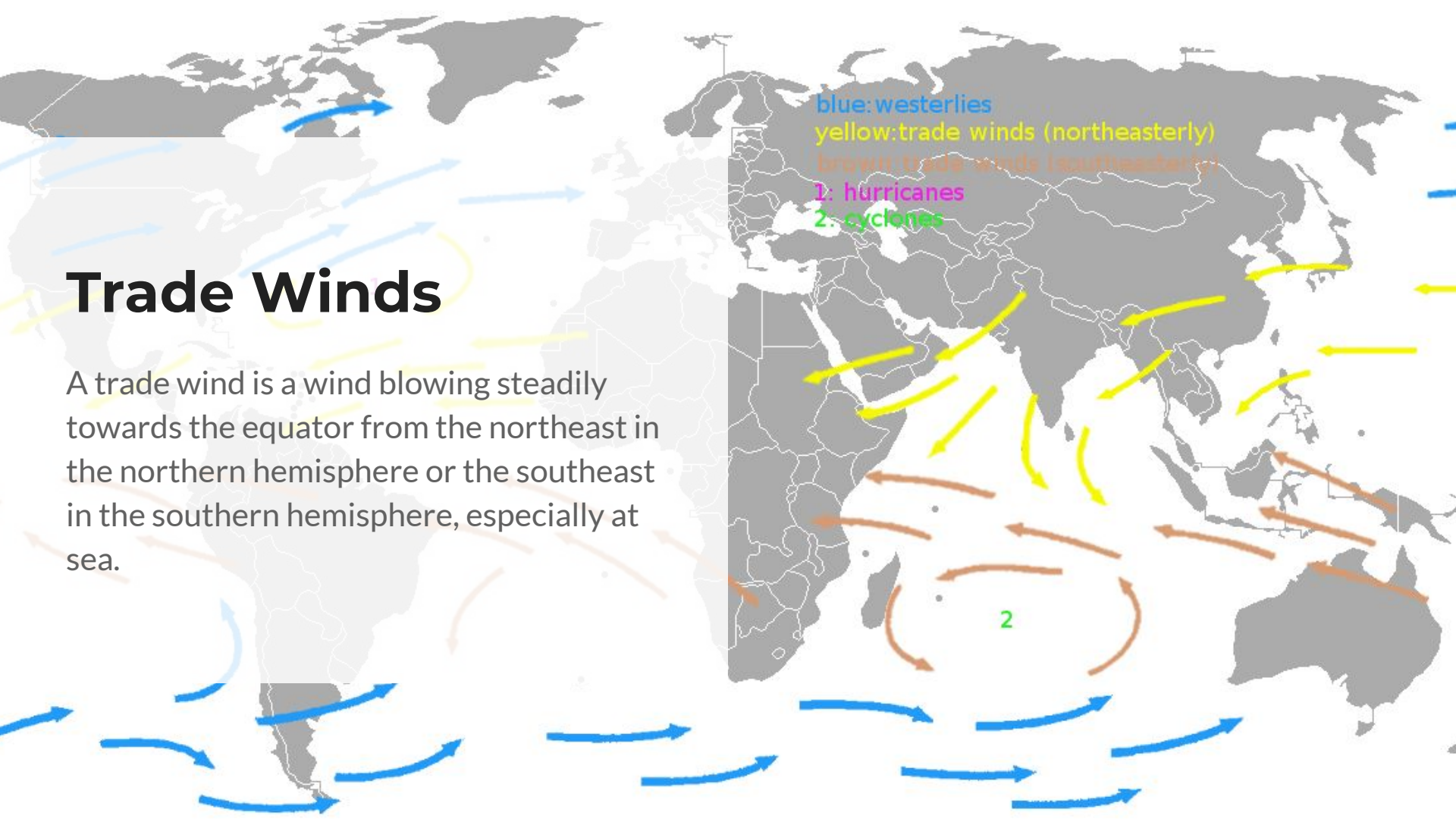
Coriolis Effect

The coriolis effect-a mass moving in a rotating system experiences a force acting perpendicular to the direction of motion and to the axis of rotation.

