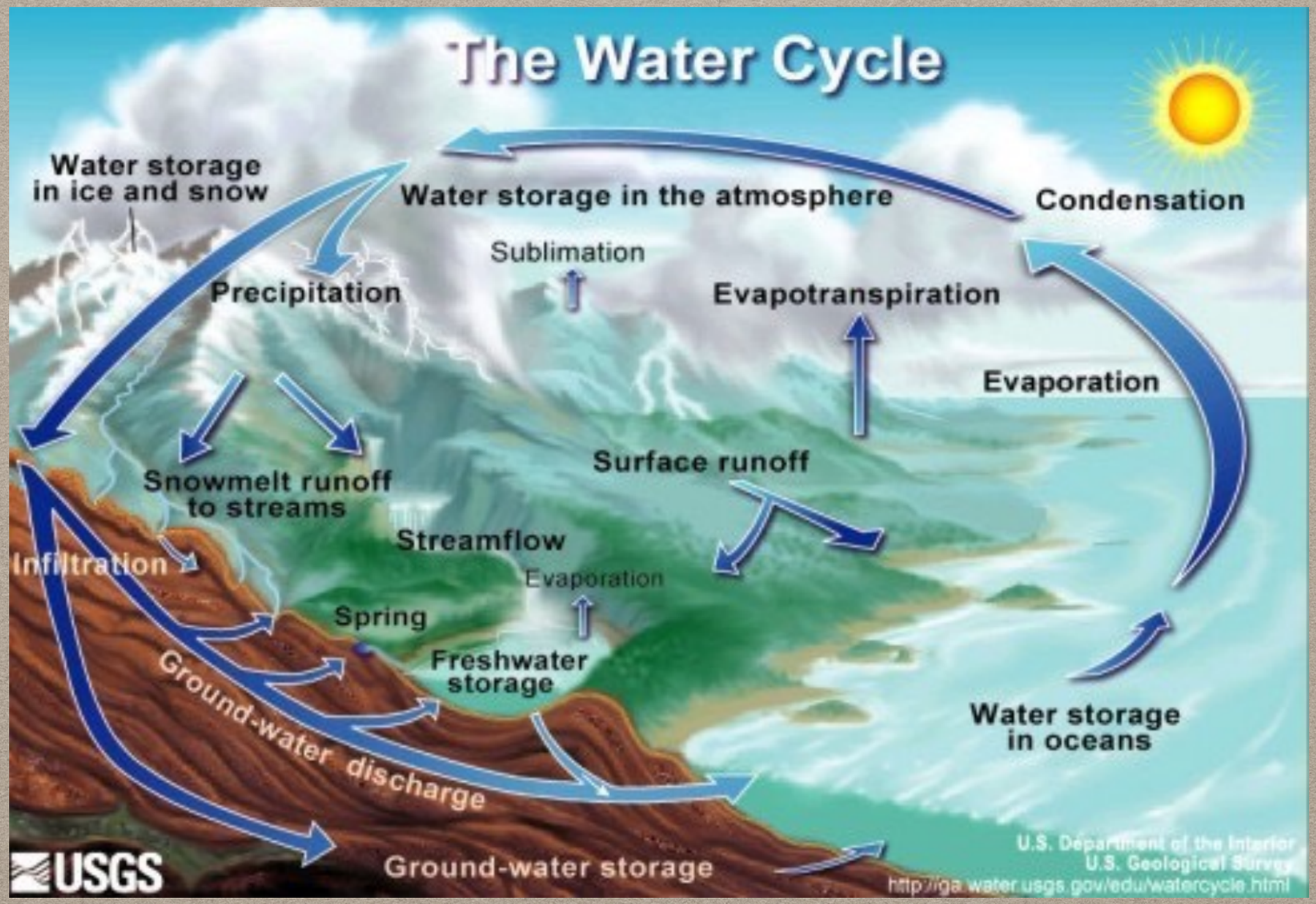
CLIMATE CONNECTIONS:

THREE TYPES OF PRECIPITATION

CGC1D1-MR. A. WITTMANN-UNIT 2: NATURAL SYSTEMS



CLIMATE & WEATHER

Climate - long term pattern of weather that influences…

- Where we live
- What crops we grow
- What clothes we wear
- Modes of transportation
- Method of building

Weather - day to day characteristics of atmospheric conditions

- Temperature, precipitation, humidity, wind speed & direction, cloud cover, air pressure

WHAT IS PRECIPITATION?

