

HEATING THE ATMOSPHERE

15-3

542-545

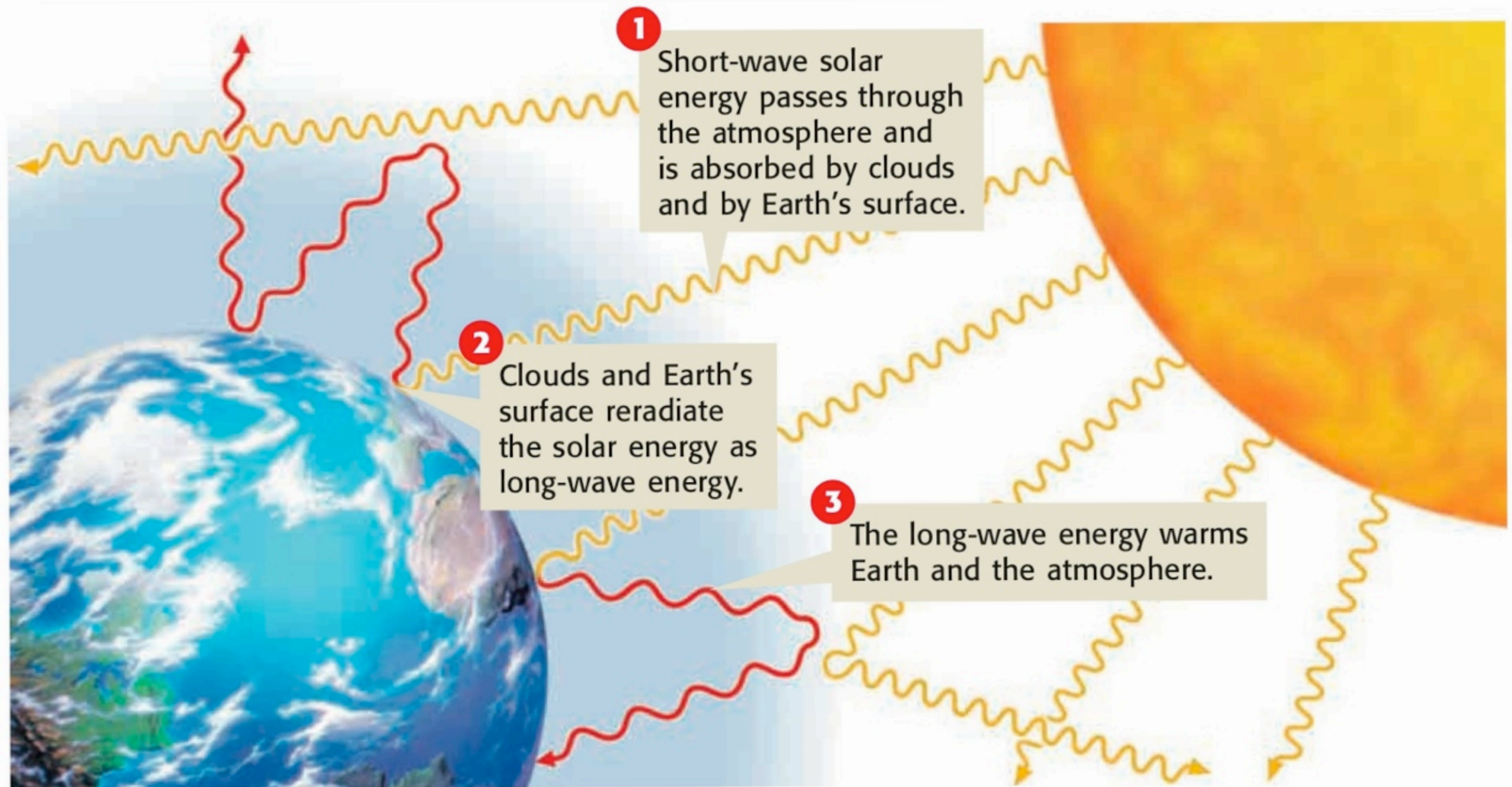
ENERGY TRANSFER

- Energy
 - Main source - Sun
 - Light heats land - then land heats atmosphere
 - 3 types of energy transfer
 - radiation
 - convection
 - Conduction

ENERGY TRANSFER

- Radiation
 - transfer by electromagnetic waves
 - no medium needed
 - Visible Light - most common
 - Infrared & Ultraviolet others