Trade Winds

A trade wind is a wind blowing steadily towards the equator from the northeast in the northern hemisphere or the southeast in the southern hemisphere, especially at sea.

blue: westerlies
yellow: trade winds (northeasterly)
brown: trade winds (southeasterly)
1: hurricanes
2: cyclones



A large, dark silhouette of a pine tree against a bright sky, with a text box overlaid on the left side. The tree's branches are intricate and spread out, creating a complex pattern of dark lines against the light background. The text box is a dark, semi-transparent rectangle on the left side of the image, containing the title and definition.

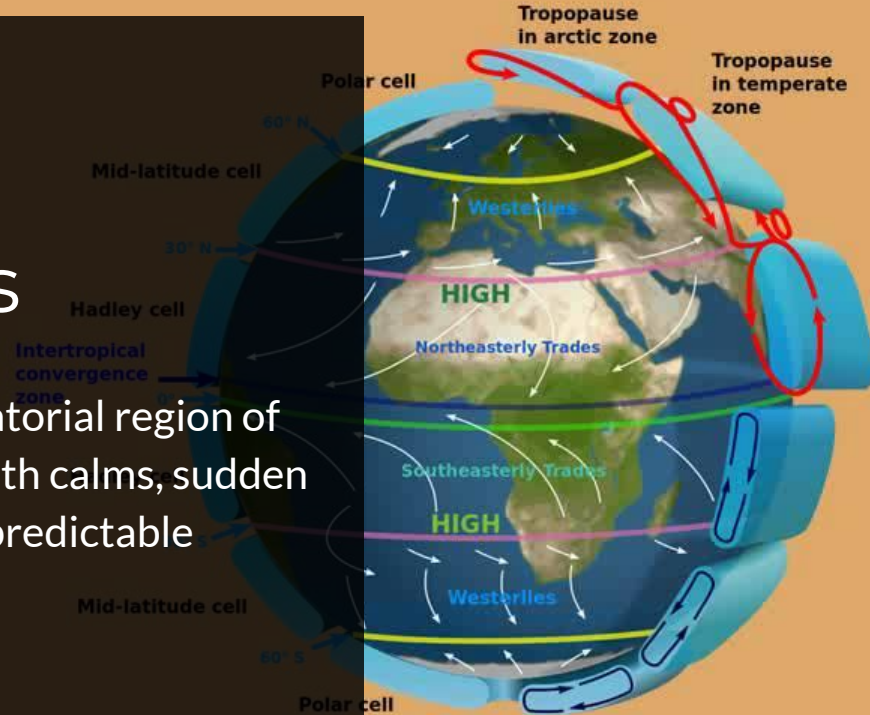
Prevailing Winds

A prevailing wind is a wind from the direction that is predominant at a particular place season.

Prevailing winds

Doldrums

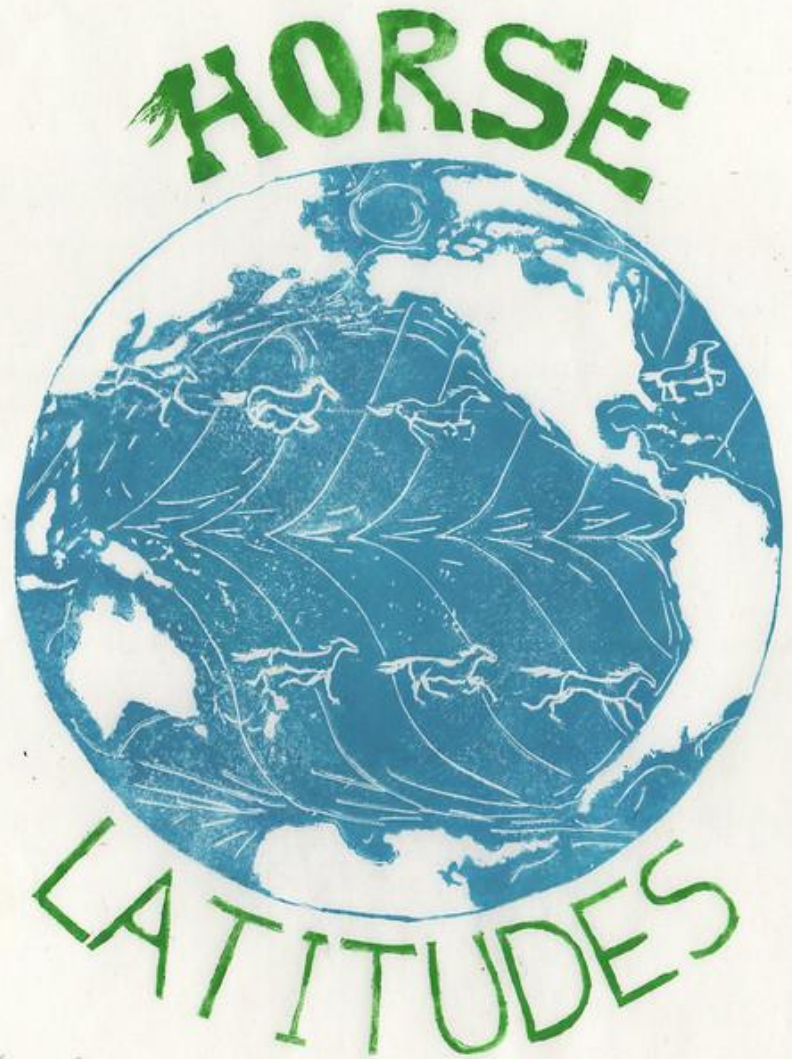
A doldrum is an equatorial region of the atlantic ocean with calms, sudden storms, and light unpredictable winds.



