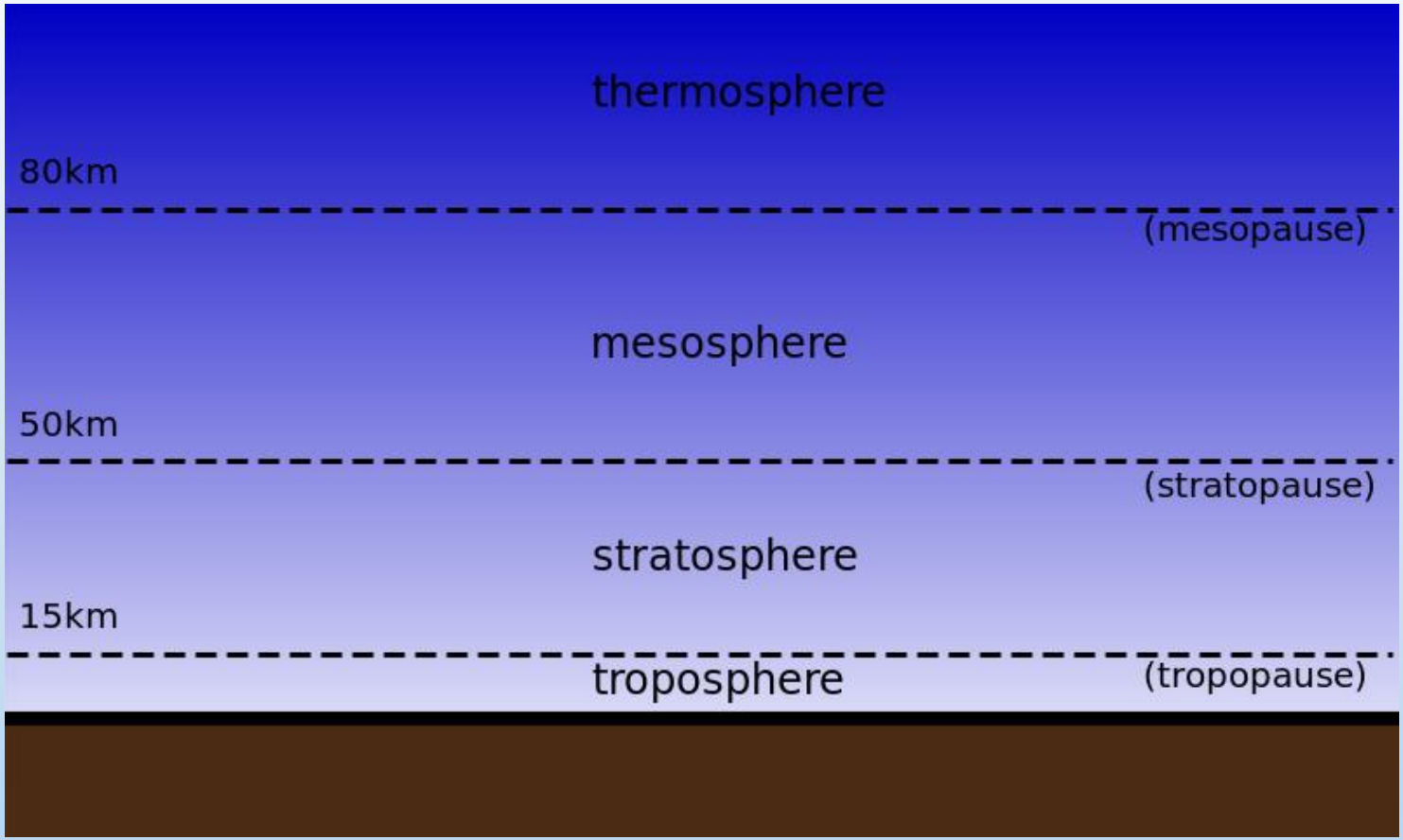


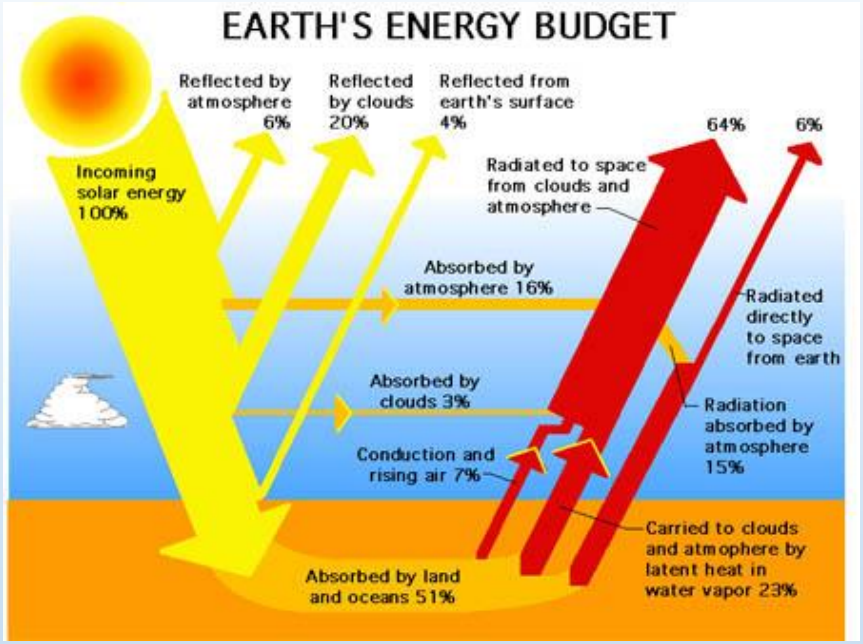
The Atmosphere