ENERGY TRANSFER

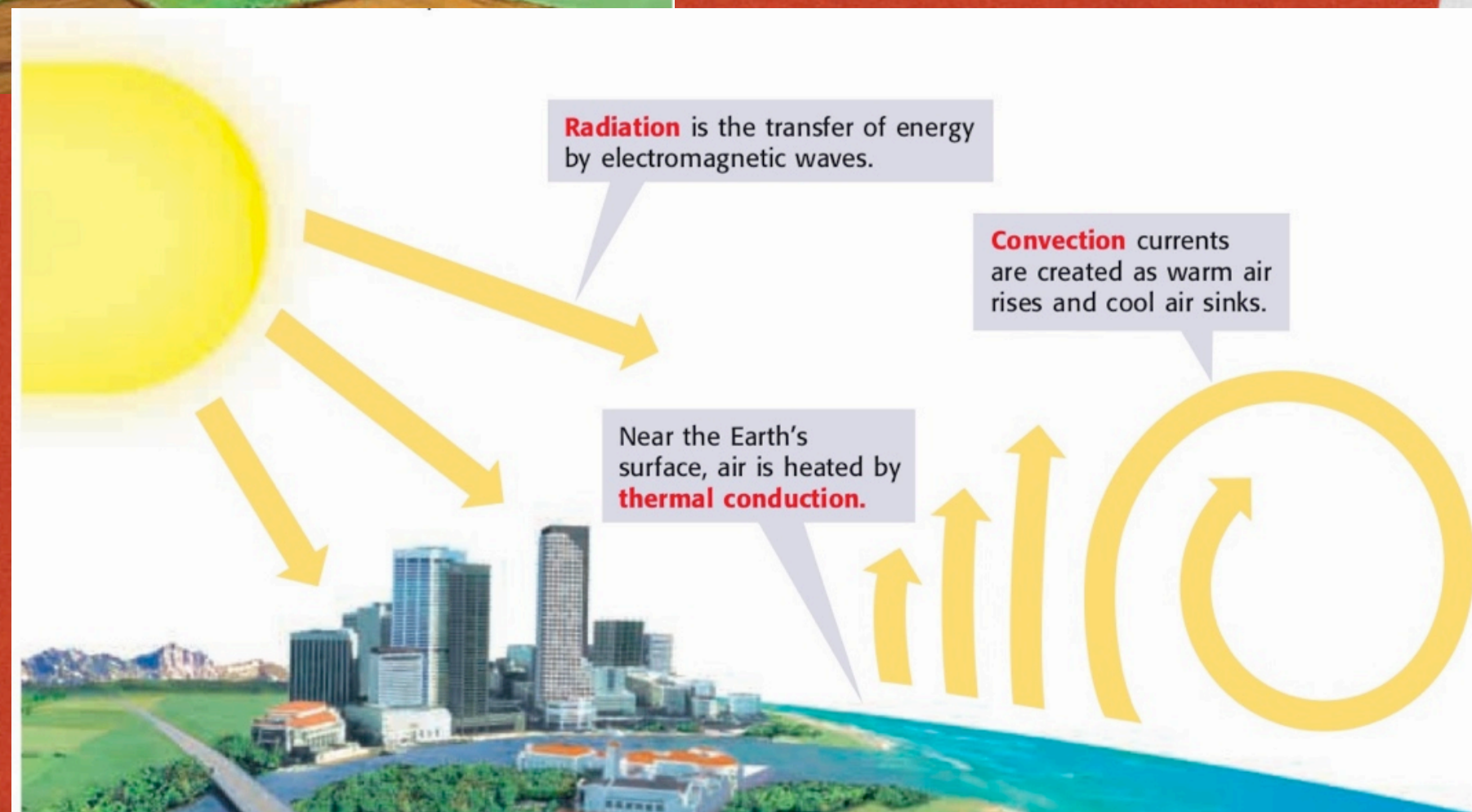
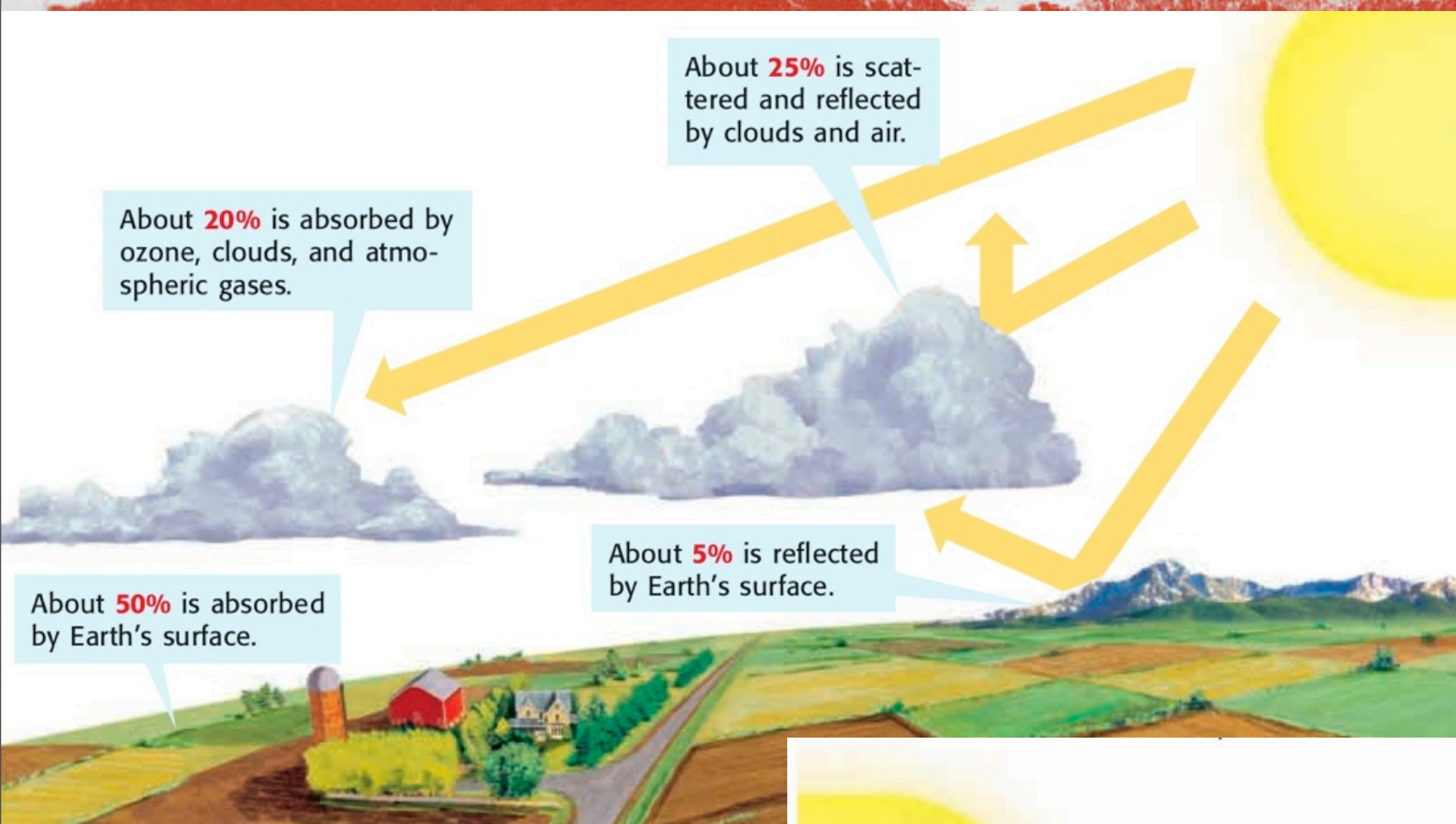


ENERGY TRANSFER

- Conduction
 - Transfer through direct contact with material
 - Always transfer from warm to cold
 - air touches Earth's surface
 - you touch a hot pan

ENERGY TRANSFER

- Convection
 - Transfer through fluid movement
 - Hot rise, cool sink
 - Most energy transferred this way in atmosphere



ANGLE OF LIGHT & EARTH

- Sun Light

- Earth tilted 23.5° - causes angles of light to change
 - Latitude effects degree of angle change

- Seasons

- caused by latitude and path around the sun
 - changing angles of light on Earth

ANGLE OF LIGHT & EARTH



60°



90°



30°



ABSORPTION & REFLECTION

- Solar Energy Breakdown
 - 30% - Reflected back into space
 - 51% absorbed by Land and Water
 - 23% by the oceans
 - 19% - Atmosphere
 - 3% - clouds

ABSORPTION & REFLECTION

