CSI: SCIENCE

Curriculum Support Information

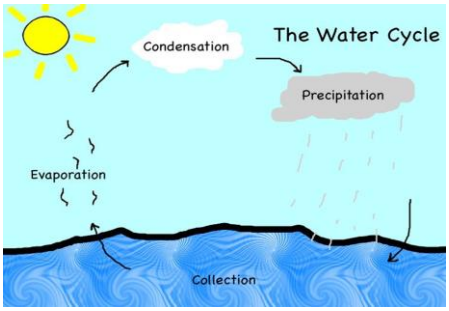
Water Cycle & Weather

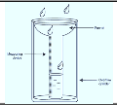
Students will: **Fourth Grade 2 of 5**

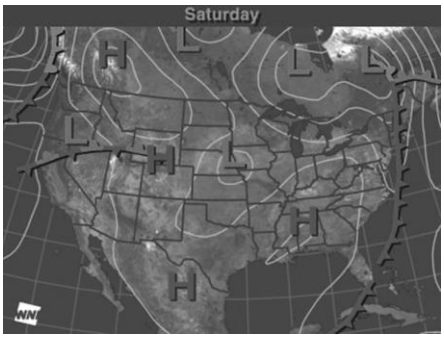
- Demonstrate how water changes state (from solid→liquid→gas)
- Identify the temperature at which water changes state (solid & gas)
- Investigate how clouds are formed
- Explain the water cycle
- Investigate different forms of precipitation & sky conditions
- Identify weather instruments and explain how each one is used
- Interpret weather conditions using a weather map
- Use observations and record weather conditions to predict patterns
- Differentiate between weather and climate

Classroom Cases:

- To the right, you will see an example of the water cycle. This is a continuous process that happens on Earth – it never ends or stops!
- Below, you will see a chart of weather instruments.



Instrument	Use	Example
Anemometer	Measure wind speed	
Barometer	Measures air pressure to predict upcoming weather patterns – low pressure indicates a high chance of rain while high pressure indicates a lower chance of rain.	
Hygrometer	Measures humidity in the air. The more humidity there is in the air, the higher chance of rain there is.	
Rain gauge	Measures rainfall	
Thermometer	Measures temperature. Can measure in Fahrenheit or Celsius. We use Fahrenheit in America. Most of the rest of the world uses Celsius.	
Wind vane	Measures wind direction	



- To the left, you will see an example of a weather map used by meteorologists. Weather maps show areas of high and low air pressure as well as predicted precipitation.

Terminology (make flashcards):

Water cycle: The constant recycling of water on earth
Solid: The state of matter that has a definite shape and takes up a definite amount of space
Liquid: The state of matter that takes the shape of its container and takes up a definite amount of space
Gas: The state of matter that has no definite shape and takes up no definite amount of space
Evaporation: The process by which a liquid changes to a gas
Condensation: The process by which water vapor changes from a gas to a liquid
Clouds: Many tiny drops of water or tiny ice particles floating together in the air that are attracted to dust particles
Dew: Water droplets that form on earth when the air temperature drops
Fog: Cloud of fine drops of water just above the earth's surface
Precipitation: Water that falls to earth as rain, sleet, snow, or hail.
Rain: Water falling in drops from clouds
Hail: Small, round pieces of ice formed in thunderclouds that fall from the clouds
Sleet: Partly frozen rain or ice pellets
Snow: Water frozen into crystals that fall to the earth in soft white flakes and often spread upon it as a white layer

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Weather: Conditions of the atmosphere with respect to temperature, wind, humidity, cloudiness, etc.
Meterorologist: A person that studies atmospheric conditions
Anemometer: Measures wind speed
Barometer: Measures air pressure
High pressure: Usually indicates bad weather
Low pressure: Usually indicates good weather
Air mass: A large body of air that has similar temperature and humidity throughout
Front: A place where two air masses meet up
Humidity: The amount of moisture in the air
Rain gauge: Measures rainfall
Thermometer: Measures temperature
Fahrenheit: Temperature scale that registers freezing at 32° and boiling at 212°
Celsius: Temperature scale that registers freezing at 0° and boiling at 100°
Wind vane: Measures wind direction
Climate: The average temperature and rainfall of an area over many years

Further Investigations

Remember to check out Mr. L's website at http://APaigePage.weebly.com. Here, you will find the Investigations for this unit.
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