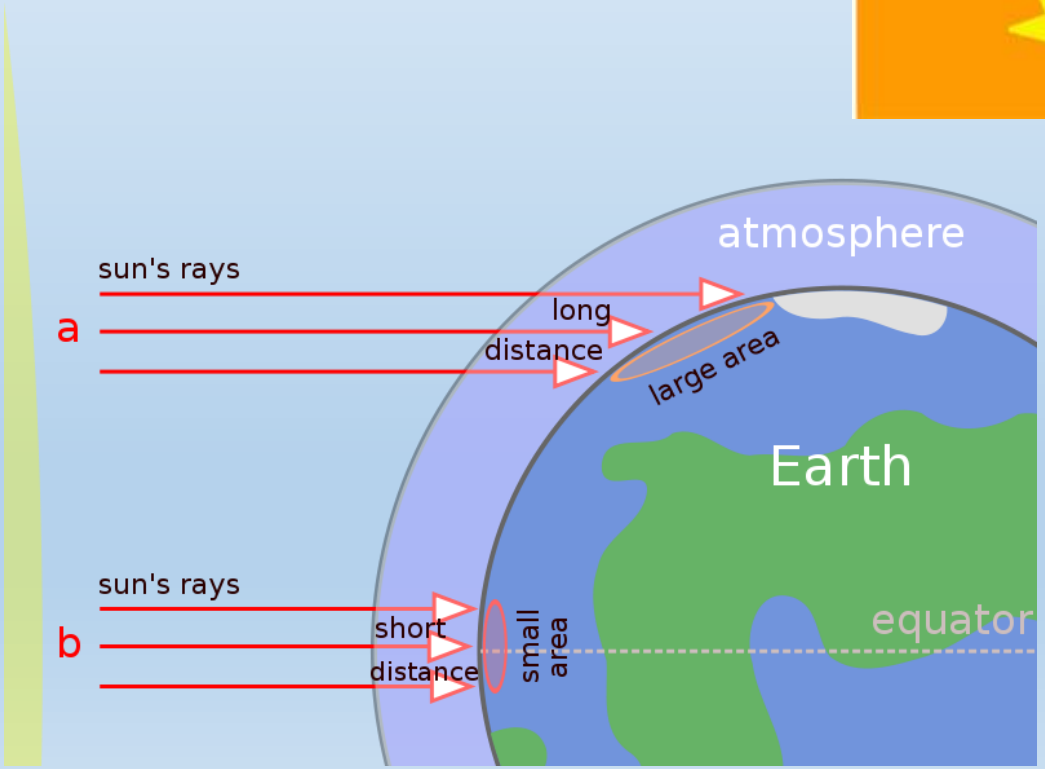
Question 1:

How does energy move in the atmosphere?

