

Water Cycle Unit Summary

◆ Grade Level

5th- 8th grades

◆ Subject Areas

Life Science, Environmental Science, Ecology

◆ Key Topics

Water cycle, biomes, states of matter, precipitation, evaporation, condensation, sublimation, transpiration, run off, accumulation, infiltration, percolation, groundwater

◆ Duration

Lesson #1: 2 x 50 min
Lesson #2: 1 x 50 min
Lesson #3: 1 x 50 min
Lesson #4: 2 x 50 min
Lesson #5: 5 x 50 min

◆ Skills

- Gathering, organizing, interpreting, applying, reading, sharing information
- Collecting observations
- Identifying patterns
- Researching
- Designing
- Modeling
- Presenting

Overview

Students will be introduced to the water cycle from both a local and global perspective as well as, participate in hands-on inquiry stations, an online water cycle exploration activity, and a teacher-led presentation that will aid vocabulary acquisition and use. Students will demonstrate their understanding of the water cycle by building a functional 3-D model that represents how the water cycles through a specific biome found on Earth. This unit will help students to understand that water moves through every environment, but how that water moves can greatly vary depending upon the area of Earth in which it is moving through.

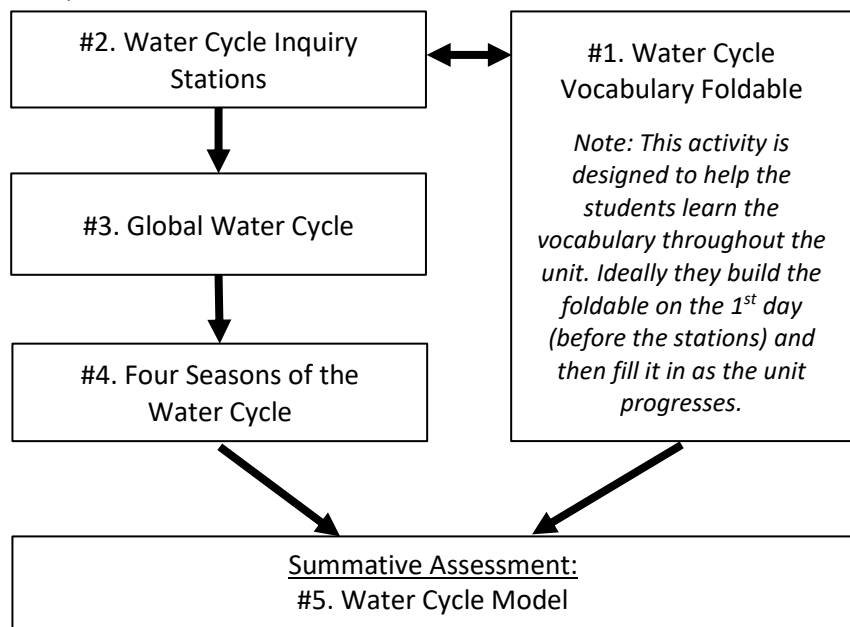
Unit Lessons

- #1. Water Cycle Inquiry Stations
- #2. Water Cycle Vocabulary Foldable
- #3. Water Cycle Around the World
- #4. Four Seasons of the Water Cycle
- #5. Water Cycle Model



Unit Sequence

Although each lesson can be taught independently, we recommend using the sequence below:



Note: This activity is designed to help the students learn the vocabulary throughout the unit. Ideally they build the foldable on the 1st day (before the stations) and then fill it in as the unit progresses.

Online Source for Unit Materials

All printable lesson materials are available on our website:

<https://flbs.umt.edu/newflbs/k12teachingmaterial>

Unit Materials List

Lesson	Materials needed
#1. Water Cycle Vocabulary Foldable	<ul style="list-style-type: none"> • 8 ½" x 11" white paper and 4 1/8" x 11" assorted colored paper strips • Scissors (one/student)
#2. Water Cycle Inquiry Stations	<ul style="list-style-type: none"> • Station #1: Tap water, three 500 mL water bottles, 12" ruler • Station #2: Electronic balance, weigh boats (2/group), ice cubes (2/group), timer, paper towel • Station #3: Mug, mirror, electric kettle or thermos of hot water • Station #4: Electronic balance, beakers (1/group), 1" x 4" paper towel strips (1/group), food coloring, flat tray • Station #5: test tube rack, 6 25mm test tubes, 5 live basil plants, parafilm or Glad® Press'n Seal saran wrap, pipet, extra fine sharpie, 12" ruler, Vaseline
#3. Global Water Cycle	<ul style="list-style-type: none"> • Chromebooks/computer access for each student • Water Cycle Google My Map shared with students
#4. The Four Seasons of the Water Cycle	<ul style="list-style-type: none"> • Computer, projector, Four Seasons of the Water Cycle Presentation (PPT) • Globe and flashlight or illuminated globe with rotating sun and moon • Water
#5. Water Cycle Model	<ul style="list-style-type: none"> • Students bring in materials to build their model • Chromebooks/computer with printer access for each student • Scissors, 8 ½" x 11" paper

Unit Standards

Water Cycle Lesson		Water Cycle Inquiry Stations	Water Cycle Vocab. Foldable	Global Water Cycle	Four Seasons of the Water Cycle	Water Cycle Model
NGSS Standards	5-ESS2-5					✓
	MS-ESS2-1					✓
	MS-ESS2-4	✓	✓	✓	✓	✓
	MS-ESS2-6				✓	✓
NGSS Crosscutting Concepts	Systems and System Models			✓	✓	✓
	Patterns	✓		✓	✓	
	Energy and Matter	✓	✓	✓	✓	✓
	Stability & Change					✓
NGSS Core Concepts	ESS2.A: Earth's Materials and Systems	✓	✓	✓	✓	✓
	ESS2.C: The Roles of Water in Earth's Surface Processes	✓	✓	✓	✓	✓
	ESS2.D: Weather and Climate				✓	✓
NGSS Science & Engineering Practices	Constructing Explanations			✓		✓
	Developing & Using Models					✓
	Obtaining, Evaluating, & Communicating Information	✓	✓	✓	✓	✓
MT Content Stds. (English Language Arts & Literacy)	W.5-8.4: Clear coherent writing	✓	✓	✓	✓	✓
	W.5-8.2: Write informative texts	✓	✓	✓	✓	✓
	L.5-8.6: Acquire and use vocab	✓	✓	✓	✓	✓
	SL.5-8.4: Present ideas					✓