

8a.1 The Water Series

Story Extension for This Lesson:

Sam and Alex discover through a canoe trip about the water in their nearest Great Lake, Lake Ontario. Use this lesson to have your class collect all of their current knowledge about water and derive the Water Cycle.

Grade: 8

Strand: Water Systems

Big Ideas:

- Water is crucial to life on Earth.
(Overall expectations 1 and 2)
- Water is an important resource that needs to be managed sustainably.
(Overall expectations 1 and 2)

Overall Expectations:

1. assess the impact of human activities and technologies on the sustainability of water resources
2. investigate factors that affect local water quality

Specific Expectations:

3.1 identify the various states of water on the earth's surface, their distribution, relative amounts, and circulation, and the conditions under which they exist

Inquiry Skills:

Planning, Classifying, Discussing
Brainstorming, Collaboration

Instructions:

As a whole class activity, the students will brainstorm what they already know about water. Students will have an opportunity to list what they know about the relationship between water and the environment, and will identify what they want to learn by writing down a set of questions. This activity will assist the teacher in determining the students' existing knowledge of the water cycle.

Introduce the concept of the water cycle through **Crash Course Kids, episodes 24.1 and 24.2**. This activity can be divided into two classes. Begin by watching episode 24.1 and clarify what occurs in the water cycle, including the three key points of evaporation, precipitation, and condensation. This could be followed by a brief PowerPoint to help clear up any mis-understandings. Encourage students to develop questions and engage discussion about the water cycle; from which the students can create questions for their own further investigation.

Next, watch **episode 24.2**, which explains that the water cycle is not a perfect cycle because it travels all over the world and takes millions of years to complete.

Materials List:

- PowerPoint
- projector
- computer
- pencils or pens

Subject Area:

Environmental, Science, Social Studies

Connects to:

Grade 7, Grade 8

Handouts:

- - Water System Intros
- - Water Systems 1

Assessment Strategy:

The Learning Process

Water Cycle

Name: _____

Create a sequence for a water particle to pass through the water cycle. Each transition must work in real terms. No droplet could go from being in a cloud to being in an animal without some kind of secondary transition.

Transitions
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.

Now write the story of your water droplet (use the power paragraph structure to help build your story structure), explaining the journey of the droplet through the water cycle. You must have at least one sentence for every transition.

Use the back of the paper to create your rough outline.

The Learning Process

Inquiry Process: Immersion - *Define Topics, Build Background and Invite Curiosity*

Traits

- Create self-reliance when interacting with a variety of media to explore and develop background knowledge
- Responds to text by jotting or drawing questions, connections, and reactions
- Works productively with groups to create a plan
- Identifying the Main ("Big") Ideas
- Completed a conference to confirm Main ("Big") Ideas

Step 1: *The BIG Question (What is the big idea being investigated?)*

Step 3: *Conference Notes*

Level:

Distinction = 4, Proficiency = 3, Emerging = 2, Beginning = 1

Inquiry Process: Investigation – *Developing Questions, Searching for Information and Answers*

Traits

- Listens, talks, views, and reads to gain information
- Uses the Q-chart to develop questions for investigation
- Works productively with teams to monitor schedules and task completion
- Completed a conference to develop questions

Guiding Questions (One (1) guiding questions from each column and each row.)

	Is/Is not	Do\Did(not)	Can (not)	Would/Should	Will	Might/Could
Who						
What						
Where						
When						
How						
Why						

Write out the completed questions in full. (You may change these or add to them during the process.)

Who	
What	
Where	
When	
How	
Why	

Step 3: *Conference Notes*

Check off:

Distinction = 4, Proficiency = 3, Emerging = 2, Beginning = 1

Inquiry Process: Integration – *Intensify research, Synthesize Information, Connect Knowledge*

Traits

- Engages in deeper reading and researching: Books, articles, and websites.
- Checks sources, determines reliability
- **Synthesizes information**
- Works productively with teams to monitor task completion and sharing
- Use appropriate technology as a tool to help gather and analyse information, solve problems, and communicate.
- Completed a conference concerning

Step 3: Conference Notes

Level:

Distinction = 4, Proficiency = 3, Emerging = 2, Beginning = 1

Inquiry Process: **Instruction** – *Sharing Learning and Demonstrate their Understanding*

Traits

- Completed a conference
- Demonstrates learning and understanding in a variety of ways
- **Teaching others**
- Reflects upon and articulates **the learning process**
- Defends and reflects upon the cooperative procedure

Step 3: Conference Notes

Level:

Distinction = 4, Proficiency = 3, Emerging = 2, Beginning = 1