Radiation

- Emitted by all substances above absolute zero
- Color and type of surface affects absorption

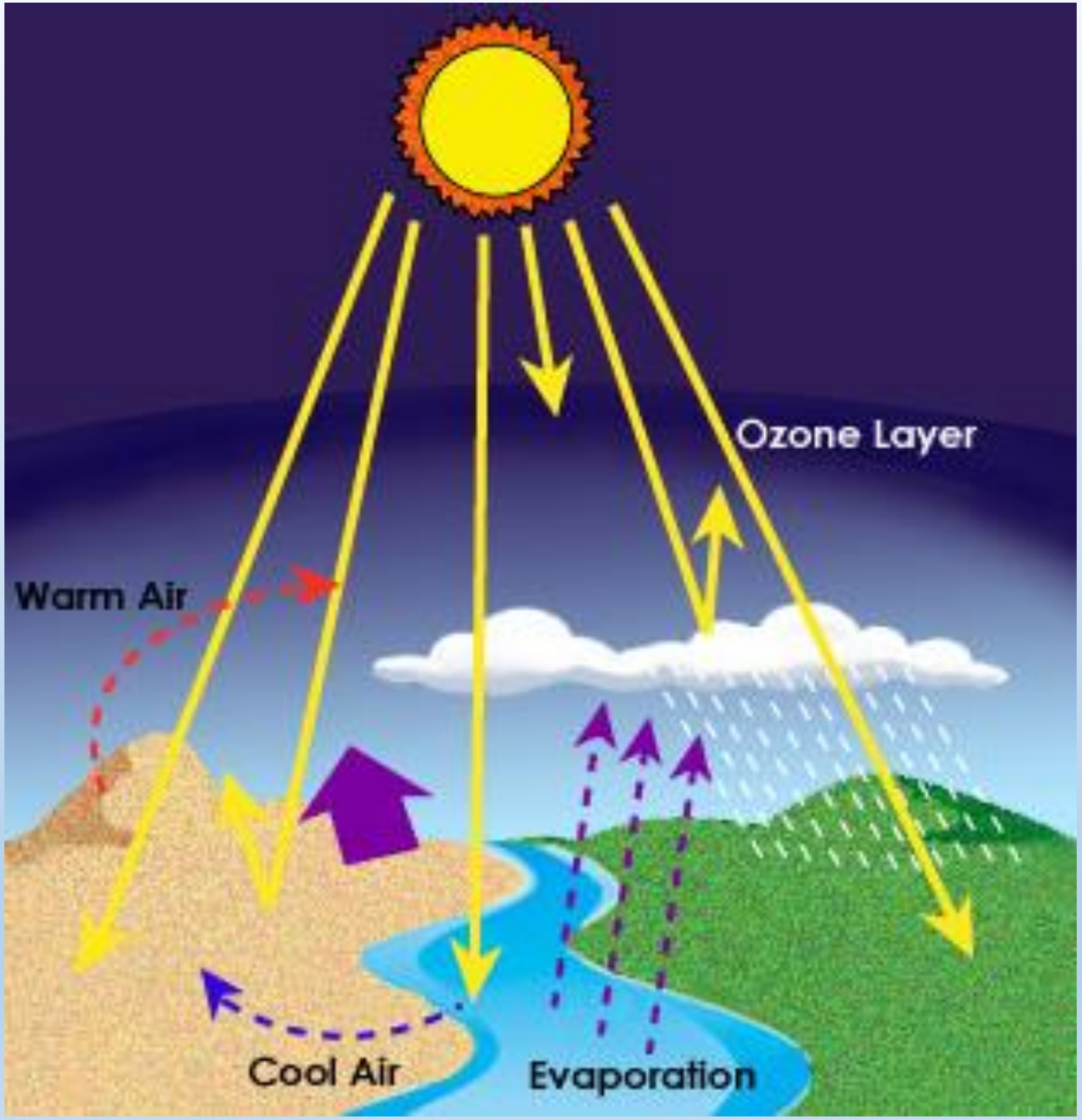




ConDuction vs. ConVection

- Conduction
  - Occurs between Earth's surface and the troposphere
  - Molecules must be in **D**irect contact with each other
- Convection
  - Air expands, becomes less dense, rises, cools and sinks (What else uses the process of convection?)
  - **V**ertical movements of air lead to weather changes
  - This is the primary mode of heating in the atmosphere

Where are conduction, convection, and radiation occurring in this image?



