

Chapter 10- Sect 2- Energy Transfer



SUN provides most of the *energy* on Earth.

Three different things happen to the Sun's energy as it reaches Earth.

1. REFLECTED back into space by the clouds, atmospheric particles, & Earth's Surface.
2. ABSORBED by the atmosphere.
3. ABSORBED by the Earth's Surface.

Excellent diagram on page 291 in textbook

This helps **heat** the Earth

Sun's rays hit rocks, pavement, & water and **absorbs** the heat. Then the HEAT will **transfer** to the air, warming the atmosphere closest to the surface.

HEAT is ENERGY that flows from an object with HIGHER Temperature to an object of LOWER Temperature.

☆☆☆☆ ALWAYS HOT to COLD !!!!!!! ☆☆☆☆

HEAT is TRANSFERRED through the atmosphere in THREE(3) WAYS. RADIATION-----CONDUCTION-----CONVECTION

RADIATION- Sun's RAYS travel THROUGH space to heat object.

Ex- sand at beach gets HOT
car seats / Playground slides get HOT when in the sun
MICROWAVES cook food.

The Sun DOES NOT touch these items directly.

Radiation is transferred in the form of RAYS or WAVES.

CONDUCTION- is when Energy (HEAT) is transferred to another object by **TOUCHING-MAKING DIRECT CONTACT** .
The molecules are **BUMPING** into one another.

EX- Touch a hot stove, you will get burned.
Feet burning on hot sand.
Boiling water or frying an egg in a pan.

CONVECTION- is the transfer of energy by the **FLOW of material**.
Warm air blowing over an object, heats it up.

Ex- Forced hot air furnaces heat homes
Convection ovens- hot air circulating around food cooks it.
Clothes Dryer- blows hot air over clothes to dry them

Warm air molecules move **faster** and are **farther** apart.
Since they are farther apart , they are **LESS DENSE and RISE**
COLD air molecules move **slower** and are **Closer** together.
Since they are closer together, they are **MORE DENSE and SINK.**

HYDROSPHERE- ALL THE WATER on Earth.

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Water- fire hydrant, hydro-electric power, hydroplane, hydrate

Water Cycle- water moves from Earth to the atmosphere and back to Earth again.

- 1-Evaporation- water heated by the Sun turns from a liquid to a gas.
- 2-Condensation- the air cools and the water vapor molecules come together to form small drops- CLOUDS
- 3-Precipitation- when the water vapor drops combine, they become too heavy and fall as rain, snow, or hail.
- 4-Runoff- water flowing over earth's surface after a heavy rain.

Earth is **UNIQUE** because it is the only planet in our solar system that has **life**. It is not **TOO HOT** and not **TOO COLD** and has **LIQUID** water.

It is **JUST RIGHT!!** We call this a **GOLDBLOCKS** PLANET.

