

# **MODULE-3**

**WINDS , STORMS AND CYCLONES**

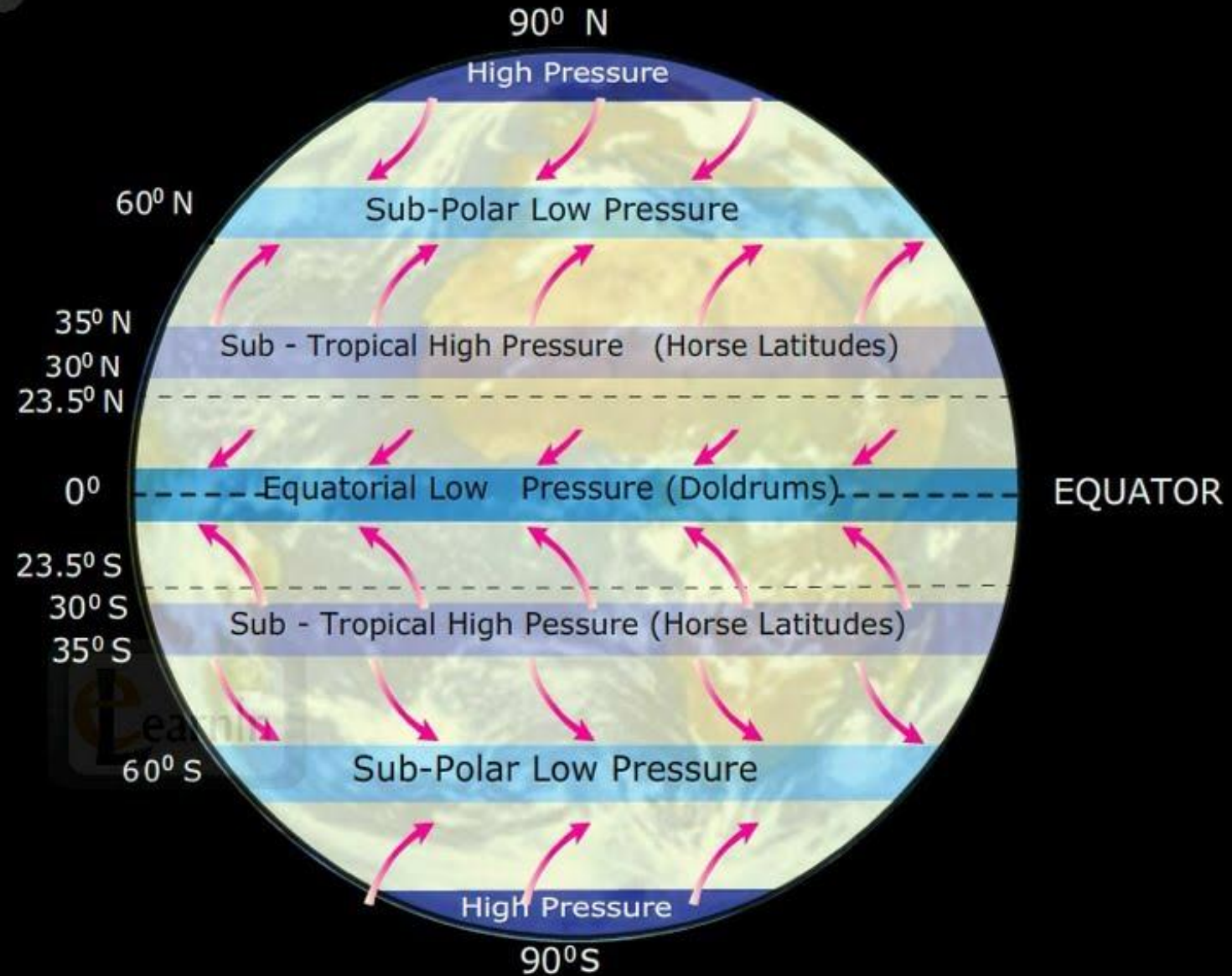
**WIND CURRENTS ARE  
GENERATED DUE TO UNEVEN  
HEATING ON THE EARTH**

# UNEVEN HEATING BETWEEN THE EQUATOR AND THE POLES

- Regions close to the equator get maximum heat from the Sun.
- The air in these regions gets warm.
- The warm air rises, and the cooler air from the regions in the 0–30 degrees latitude belt on either side of the equator moves in.
- These winds blow from the north and the south towards the 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 rushes in, to take its place.
- In this way, wind circulation is set up from the poles to the warmer latitudes,