- **When water vapour is cooled and changes from invisible gas to liquid water, aka *adiabatic cooling***
- **Condensed water vapour forms clouds.**
- **When air rises, it cools.**
- **As air cools, water vapour condenses more than it evaporates.**
- **Air rises for 3 reasons, causing 3 types of precipitation…**

1. **Relief Precipitation**
2. **Convectional Precipitation**
3. **Cyclonic Precipitation**

WHAT IS CONDENSATION?

- **The conversion of a substance from a state of gas or vapour to a state of liquid**

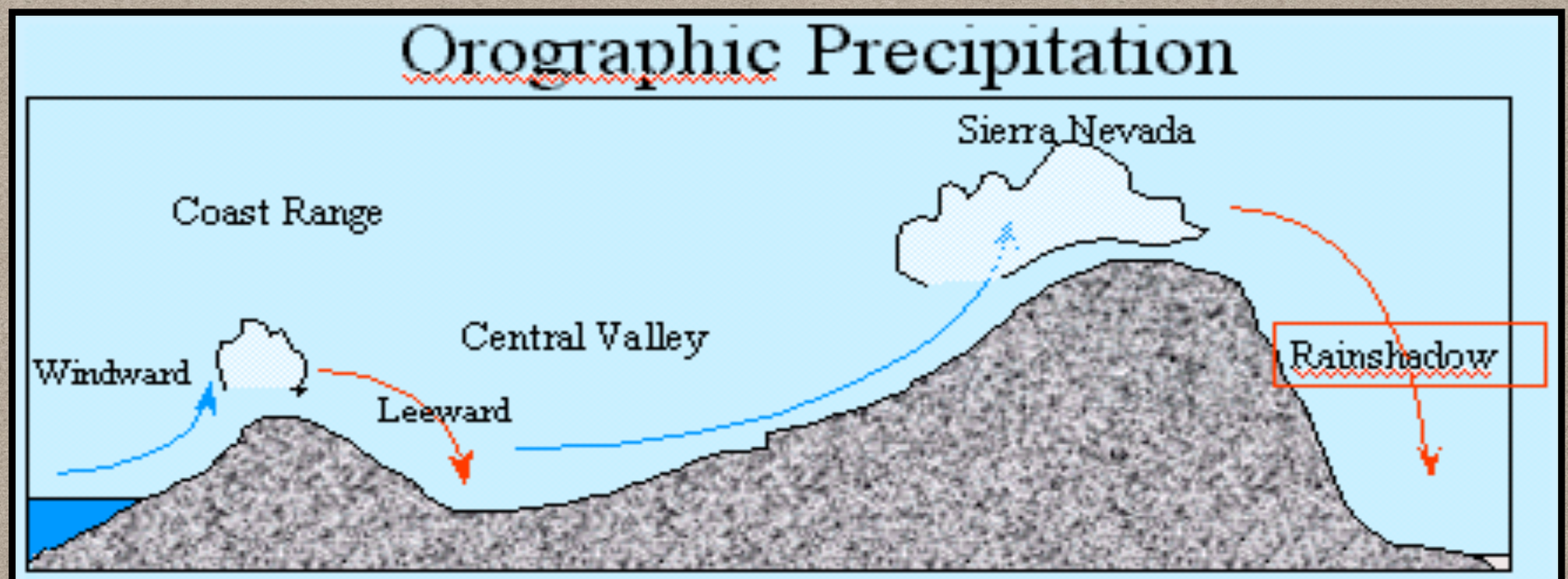
WHAT IS ADIABATIC COOLING ?

