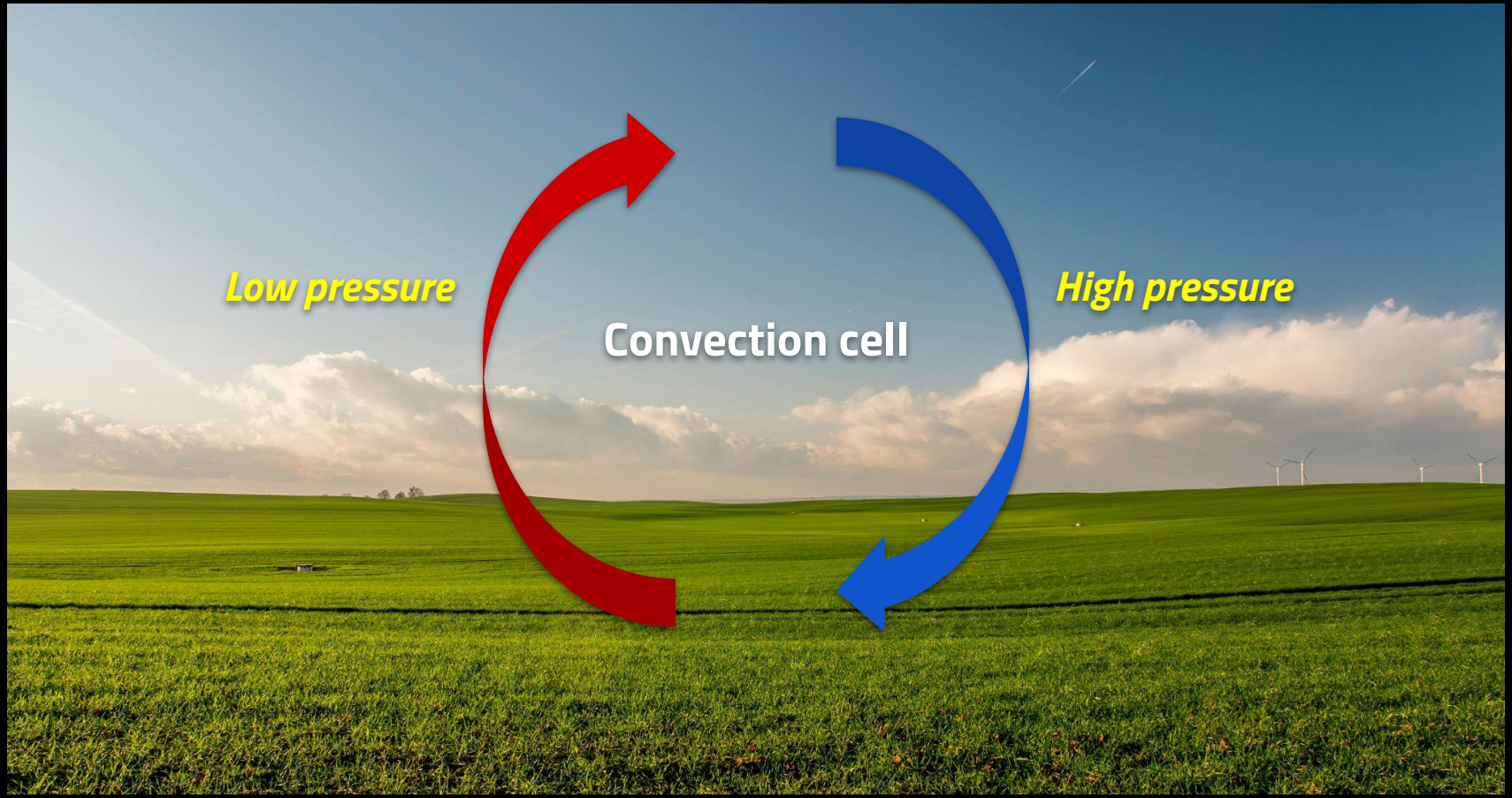
Lesson 2: Local and Global Wind Patterns

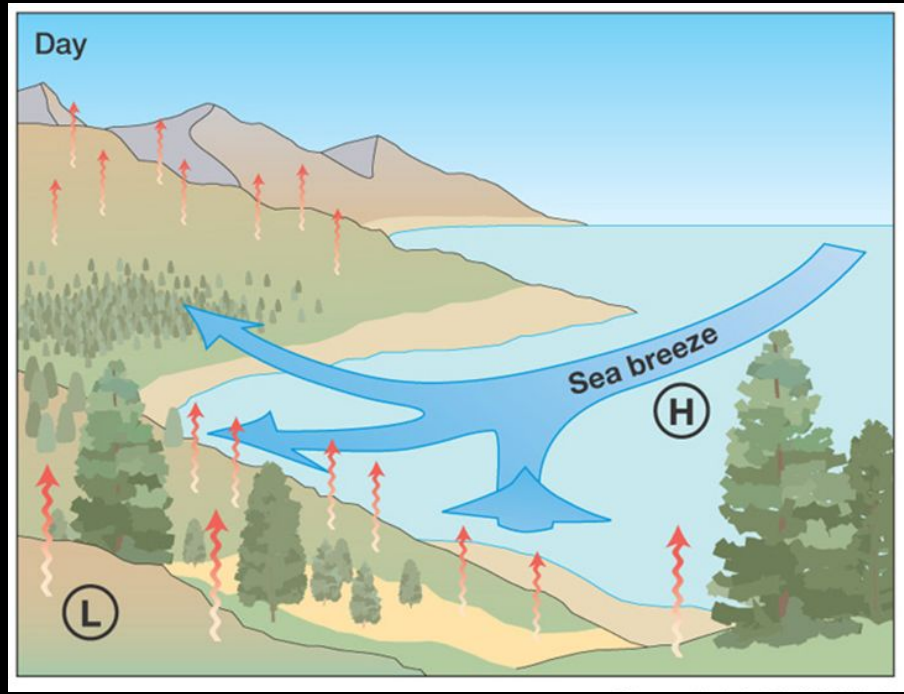
Learning Targets:

- I can describe how local wind systems are generated.
- I can explain the mechanisms that drive global wind patterns.