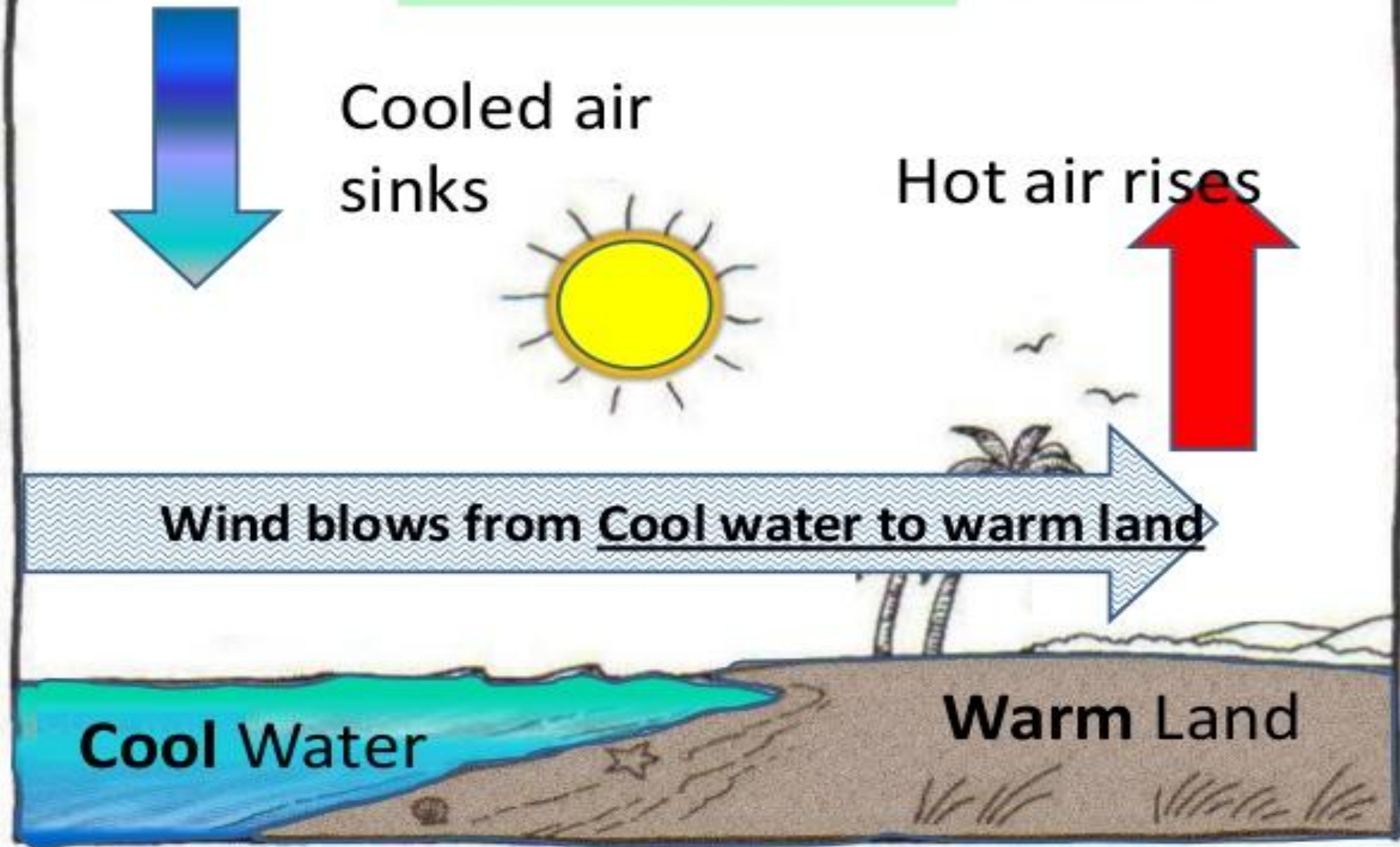
# UNEVEN HEATING OF THE EARTH



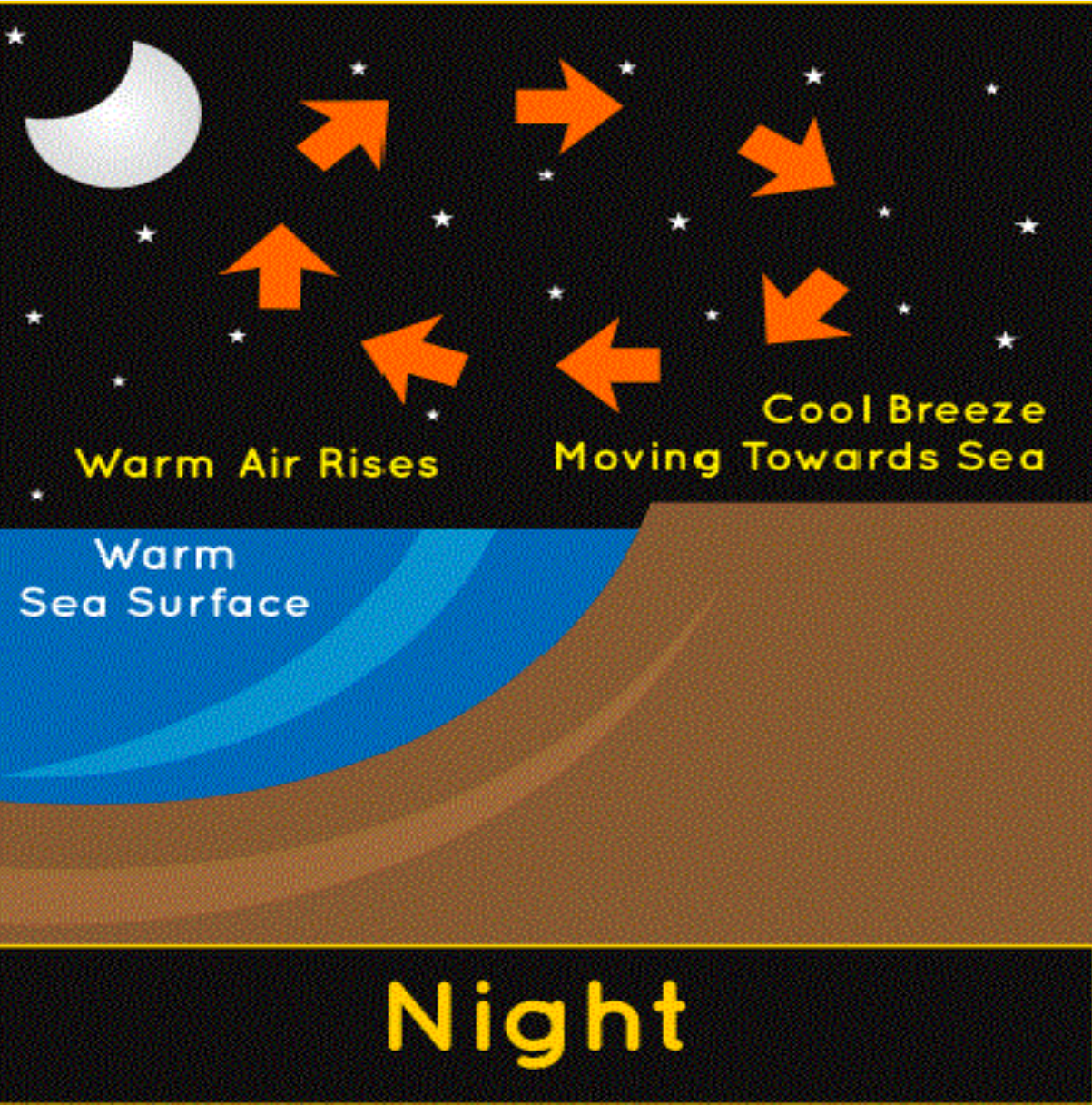
# UNEVEN HEATING OF LAND AND WATER

- In summer, near the equator the land warms up faster and most of the time the temperature of the land is higher than that of water in the oceans.
- 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**

# Sea Breeze



**IN WINTER, THE DIRECTION OF THE  
WIND FLOW GETS REVERSED; IT  
FLOWS FROM THE LAND TO THE  
OCEAN**







**THUNDERSTORM**



- Thunderstorms develop in hot, humid tropical areas like India very frequently.
- The rising temperatures produce strong upward rising winds.
- These winds carry water droplets upwards, where they freeze, and fall down again.
- The swift movement of the falling water droplets along with the rising air create lightning and sound.
- It is this event that we call a thunderstorm



# **PRECAUTIONS TO BE TAKEN DURING THUNDERSTORM**

**IF A STORM IS ACCOMPANIED  
BY LIGHTNING, WE MUST TAKE  
THE FOLLOWING PRECAUTIONS**

# **DO NOT TAKE SHELTER UNDER AN ISOLATED TREE. IF YOU ARE IN A FOREST TAKE SHELTER UNDER A SMALL TREE**

Lightning strikes tall objects.  
Do not take shelter under tall trees.