- **The gain or loss of heat because of changes in pressure & volume of a gas**

ADIABATIC COOLING

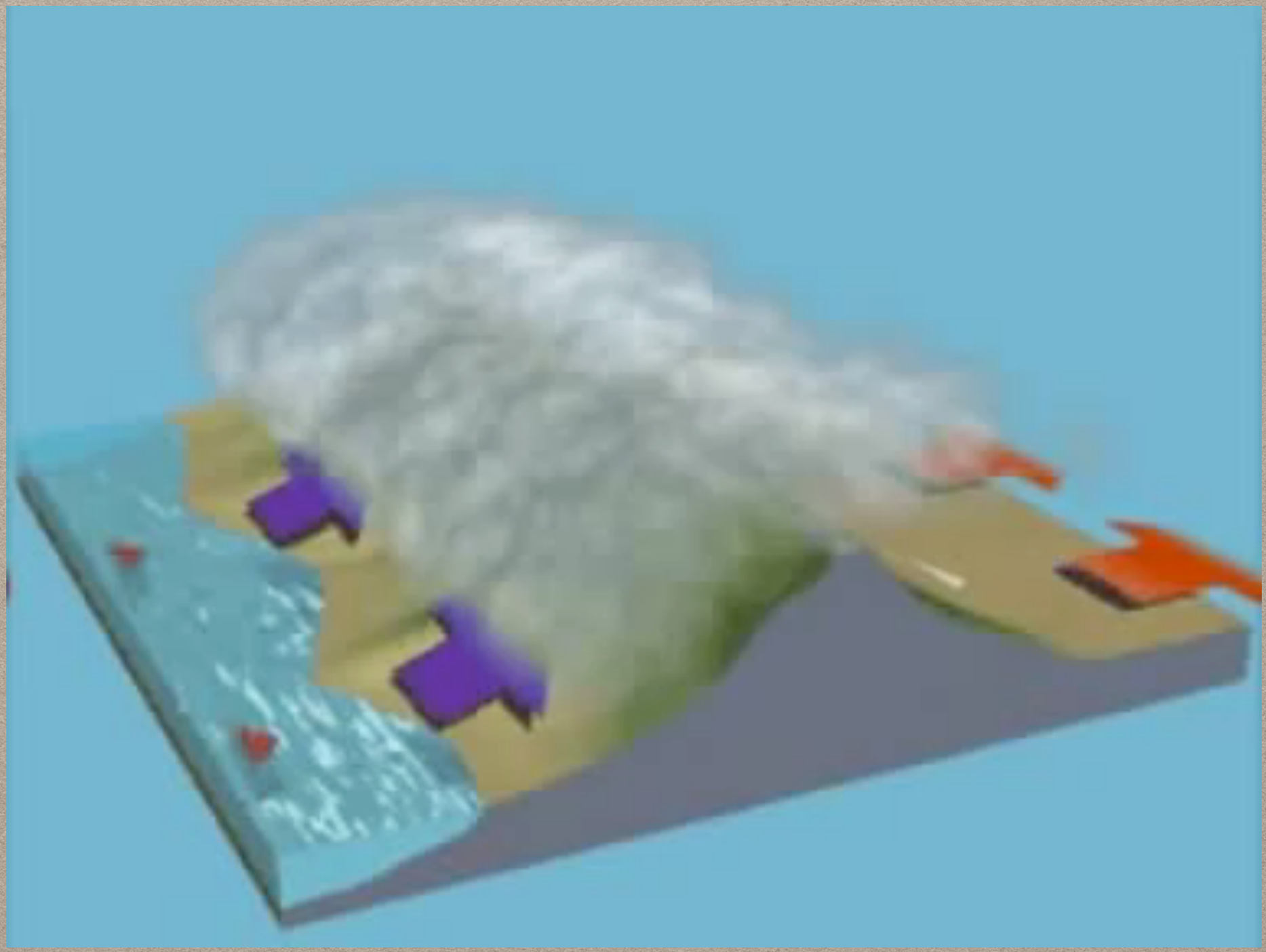
1) RELIEF / OROGRAPHIC PRECIPITATION

- **Air rises to cross an area of high elevation.**