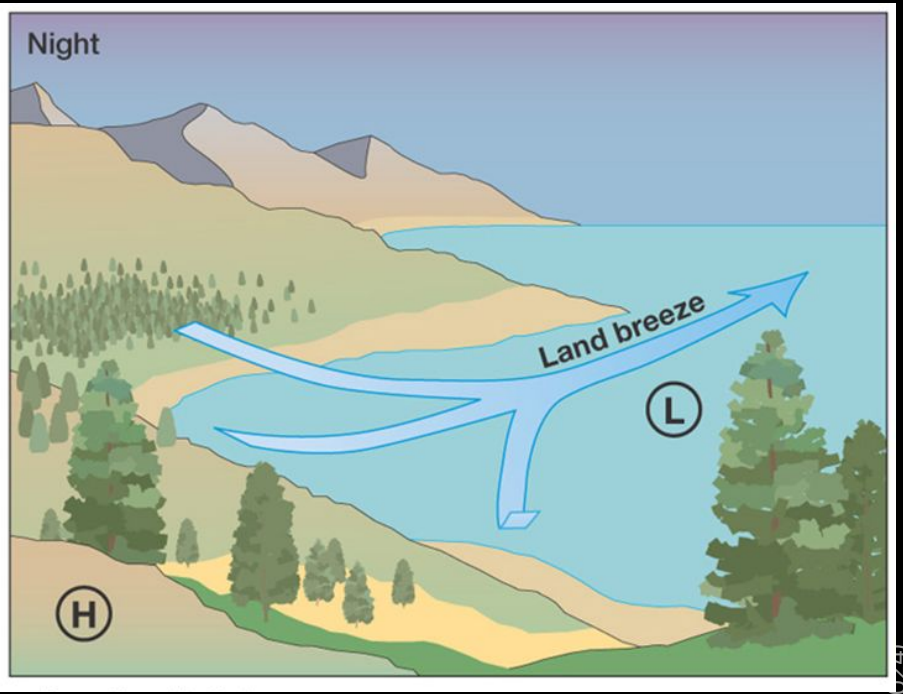
How does heat circulate in the atmosphere?



How are land and sea breezes generated?

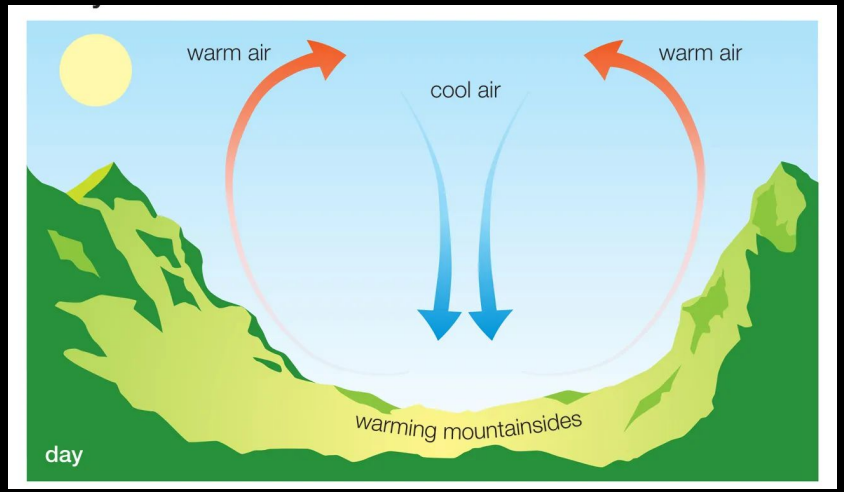


Sea Breeze

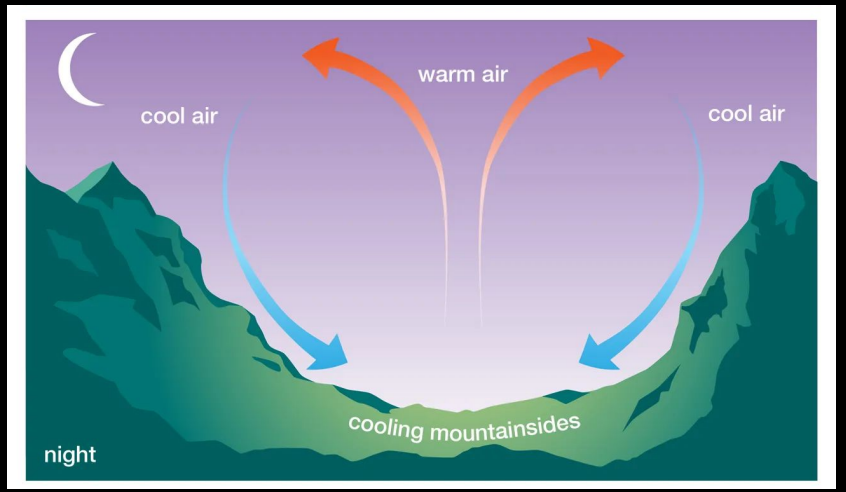


Land Breeze

How are mountain and valley breezes generated?

