

Class 3b: Climate and Weather

Air pressure and winds

- Air is a fluid
- Warmer air is less dense
- Air moves from dense to less dense conditions
- Ex.: Land-sea breezes

Global air circulation

- Equator receives most insolation
- Hot air rises, heads towards poles
- Air becomes heavy and sinks at 30°N and S
- Plus the Coriolis effect

- Warmer air “holds” more water
- Low pressure=warm air=precipitation
- High pressure=cold air=dry air

Ocean currents

- Follow same circular pattern (driven by wind)
- Warm currents flow away from equator, pile up on eastern shores
 - Gulf Stream, Brazil
- Cold currents flow towards equator, cause upwelling
 - Humboldt/Peru, California

Climate classification

- Temperature and precipitation
- Köppen classification system
- Nine types, plus highlands

Weather: hurricanes

- Start at low pressure centers
- Warm air rises
- Water evaporates with energy from sun

- With condensation, energy is released