

# **WATER CYCLE AND WEATHER**

## **What you should know:**

- The water cycle involves liquid being evaporated; water vapor condensing to form rain or snow in clouds which falls to the earth
- Water can evaporate from plants, animals, and puddles in the ground; in addition to bodies of water
- Bubbles that form and rise when water is boiling consists of steam (or water vapor)
- The gas escaping from boiling water is water vapor. When this vapor condenses in the air it is visible as tiny water droplets
- Water left in an open container evaporates, changing from liquid to gas

## **WHAT YOU SHOULD UNDERSTAND ABOUT THE WATER CYCLE AND WEATHER**

- Some events in nature have a repeating pattern. The weather changes from day to day, but some things such as temperature and rain (or snow) tend to be high, low, or medium in the same months every year
- Water can be liquid or a solid and can go back and forth from one form to the other. If water is turned into ice and then allowed to melt, the amount of water is the same as it was before freezing
- Water left in an open container disappears, but water in a closed container does not disappear
- Weather is a daily occurrence; climate occurs over an extended period of time
- Different temperatures affect water, changing the states
- Condensation is water vapor in the air, which cools sufficiently to become liquid. This usually happens when the water vapor comes in contact with a cool surface
- Raindrops begin to fall when water drops in the cloud are too heavy to remain airborne-(a part of the cloud)
- Raindrops' shape is based on their size. Small raindrops are spherical, medium sized are a bit flattened but still basically spherical, and larger raindrops get distorted until they break into smaller drops
- A raindrop's shape is dependent upon the surface tension of water and the air pressure pushing up on the drop as it falls

## **DEFINITIONS FOR WATER CYCLE AND WEATHER**

- Water cycle – the constant movement of water from the surface of Earth to the air and back again
- Water vapor – the gas form of water
- Evaporation – the process by which a liquid changes into a gas
- Condensation – the process by which a gas changes into a liquid
- Precipitation – water that falls from the clouds to the Earth’s surface
- Thermometer – an instrument used to determine how hot or cold the weather is
- Rain gauge – an instrument that collects and measures rain
- Barometer – an instrument for measuring air pressure
- Wind vane – an instrument that gives the direction the wind is blowing
- Anemometer – an instrument for measuring wind speed
- Front – the border where two air masses meet
- Meteorology – the study of weather
- Meteorologist – a scientist who studies weather
- Air mass – a large body of air that has similar temperature and humidity throughout
- Weather – the condition of the atmosphere at a certain place in time
- Climate – a pattern of weather an area experiences over a long period of time
- Temperature – how hot or cold the weather is at any given time
- High pressure – the air is more dense, cooler, and has less humidity (less chance of rain); associated with clear skies and calm weather
- Low pressure – the air is less dense, warmer, and has more humidity (more chance of rain); associated with high winds, precipitation, and bad weather
- Cold front – when a cold air mass replaces a warm air mass at the surface
- Warm front – when a warm air mass replaces a cool air mass at the surface
- Humidity – water vapor in the air
- Clouds – water vapor that clumps together in the air
- Cumulus clouds – puffy cotton-looking clouds with a flat base (these clouds grow upward)
- Nimbus clouds – dark clouds that carry precipitation (storm clouds, rain, sleet, snow, etc.)
- Cirrus clouds – thin, wispy clouds blown in by high winds (high clouds)
- Stratus clouds – uniform gray clouds that cover the sky; lowest clouds in the sky
- Fog – a stratus cloud that has touched the earth; formed in the same way as a cloud
- Front – the border where two air masses meet
- Weather map – a map that uses symbols to show weather; gives information about what the weather is like in a area
- Weather symbols – symbols on the map that show you what type of weather is occurring in an area; a red line with half circles indicates a warm front, a blue line with triangles indicates a cold front, a black dot contains a “White H” indicates a high pressure system, a black dot that contains a “White L” indicates a low pressure system