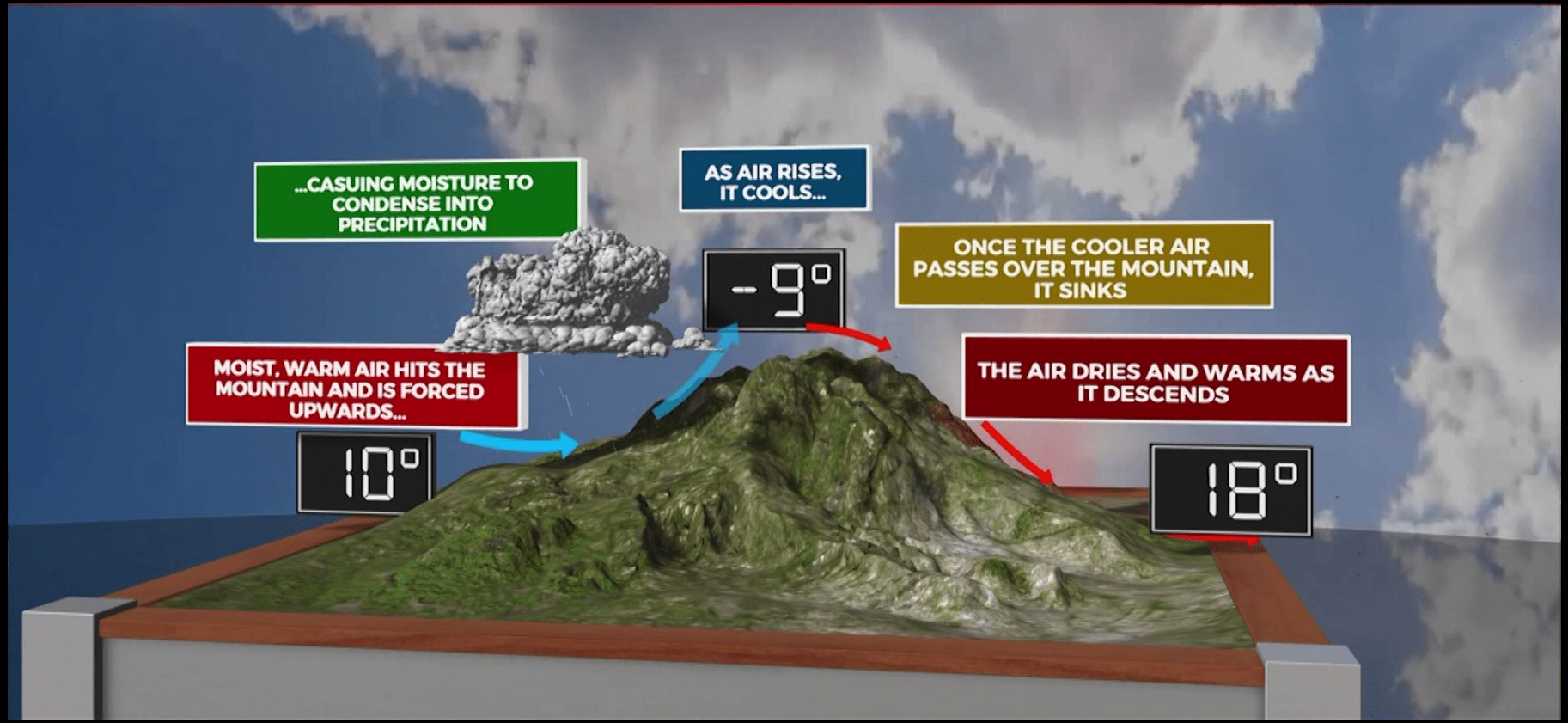


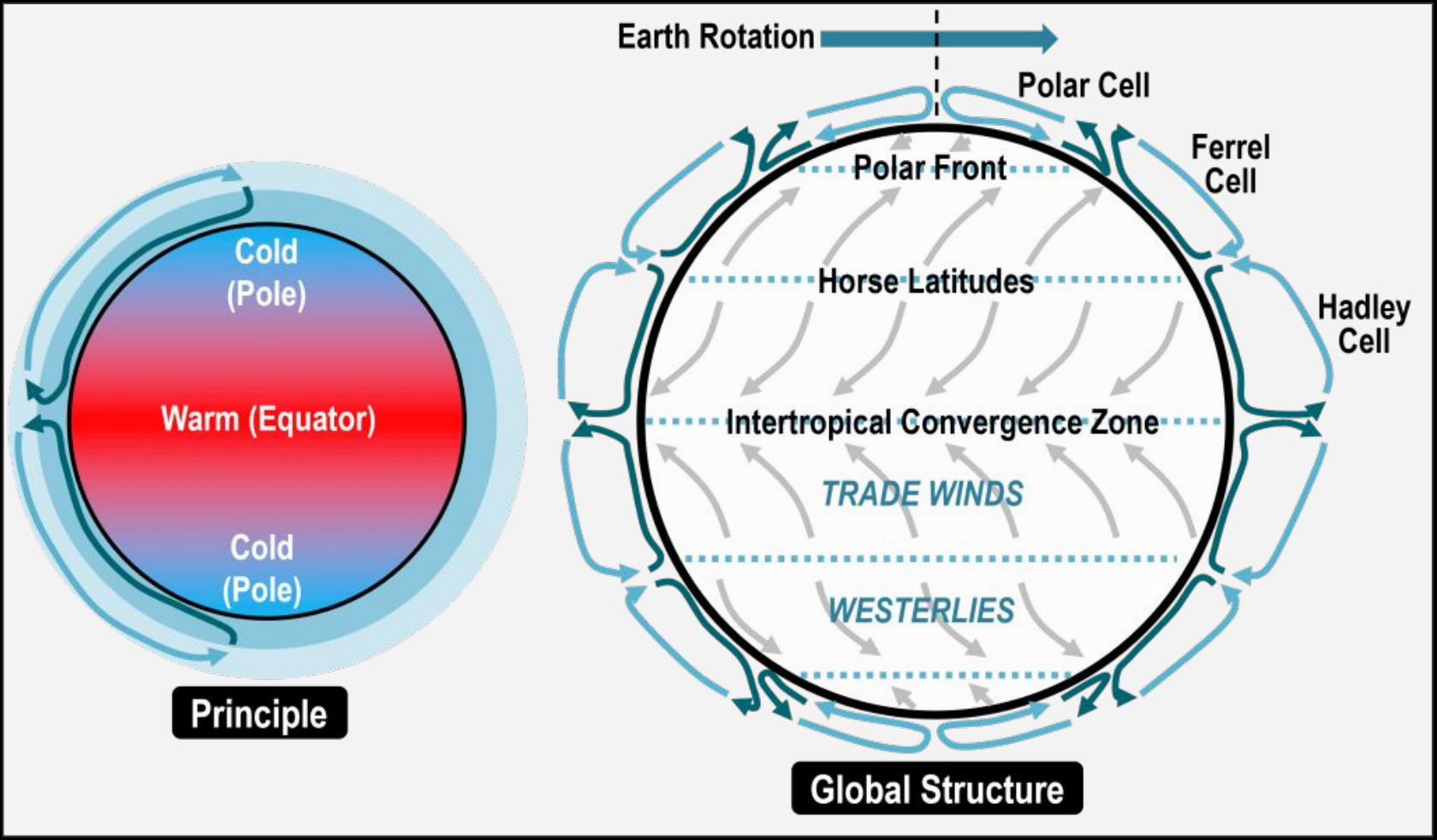
