SCIENCE PARENT GUIDE – UNIT 1

4

IMPORTANT CONCEPTS YOUR STUDENT SHOULD KNOW AND ACTIVITIES TO DO AT HOME

WATER AND WEATHER

DESCRIPTION

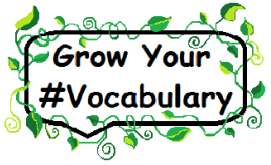
This unit teaches the stages of the water cycle and how each stage is formed by relating it to the states of water (solid, liquid, and gas) and the temperatures that water changes state. Students will explore freezing, melting, boiling, and evaporating. Students will collect and analyze weather data. Students will use weather instruments: thermometer, rain gauge, barometer, wind vane, and anemometer to collect weather data. Students will understand some events in nature have a repeating pattern such as weather. Weather is a daily occurrence, and climate occurs over an extended period of time.

KEY WORDS TO KNOW

- **thermometer**: An instrument for measuring temperature
- **temperature**: The average kinetic energy of all the molecules in an object which produces coldness or hotness
- **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 in which a liquid changes to a gas
- **condensation**: The process by which water vapor changes from a gas to liquid
- **precipitation**: Water that falls to Earth as rain, snow, sleet, or hail
- **condensation**: The process by which water vapor changes from a gas to liquid
- **weather**: Day-to-day variations of the atmosphere and their effects on life and human activity. It includes temperature, pressure, humidity, clouds, wind, precipitation and fog.
- **clouds**- a visible of tiny water and/or ice particles in the atmosphere
- **rain gauge:** An instrument used to measure rainfall amounts
- **thermometer**: An instrument for measuring temperature
- **wind vane:** An instrument that determines the direction from which a wind is blowing.
- **anemometer**: An instrument that measures wind speed
- **barometer**: An instrument that measures air pressure
- **meteorologist:** an expert in or student of meteorology; a weather forecaster

AT HOME VOCABULRY STRATEGIES

1. Read aloud with your child.
2. Use vocabulary words in daily conversations.
3. Build a word wall or window.
4. Play simple vocabulary games.
5. Relate words to real life experiences.

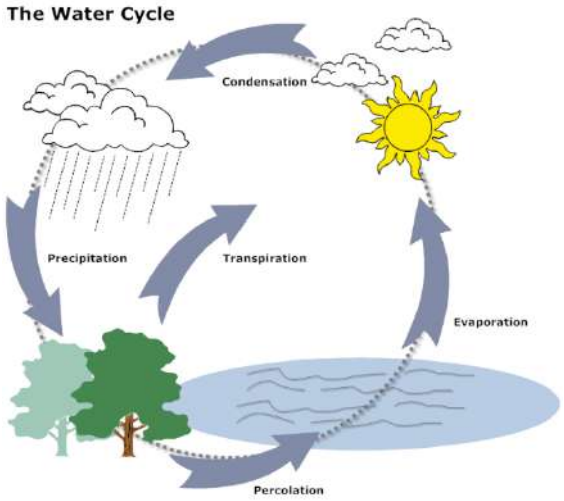


SCIENCE PARENT GUIDE – UNIT 1

4

Children's Literature (Available at your local public library or Amazon).	
One Well by Rochelle Straus *Cloud Dance by Thomas Locker* *Who Likes the Rain? By Etta Kaner* *A Drop of Water: A Book of Science and Wonder by Walter Wick* *The Magic School Bus: At the Water Works by Joanna Cole* *I Am Water (Hello Reader! Science Series) by Jean Marzollo*	*Water by Frank Asch* *Water, Science, Water Fun: Great Things to do with H2O by Noel Fiarotta and Phyllis Fiarotta* *Where Does Water Come From? by C. Vance Cast* *Where Do Puddles Go? by Fay Robinson*

WATER AND WEATHER

Important Concepts Addressed in this Unit	Sample Problems	How You Can Help Your Child
S4E3. Students will differentiate between the states of water and how they relate to the water cycle and weather. a. Demonstrate how water changes states from solid (ice) to liquid (water) to gas (water vapor/steam) and changes from gas to liquid to solid. b. Identify the temperatures at which water becomes a solid and at which water becomes a gas. c. Investigate how clouds are formed. d. Explain the water cycle (evaporation, condensation, and precipitation). e. Investigate different forms of precipitation and sky conditions (rain, snow, sleet, hail, clouds, and fog).	Use the diagram below to explain the water cycle. 	**Interactive Learning Games** Water Cycle Video and Assessment http://studyjams.scholastic.com/studyjams/jams/science/ecosystems/water-cycle.htm Weather and Climate Video and Assessment http://studyjams.scholastic.com/studyjams/jams/science/weather-and-climate/weather-and-climate.htm Weather Instruments Slide Show and Assessment http://studyjams.scholastic.com/studyjams/jams/science/weather-and-climate/weather-instruments.htm

S4E4. Students will analyze weather charts/maps and collect weather data to predict weather events and infer patterns and seasonal changes. a. Identify weather instruments and explain how each is used in gathering weather data and making forecasts (thermometer, rain gauge, barometer, wind vane, anemometer). b. Using a weather map, identify the fronts, temperature, and precipitation and use the information to interpret the weather conditions. c. Use observations and records of weather conditions to predict weather patterns throughout the year. d. Differentiate between weather and climate.		