https://en.wikipedia.org/wiki/File:Earth_Global_Circulation_-_en.svg

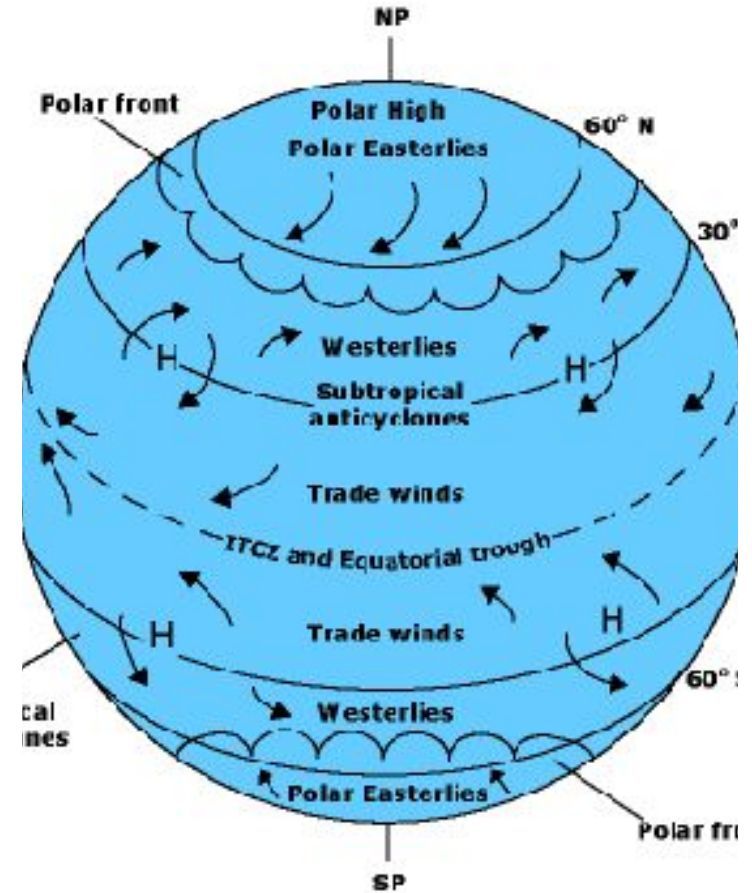
Horse Latitudes

A horse latitude is a belt of calm air and sea occurring in both the northern and southern hemispheres between the trade winds and the westerlies.