Valley Breeze



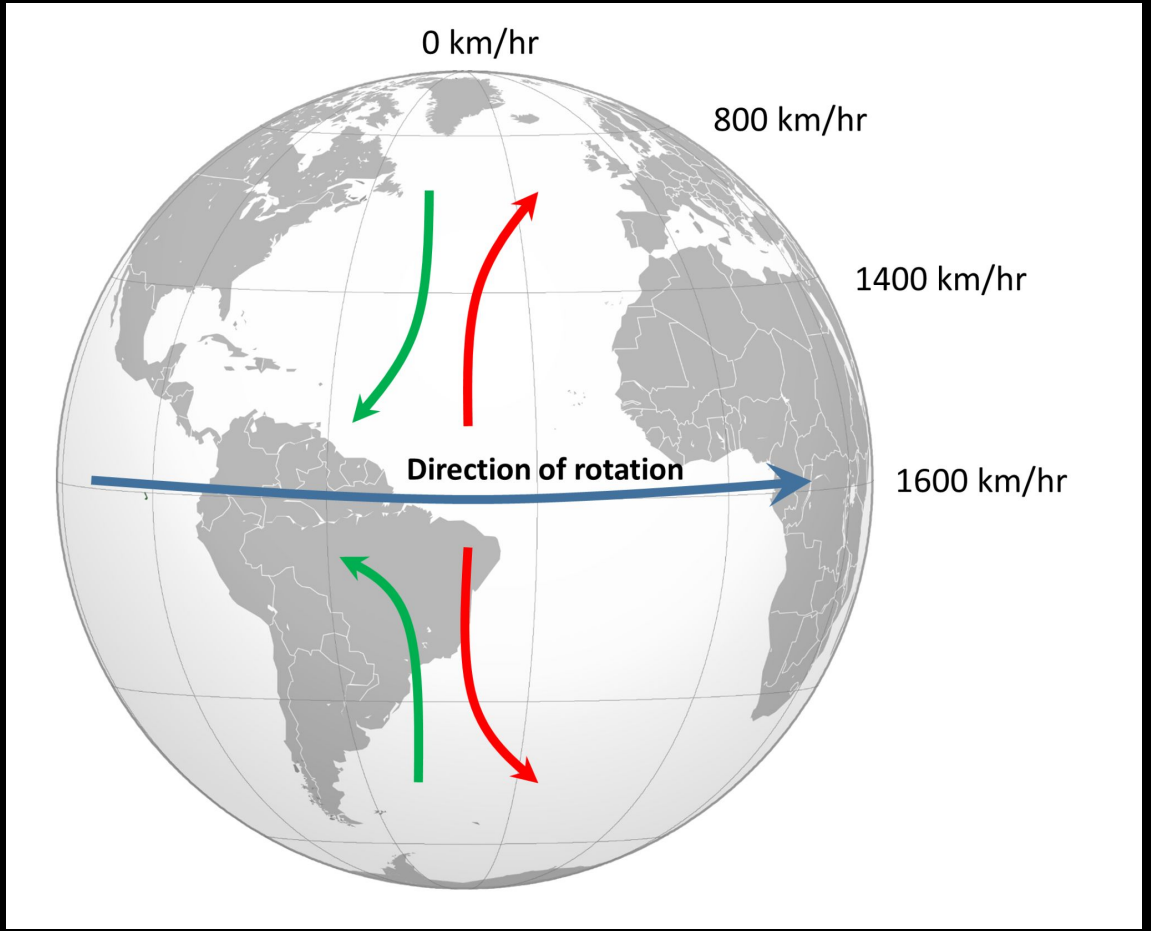
Mountain Breeze

