Global Climate Zones

Studyladder

Global Climate

The global climate is the long term distribution of heat and precipitation on the planet.

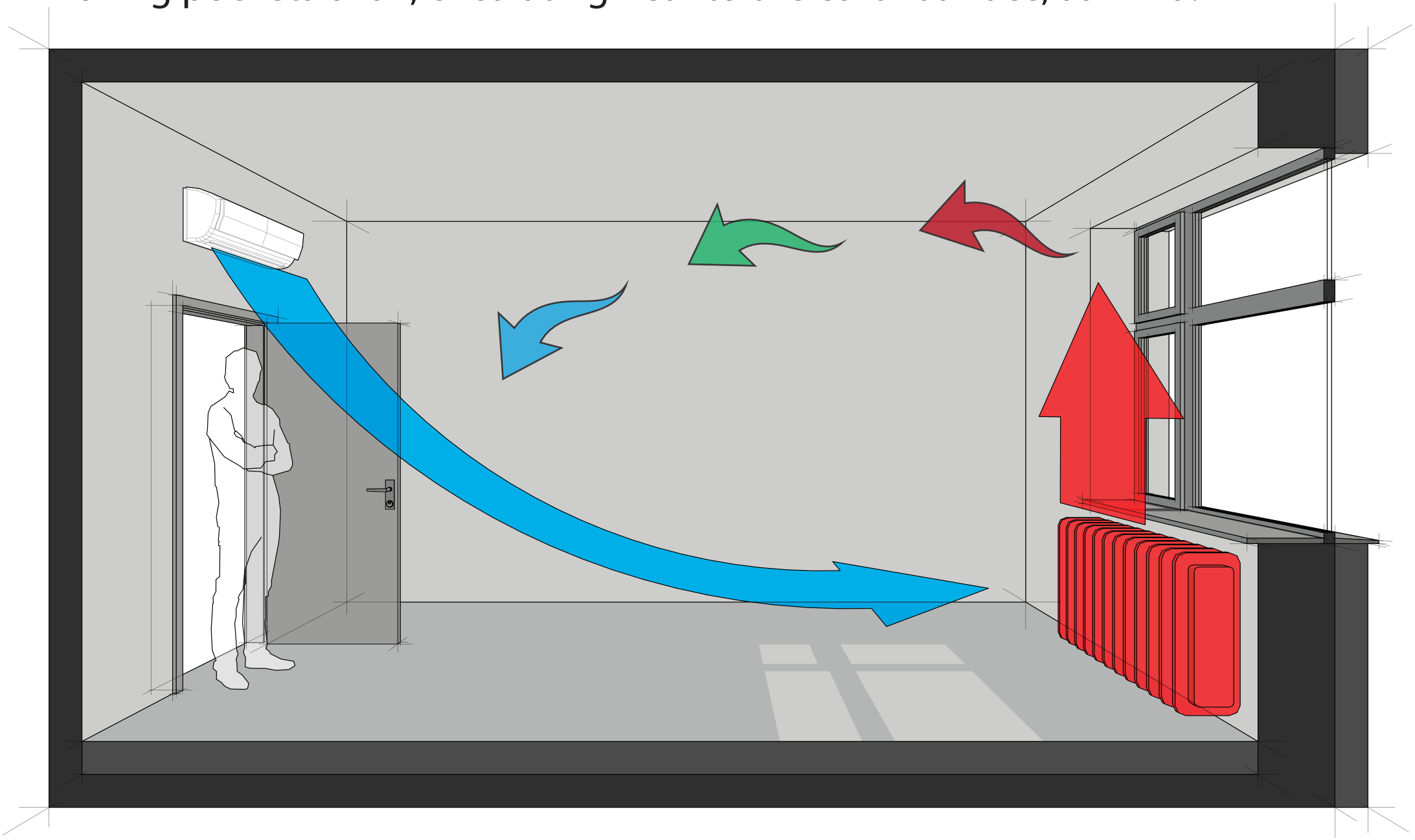
Climate Zones

Climate zones are characterised by temperature, precipitation, wind and ocean current patterns which determine short term weather conditions.