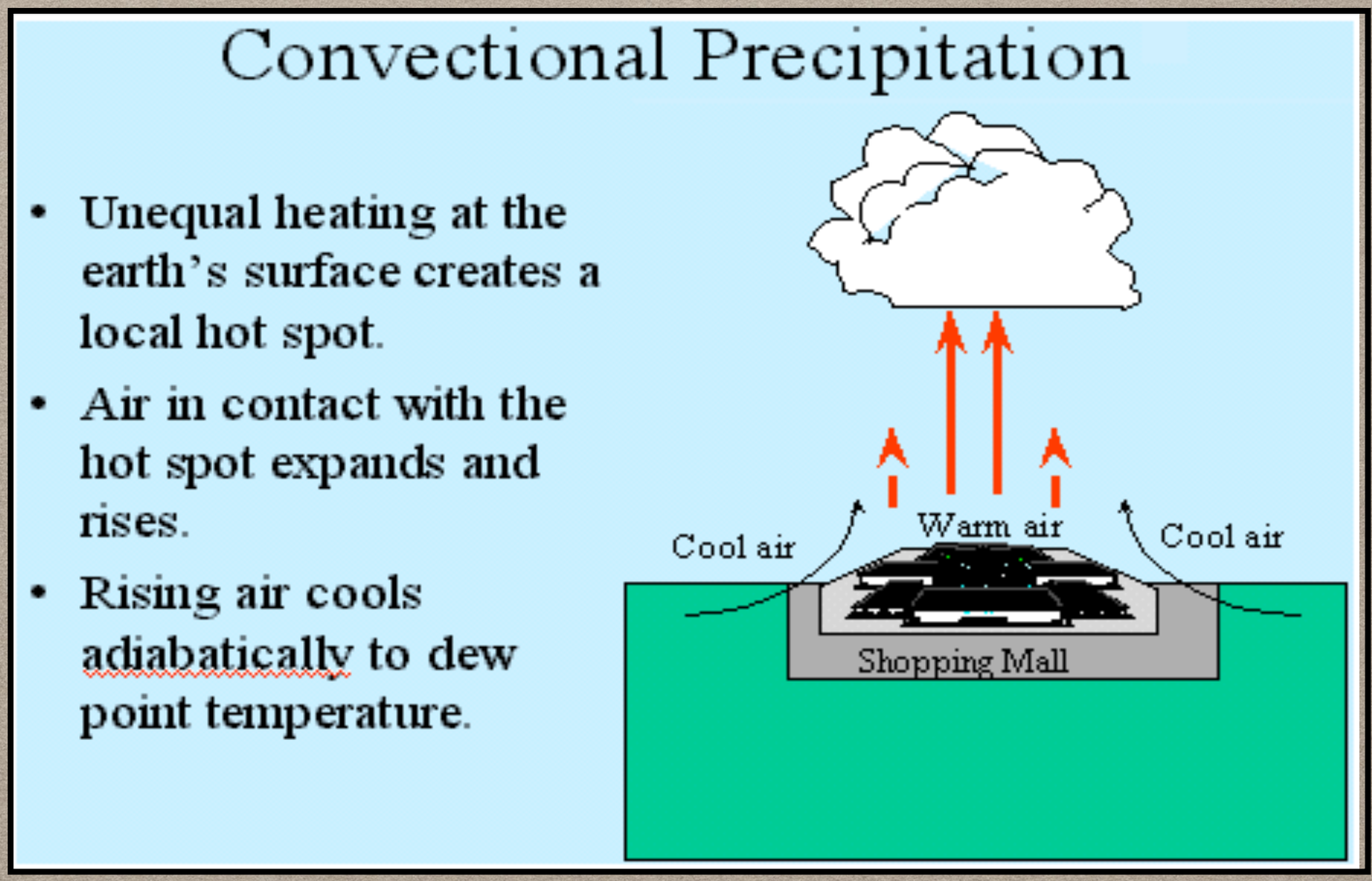
- Air rises to cross mountains
- Rising air expands and cools adiabatically.
- At dew point temperature, it condenses and forms clouds.
- Continued condensation may produce rain or snow.