Question 2:

From what is our atmosphere composed?

Components of the Atmosphere

1. Gases
   - Nitrogen 78%
   - Oxygen 21%
   - All others 1%
     - Argon
     - Hydrogen
     - **Carbon dioxide**
     - **Water vapor**

2. Solids
   - Dust
   - Salt

3. Ozone (O_3)
   - Exists in small quantities in a layer far above the Earth's surface
   - Absorbs the suns rays

Question 3:

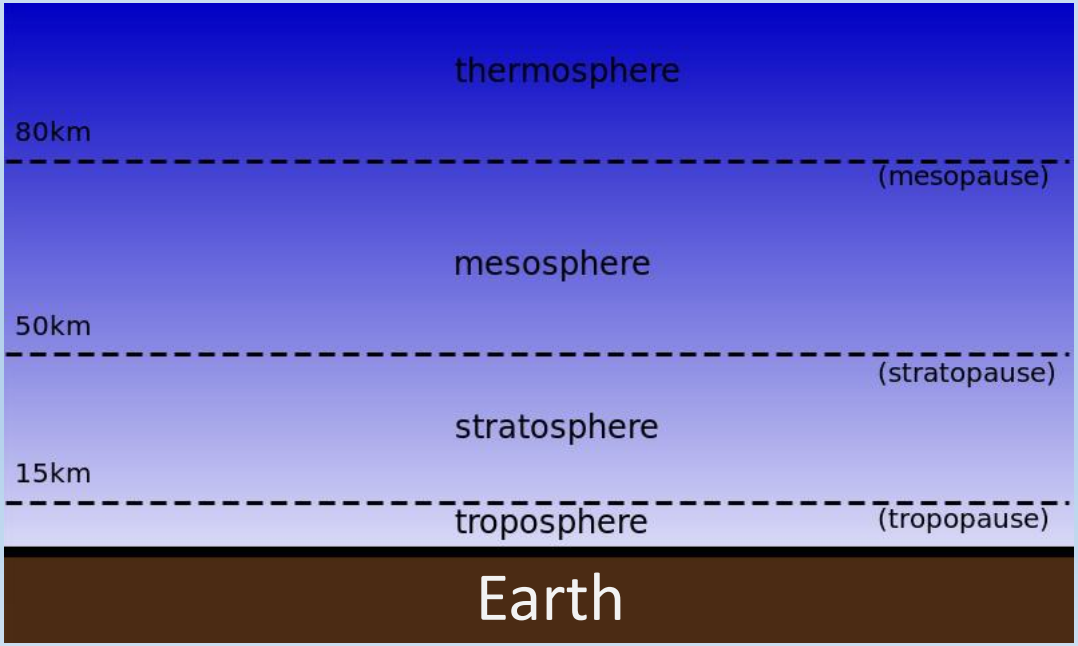
How is our atmosphere organized?

Structure of the Atmosphere

The atmosphere is held by the Earth's GRAVITY

The atmosphere has five layers: *from lowest to highest*

1. **Troposphere** (0-10 km from Earth's Surface)
    - Where weather takes place
    - Where air pollution collects
    - Temperature decreases from bottom to top



Structure of the Atmosphere

2. Stratosphere (10-50 km from the Earth's surface)
    - Composed mostly of ozone
    - Temperature increases
3. Mesosphere (50-80 km from the Earth's surface)
    - Temperature decreases
4. Thermosphere (80-120 km from the Earth's surface)
    - Temperature increases to more than 1000 ^{o}C
5. Exosphere (above 120 km)
    - No clear boundary with space

Air Pressure

Air pressure is the weight of air pushing down from above.

As you go up, pressure DECREASES.

Air pressure makes air near the Earth's surface DENSE.