In-Class Assignment to be submitted in 5 minutes

Clouds

Clouds form when energy from the Sun causes water to evaporate, becoming water vapour, and rising into the atmosphere. When it continues to rise, the pressure is lower and temperature cooler, and the water vapour condenses into tiny water droplets.

Three Categories of Clouds

I. Convective Clouds
Rising of warm air with water vapour that cools

II. Frontal Clouds
Cold air mass pushes up a warm air mass, and all moisture condenses to form cloud

III. Orographic Clouds
Air moves up a mountain, cools and condenses

Classifications of Clouds

Cumulus clouds - puffy, round clouds that indicate unstabl weather.

Stratus clouds - flattened, layered clouds

Further Classification

The prefix **alto-** is used to indicate medium level clouds (height in atmosphere)

Ex. Altostratus

The prefix **cirrus-** is used to indicate high-level clouds

Ex. Cirrostratus

Nimbus indicates a rain-holding cloud

Fog

Fog is a cloud that forms near the ground. They normally form when warm air near the ground cools, causing the water vapour to condense into clouds.

Fog normally forms on clear nights, because the Earth's energy cannot be trapped (by clouds), allowing the air to cool.

Precipitation

Precipitation - water that reaches the ground in solid or liquid form

$\Rightarrow$the type of precipitation that hits the ground depends on the temperature on the ground and the temperature in the atmosphere

Types of Precipitation

When clouds particles become too heavy to stay suspended in air, they fall to the Earth in the form of precipitation.

rain - cloud particles combine to form raindrops (0.5-5mm in diameter)

drizzle - fine water droplets less than 0.5mm in diameter

freezing rain - raindrops that are close to freezing and freeze as soon as they strike an object on the ground

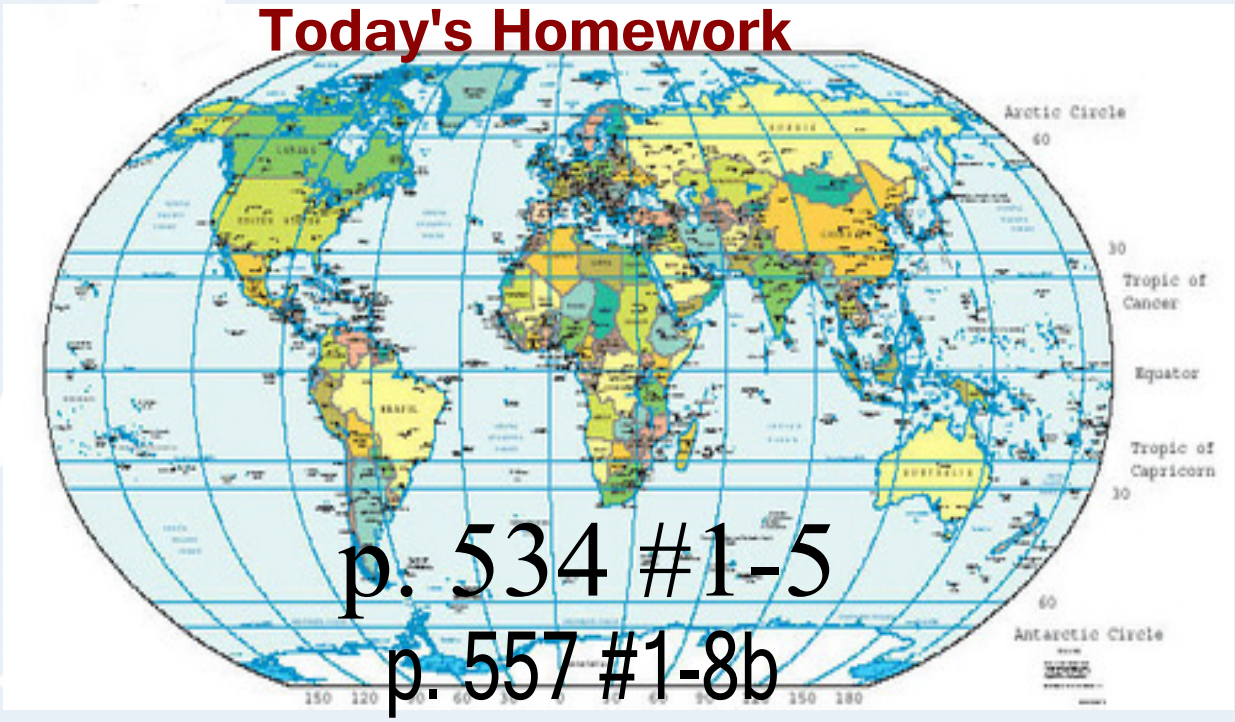
snow - forms when water vapour crystallizes on tiny dust particles
*will only form when the air temperature is below 0°C.

ice pellets (sleet) - solid water that forms when snow partially melts when falling through warm air, and then passes through a layer of air below 0°C.

hail - solid water that forms when frozen raindrops move up and down in active thunderclouds.
*consists of many layers of ice

dew - forms when water vapour condenses on a cool surface near the ground
⇒ frost - when air temperature is below 0°C and water vapour **sublimates** (gas to a solid)

Today's Homework



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