1) RELIEF / OROGRAPHIC PRECIPITATION



2) CONVECTIONAL PRECIPITATION

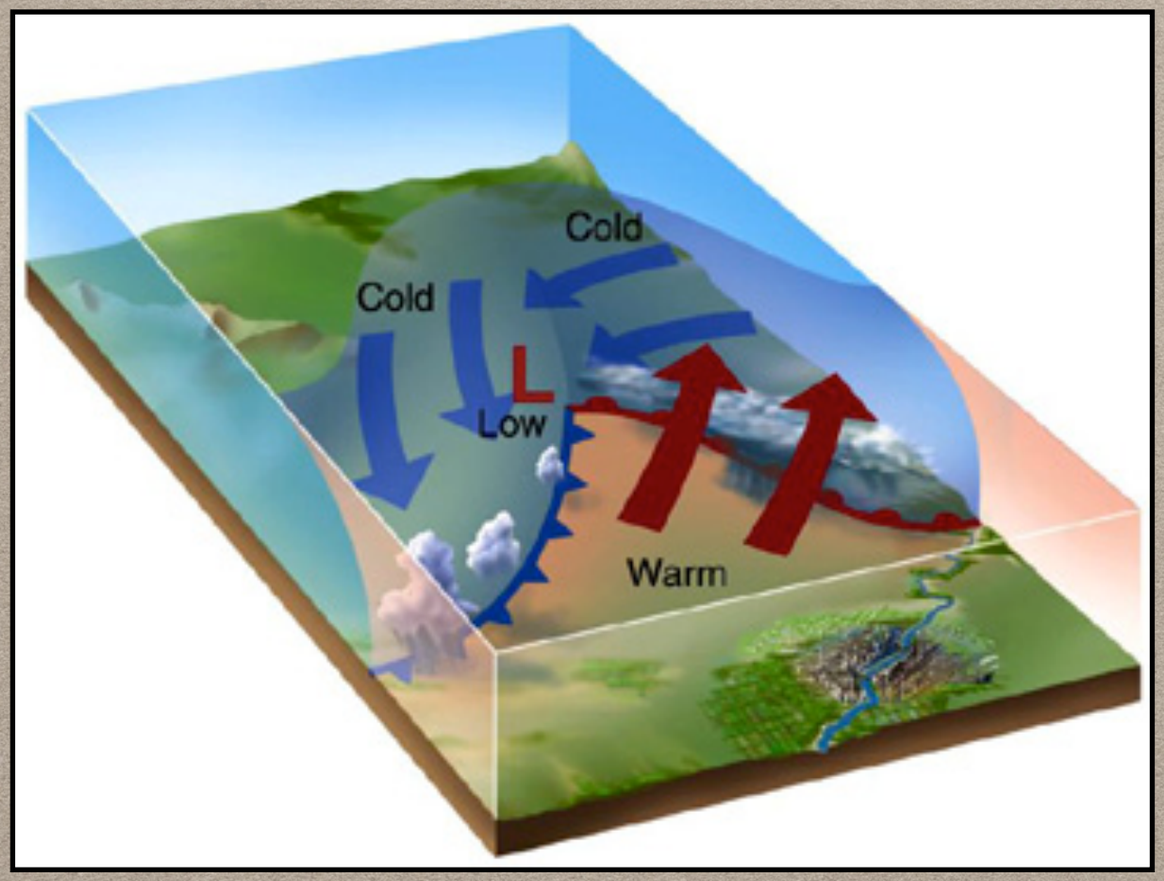
- **Air rises because it had absorbed heat from the earth's surface.**