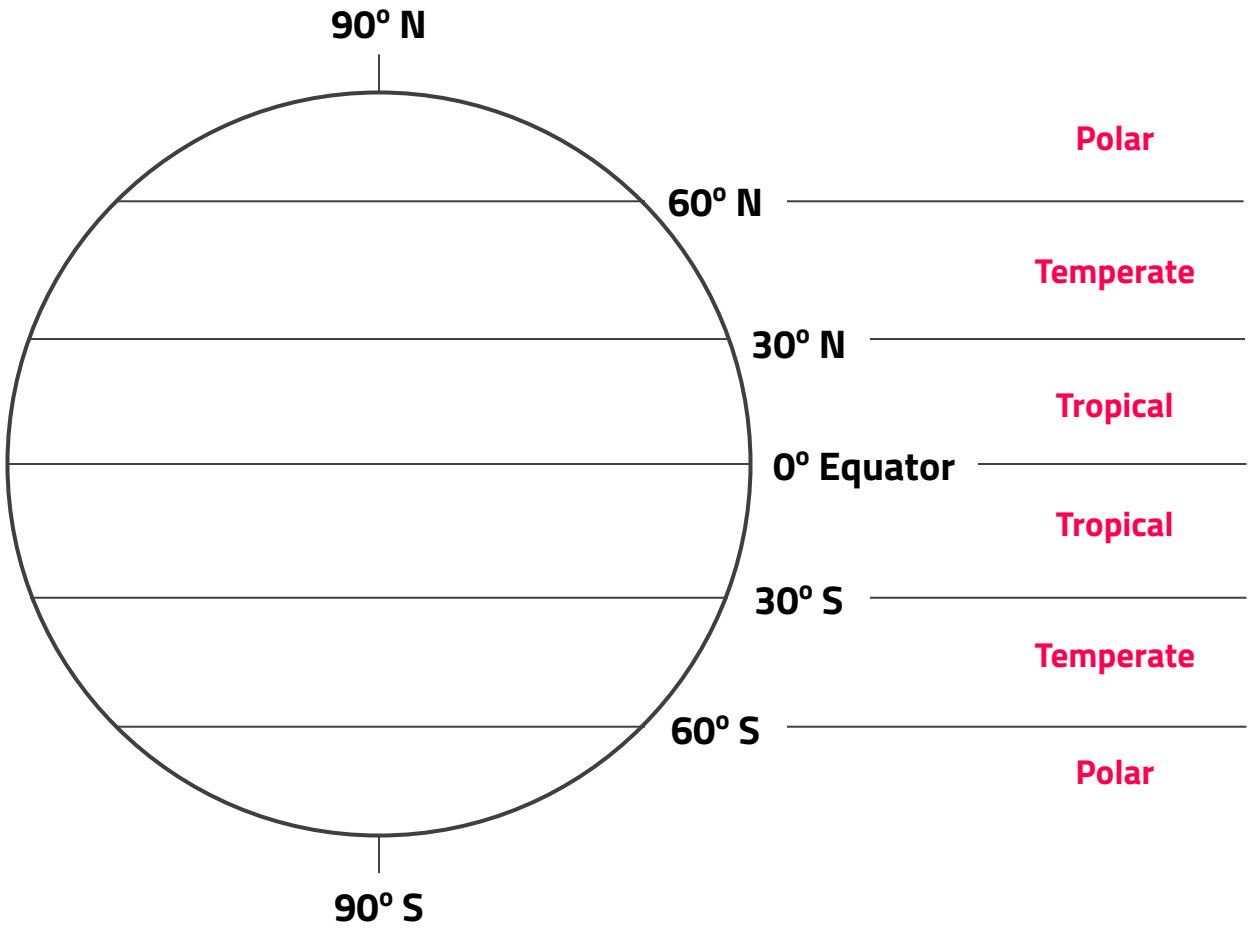
How are chinook winds generated?