Polar Winds

These polar winds circulate in the cells between 60 and 90 degrees in each hemisphere



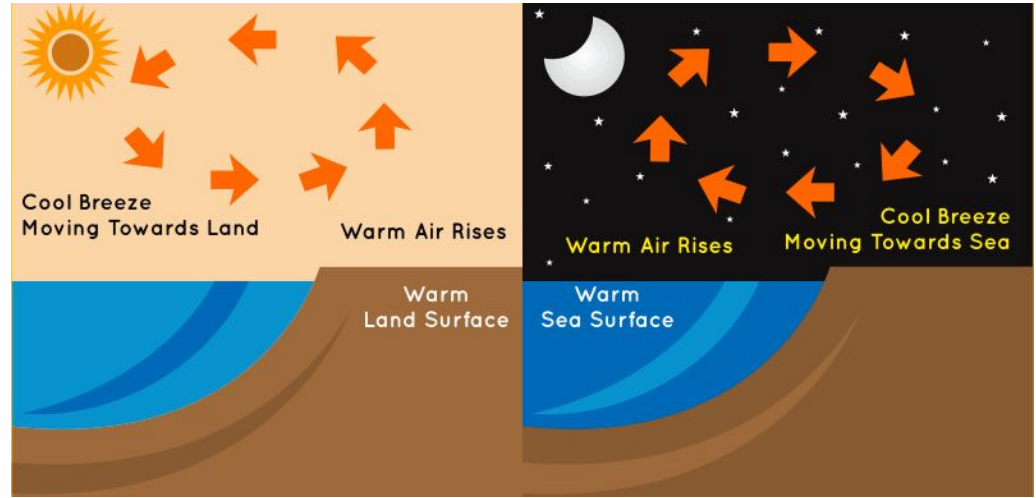
Global Winds

Global winds are winds that blow from 30 and 90 degrees along the earth's surface and are affected by the coriolis effect.

Sea Breeze

Sea Breeze-A sea breeze happens during the day. The land heats faster than the ocean creating low pressure over the land and high pressure over the water, therefore, a cool breeze blows from the sea to the land. (This is Florida weather from May-October.)

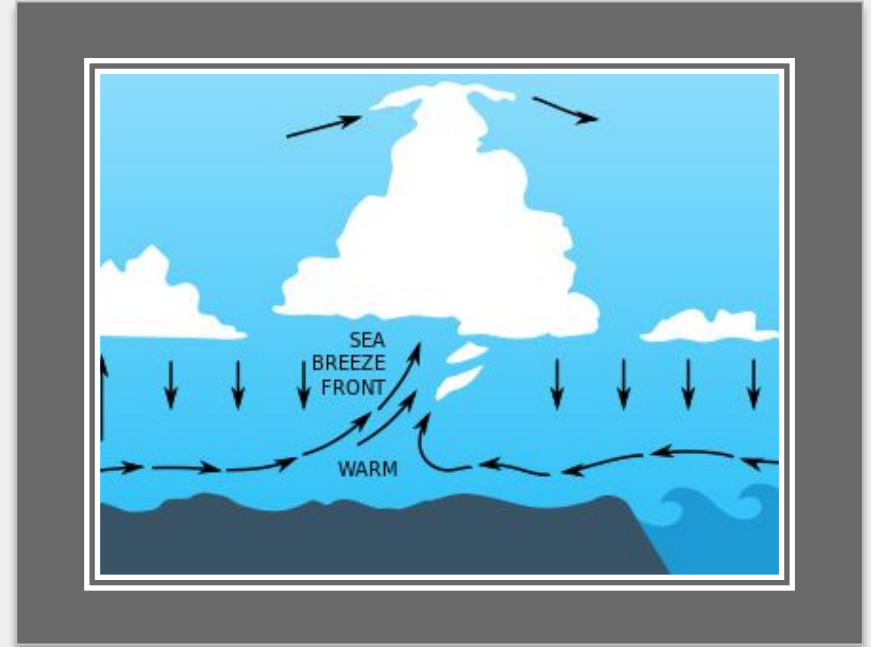
Land Breeze



Land Breeze-At night, the land loses heat faster than the ocean creating high pressure over the land. Therefore, a breeze blows from the land to the ocean.

Mountain Breeze

Mountain Breeze-During the day, warm air rises up mountain slopes, cooling and condensing the moisture. At night, the cooler, dry air blows down the mountain to the valleys below.



Pressure Belts

- Polar High
- Subpolar low
- Subtropical high
- Equatorial low
- Subtropical high
- Subpolar low



Wind Belts

- Polar Easterlies
- Prevailing Southwesterlies
- Northeast Trades
- Southeast Trades
- Prevailing Westerlies
- Polar Easterlies

