

MAC Lesson Plan

Module: Water

Objectives: After Completion of this module, students will be able to:

1. Understand what water is used for.
2. Understand the importance of water.
3. Discuss where water comes from.
4. Discuss the purposes of man-made reservoirs.
5. Understand how water gets from reservoirs to crop fields.
6. Understand how water gets from an aquifer to various locations.
7. Have a basic understanding of the importance of water to the future of Idaho citizens and communities.

Instruction Time: 40-50 minutes

Resources:

Materials Provided:

- Rolling Water Module
- Big Book of Water
- 2-Easels

Materials needed:

- Distilled Water-1 ½ gallons

Teaching Strategies (Content Delivery):

Objective 1: Understand what water is used for. The teacher is encouraged to ask questions of the class to identify these facts. Set up both easels side by side and place the Big Book of Water on the easel on the right when looking at it from the front. **(Do not have the water module to where the kids can look at it while looking at the book. Only fill the reservoir under the case to the fill line with distilled water.)**

➤ **Cover Page-Big Book of Water**

- **What are the different uses of water?**
 - Answers can include: drinking, bathing, cooking, watering plants/lawns, animals, fishing, water-skiing, etc.
- Turn the cover page to the opposite easel. (May have a student come up and help turn the page.)

Objective 2: Understand the importance of water.

➤ **Page 1-Use of Water**

- **What are some occupations that need water?**
 - Fire fighter, farmer, navy, hydrologist, power generation, etc.
- **What would happen if we didn't have water?**
 - Food wouldn't grow, no showers, nothing to drink, die, etc.

Objective 3: Discuss where water comes from.

➤ **Page 2-Changing Form**

- **Where does water come from?**
 - Discuss the water cycle.
 - Clouds carry moisture over land. Rains or snows depending on temperature. If cold snow lands on mountains. Snow accumulates. As temperature rises snow begins to melt in the spring. Water runs down off the mountains into streams, rivers, and lakes.
- **What happens if the snow on the mountains melts to fast?**
 - If the snow melts to fast the streams, rivers, and lakes can flood.

Objective 4: Discuss the purposes of man-made reservoirs.

➤ **Page 3-Extremes**

- **Where were most cities developed in the old days?**
 - Along rivers for water and transportation. People didn't have pumps to get water far away from rivers to take care of animals and crops so they built towns close to rivers. Flooding can occur if snow melts to fast.
- **What happens if the summer has little to no rain?**
 - Crops, lawns, golf courses, can dry up and die. The crops that have been planted need to be watered till they are harvested. Without rain they will die. Animals can die as well.
- **What can we do to help these situations?**
 - Communities built reservoirs/dams to hold water for storage and flood control.

Have the group then go to the water module. Turn the water module on. You can discuss water melting out of the mountains to fast and adjust the valves to flood the town. **If the reservoir under the module is filled past the fill line it will not work properly.** Let it flood the town. Then have the group go back and sit down in front of the book and discuss page 4.

➤ **Page 4-At The Dam**

- **What are some of the structures found near dams?**
 - The dam
 - Spill way
 - Fish Ladder
 - Hydro-electric turbines
- **Who do they help?**
 - The dam-hold back water for storage, recreation, etc.
 - Spill way-used to allow water past for flood control and raising and lowering the level of the reservoir.
 - Fish Ladder-allows fish to return upstream to spawn.
 - Hydro-electric turbines-electrical generation for supplying towns and cities with electricity.

Objective 5: Understand how water gets from reservoirs to crop fields.

➤ **Page 5-Away From The Dam**

- **Can you name these three waterways?**
 - River-blue outline
 - Canal-pink outline (man-made)

- Ditch-greenish-yellow outline (man-made)
- **How does our food get its water?**
 - Water flows from reservoirs through rivers to man-made canals and then into man-made ditches to fields to water crops. Crops in the fields then take up water through their roots. Many fields are far away from rivers or canals and have to get water from pivots that get their water from underground.

Have the group then go to the water module. Turn the water module on. You can discuss the parts of the dam. The dam, reservoir, spillway, fish ladder, hydro-electric turbines. Then have the group go back and sit down in front of the book and discuss page 6.

Objective 6: Understand how water gets from an aquifer to various locations.

➤ **Page 6-A Giant Lake Hidden In Idaho**

- **What do people do if they live far from rivers?**
 - They have to drill wells and pump water to homes and fields.
- **What is the underground lake under Idaho called?**
 - The underground lake is called an aquifer. It is like a giant rock sponge underground.
- **How does the water go in and how does it come out?**
 - The water goes into the aquifer through people flood irrigating, through soaking through the ground, some spots in rivers disappear and the water goes underground.
 - The water comes out of the aquifer through wells pumping the water out. It is like putting a straw in a glass and sucking the water out. If we just keep sucking the water out and never putting any back in what will happen.
 - The water naturally comes out of the aquifer at a place called Thousand Springs around the Twin Falls area on the Snake River

Objective 7: Have a basic understanding of the importance of water to the future of Idaho citizens and communities.

➤ **Page 7-Water In The News**

- **What water topics will be discussed in your future?**
 - You can talk about water calls, future growth, how it affects agriculture, water curtailments, etc. Each area has its own water problems and challenges. Help the students and teachers realized this isn't just a problem for farmers and ranchers. Everyone needs water to survive. This will continue to be a big issue for all Idaho residents.