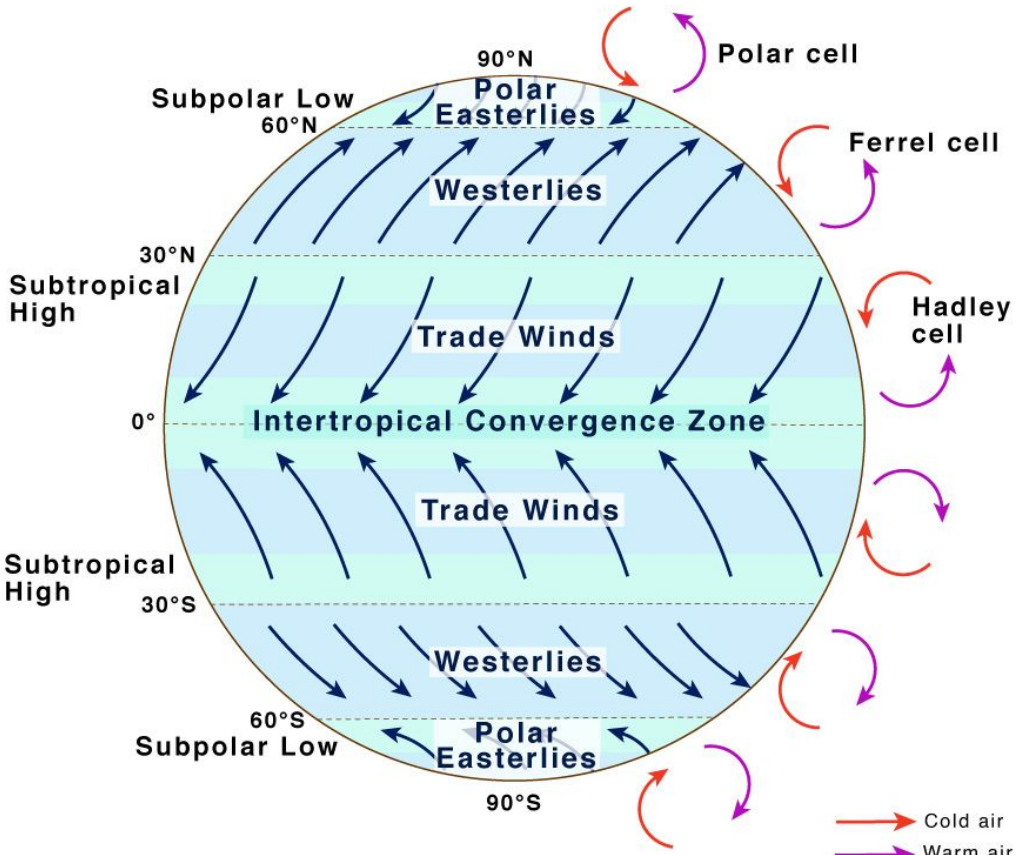
Coriolis Effect on wind system





Global Wind Patterns

ScienceFacts.net



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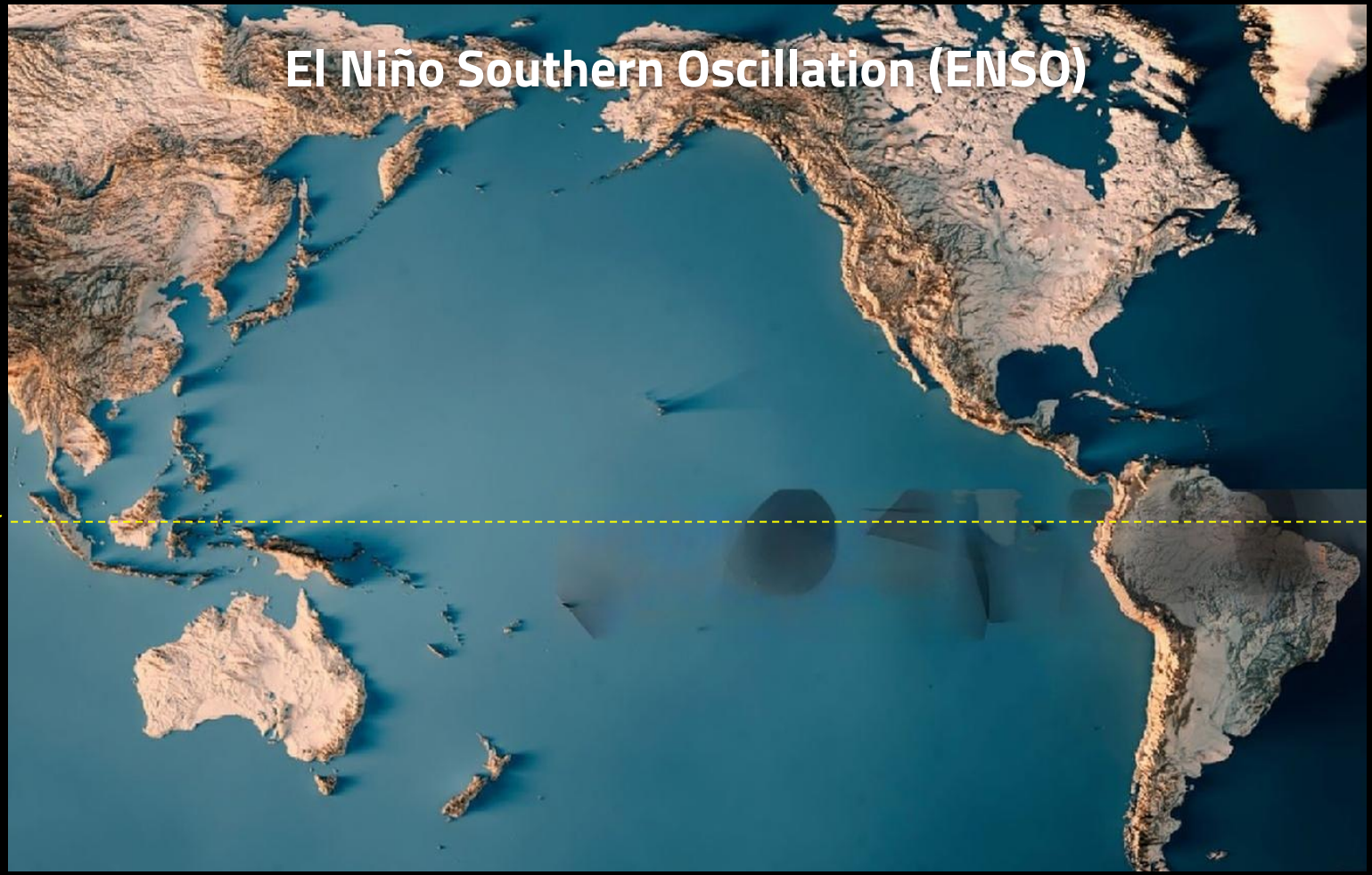
