

# Water Cycle Study Guide

The Water Cycle: Evaporation/Transpiration, Condensation, Precipitation, Runoff

## **Sun**

The sun is the most important factor supporting life on Earth. It powers the water cycle by adding heat energy to our oceans and lakes and turning liquid into gas (evaporation).

## **Evaporation:**

Evaporation occurs when heat energy from the sun heats water on earth causing it to turn into water vapor (a gas) and travel into our atmosphere. This is the process that turns liquid into a gas. Most of Earth's water is in our oceans. More evaporation occurs in the summer months because the temperature is the highest at this time.

## **Transpiration:**

Transpiration is evaporation from plants. Water is trapped inside a plant's stomata and when heat energy is added, this water is released, turns into a gas, and travels into our atmosphere. Transpiration is a plant's contribution to the water cycle. More evaporation occurs in the summer months because the temperature is the highest at this time.

## **Condensation:**

After the sun heats our water and changes it into a gas, the water travels high in our atmosphere. When the gas loses heat energy (becomes cool), it changes back into a liquid. This liquid, or condensation, forms the clouds in the sky. When these clouds become full of liquid they get heavy and lead to the next part of our water cycle.

## **Precipitation:**

Precipitation is liquid returned back to the water after the clouds get too heavy. Precipitation can fall to the earth in four forms: rain, hail, sleet, or snow. The form depends on temperature. Increased evaporation, or increased transpiration, would produce increased precipitation. A lack of precipitation would cause a drought and lead to rivers and other bodies of water drying out.

## **Runoff**

Runoff is the flow of water over land. It doesn't get absorbed back into the ground like groundwater. Excessive runoff can lead to flooding.