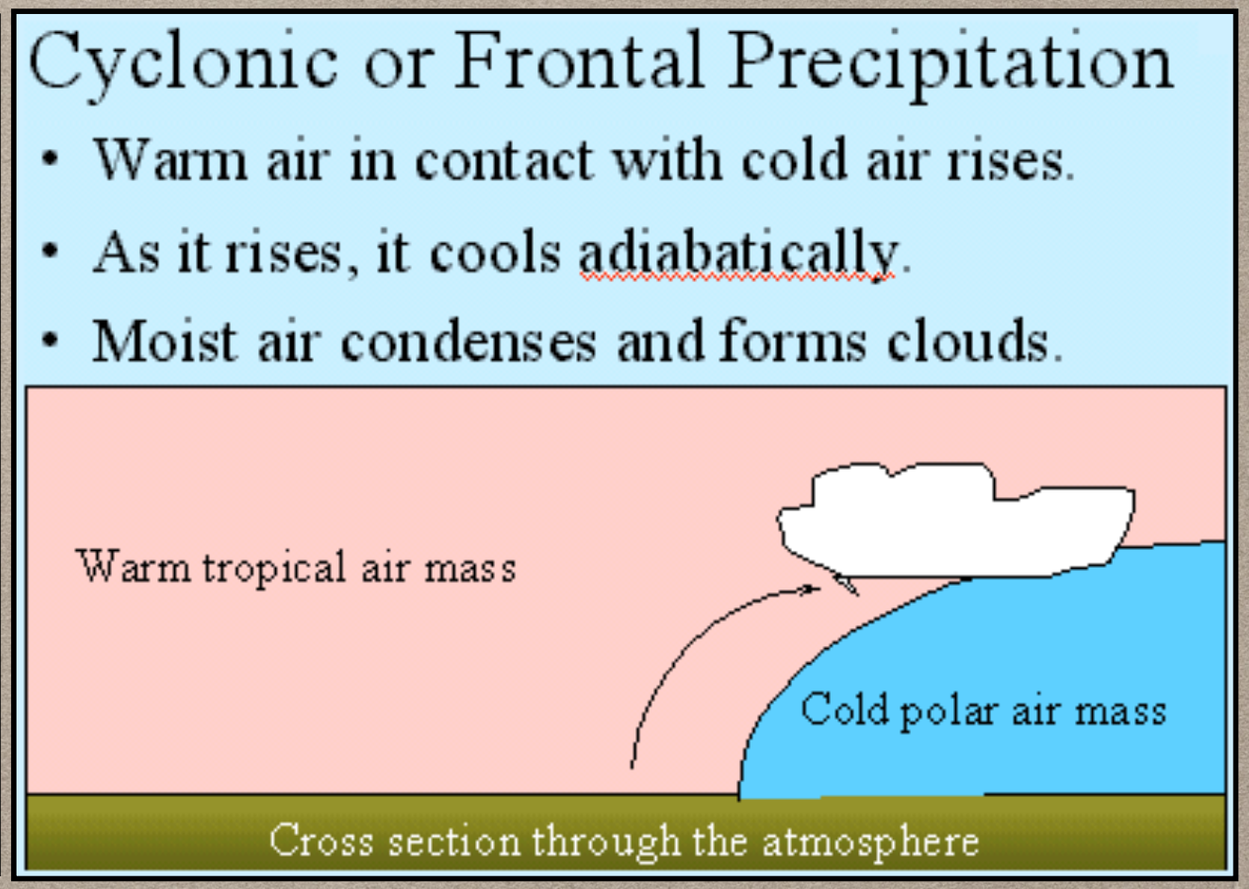


2) CONVECTIONAL PRECIPITATION

3) CYCLONIC / FRONTAL PRECIPITATION

- **Air rises because there is a cooler, denser air mass flowing beneath it that forces it up.**





3) CYCLONIC / FRONTAL PRECIPITATION

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