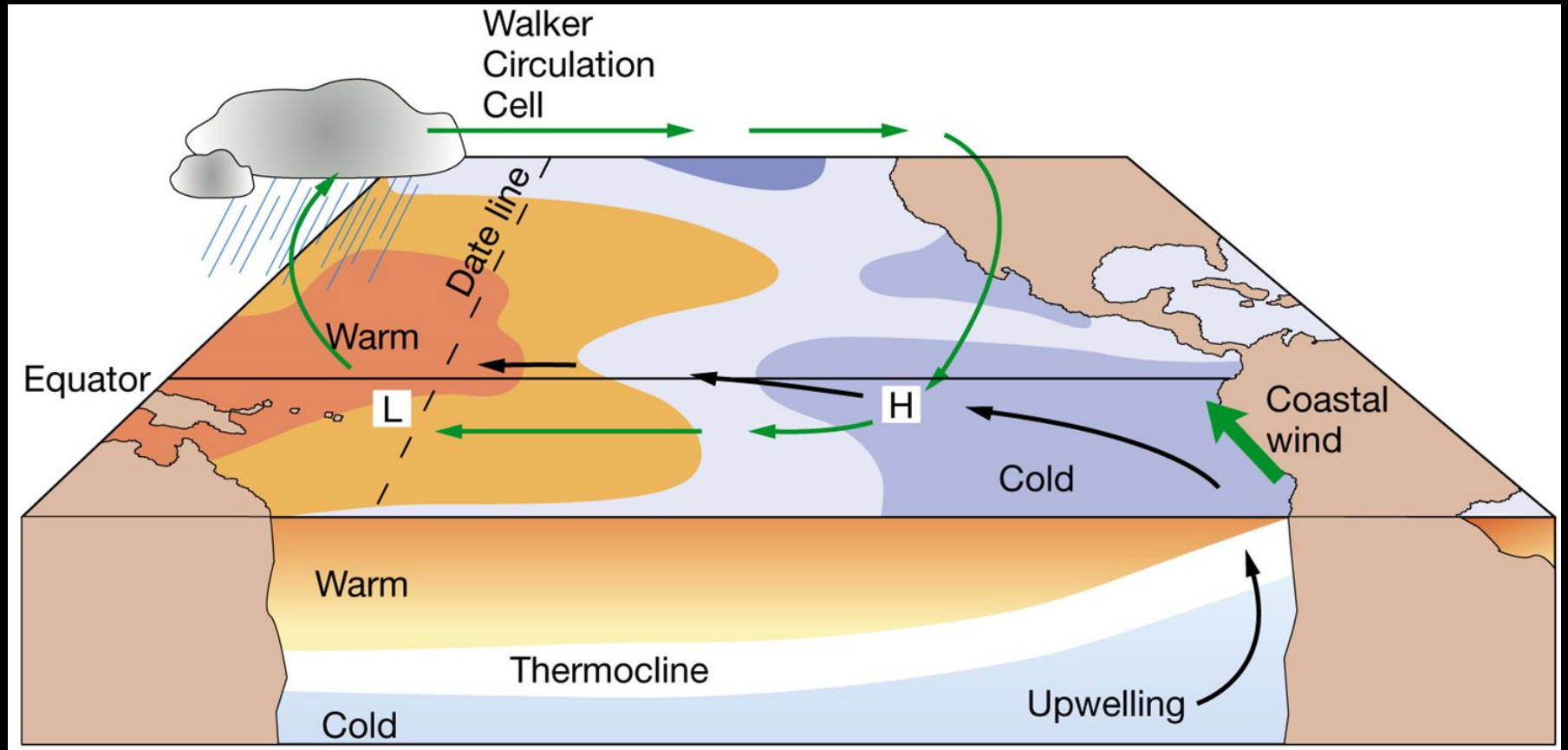
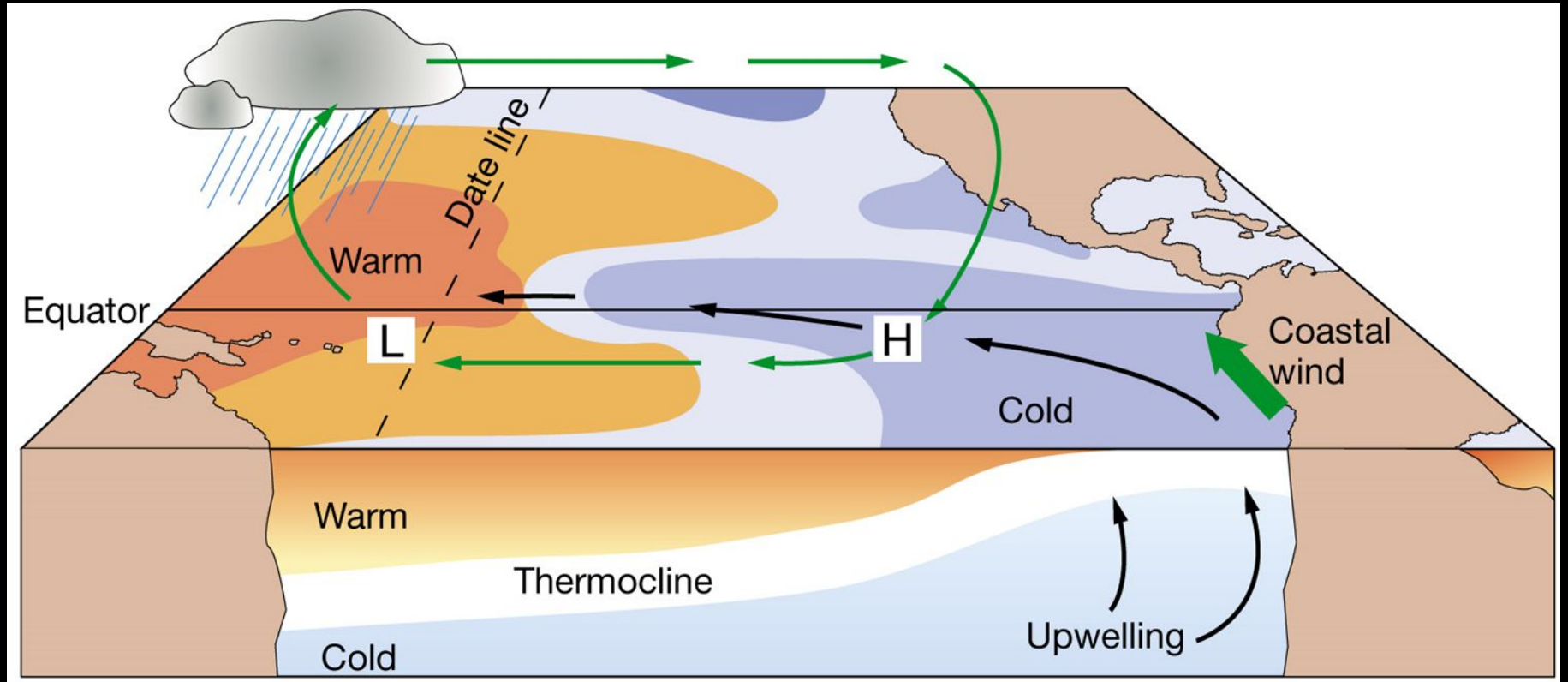
Air Temperature	Air Pressure	Precipitation	Weather
High 	Low 	High 	Wet 
Low 	High 	Low 	Dry 