This tree was  
split in half by  
lightning



# DO NOT LIE ON THE GROUND

## When Lightning Strikes



**When you are  
outdoors**

**Don't lie flat on  
the ground; this will  
make you a bigger target**



<http://www.ndma.gov.in/>



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# **DO NOT TAKE SHELTER UNDER AN UMBRELLA WITH A METALLIC END**

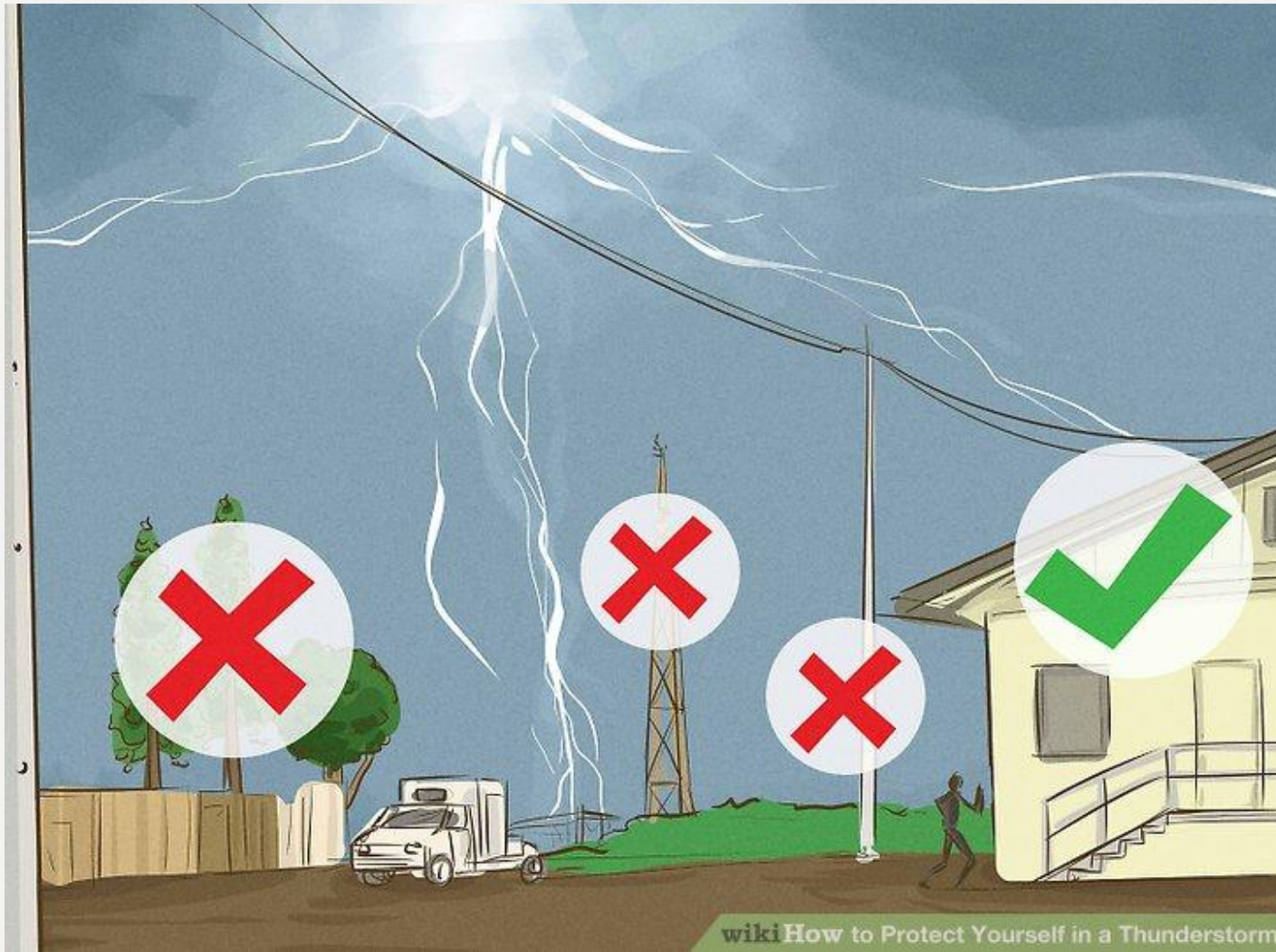




**DO NOT SIT NEAR A WINDOW**

**OPEN GARAGES, STORAGE SHEDS, METAL  
SHEDS ARE NOT SAFE PLACES TO TAKE  
SHELTER.**

**IF YOU ARE IN WATER, GET OUT AND  
GO INSIDE A BUILDING.**



# A CAR OR A BUS IS A SAFE PLACE TO TAKE SHELTER