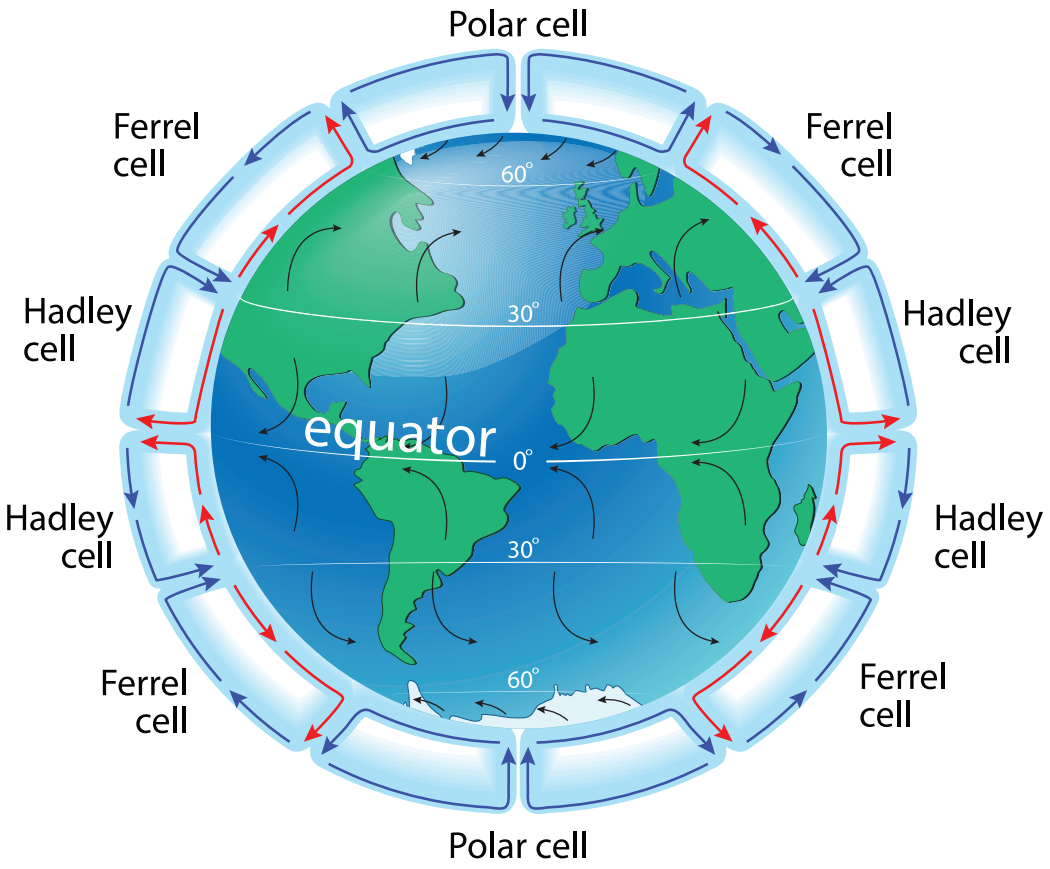
Climate Patterns

Climate patterns are recurring characteristics of the climate in a particular zone. They may repeat every year, like the Monsoon or every few years like El Niño and La Niña.

Cold air sinks while hot air rises. Air moves in our atmosphere in the same way. Air circulates because cold air moves in to replace rising warm air. We feel moving pockets of air, circulating near to the earth surface, as wind.



Atmospheric Circulation Patterns



Prevailing winds are affected by the movement of cells. Atmospheric cells make surface winds travel roughly in the directions shown by the black arrows. Prevailing wind direction is also affected by factors such as the shape of the land they are travelling over.

Areas near the equator receive the greatest amount of radiation from the Sun. This is why the temperature of the land and sea on either side of the equator, between the tropics, is significantly higher than at other parts of the globe.

As the land and sea in the tropical region warms, the air above them also warms and rises into the troposphere.
The warm air spreads to the north and south of the equator. When the air climbs high in the troposphere it begins to cool and sinks back to the ground again.

Warm air circulates in cells, transferring heat in different parts of the globe. The coolest air circulates in the polar cells, warmer air in the Ferrel cells and the warmest air circulates in the Hadley cells.

World Climate Zones