El Niño Southern Oscillation (ENSO)

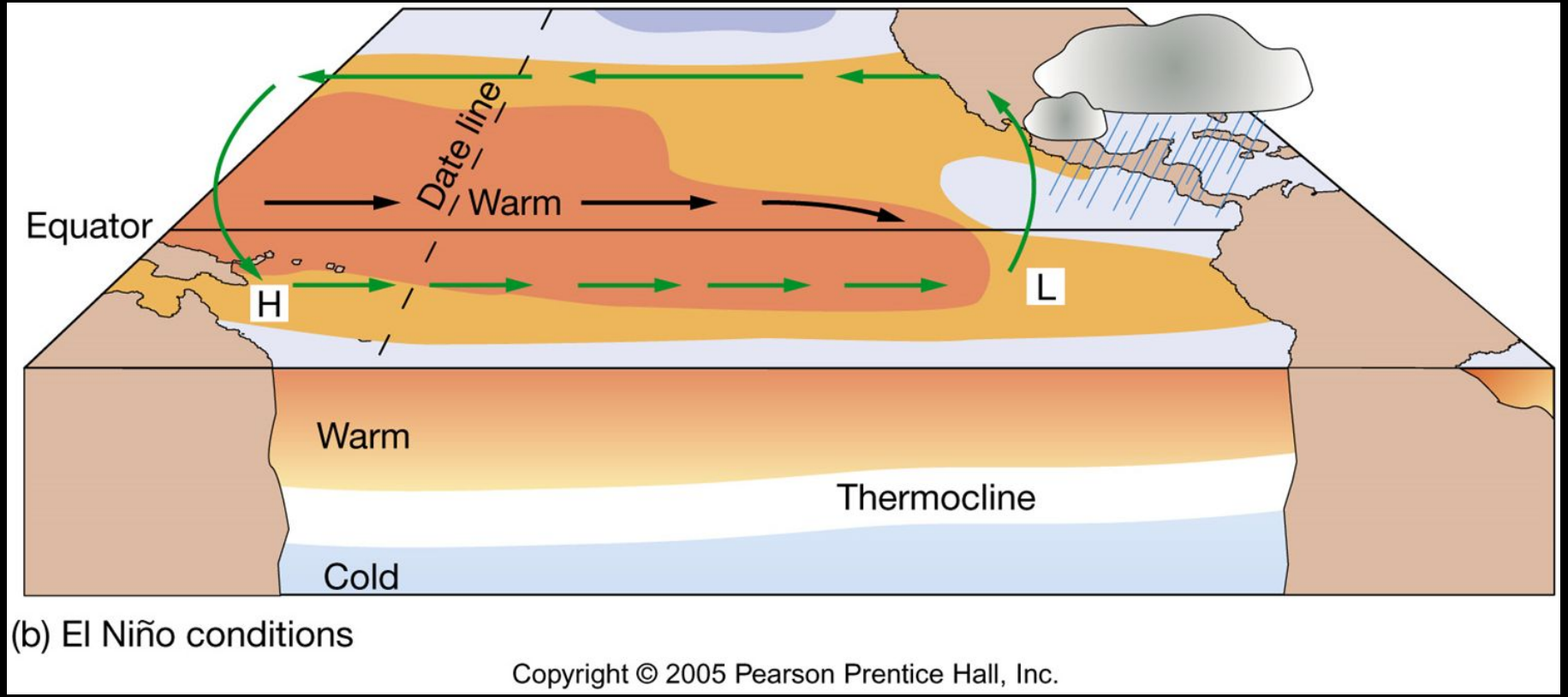




(a) Normal conditions



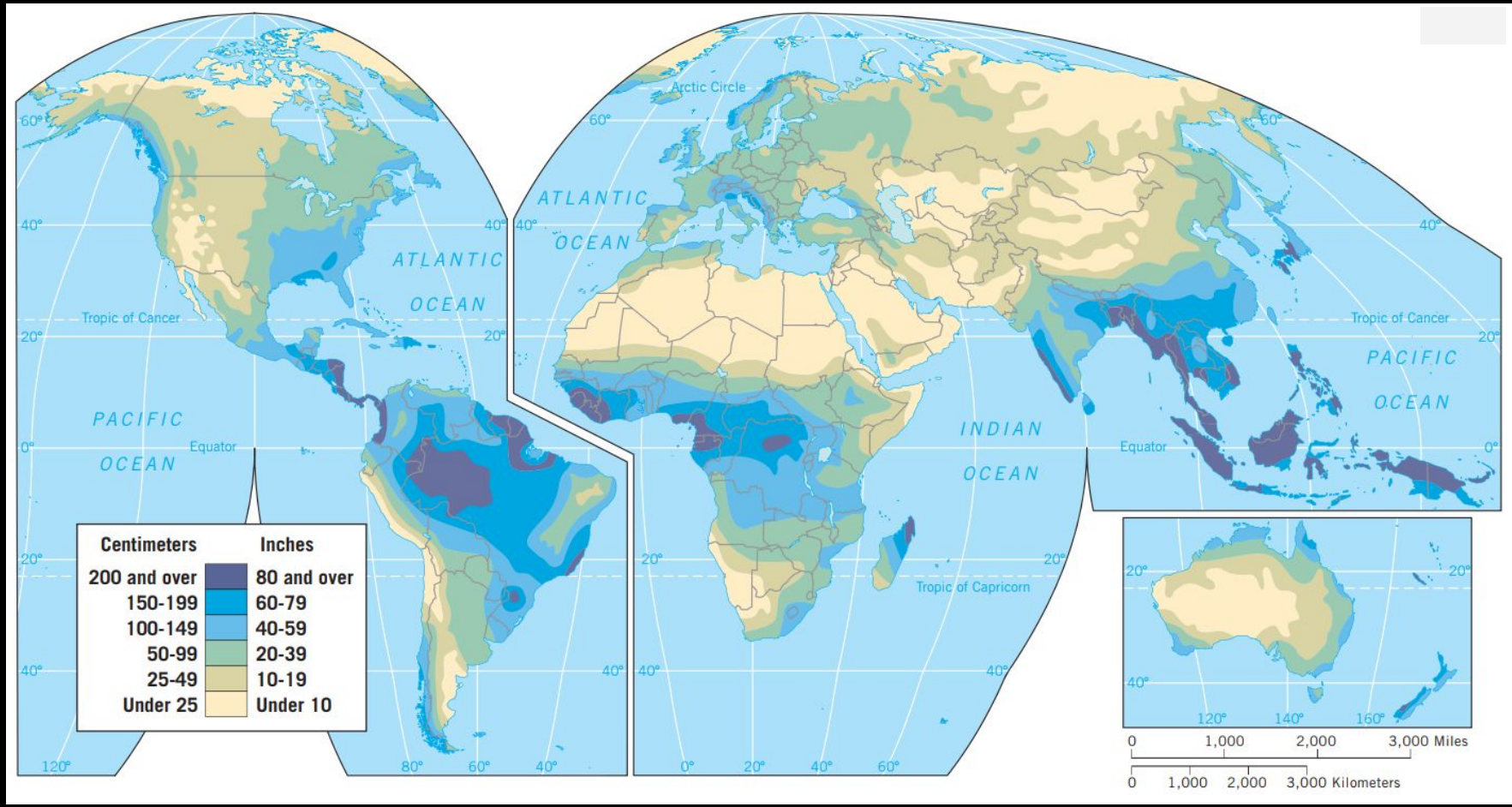
(c) La Niña conditions



(b) El Niño conditions

PAGASA ENSO Alert System Status

PAGASA: La Niña conditions are present in the tropical Pacific and are expected to persist through February-April 2025 season; A transition to ENSO-neutral likely during March-May 2025 season. *La Niña condition – a 1-month SSTA of -0.5°C or less is observed and an expectation that the 3-month SSTA (Oceanic Niño Index) of -0.5°C or less will be met (i.e DJF). This condition increases the likelihood of having above-normal rainfall conditions, which could lead to potential adverse impacts such as heavy rainfall, floods, flash floods, and rain-induced landslides over highly vulnerable areas. Updated: 22 January 2025



Global Precipitation Patterns