DCR Watersheds as Classrooms Virtual Edition

dcr Massachusetts

Wachusett Watershed Virtual Field Trip

Overview:

Tour key locations around Wachusett Reservoir while learning what a watershed is. A watershed is any area that funnels precipitation and snow melt to a common destination. It can be as small as a footprint, where all the surrounding water drains to and collects into the footprint in the mud. It can be large enough to include all the land that drains into rivers that flow into the ocean. Watersheds can interconnect to form larger ones. A neighborhood can be a watershed by itself but may also be part of other watersheds as rivers connect to streams and eventually make it to the ocean.

How the land in a watershed is used can affect the quality of the water in the drainage basin. The land surrounding the Wachusett Reservoir is protected, and activities on DCR Watershed lands are regulated to protect pollutants from entering the reservoir. Quabbin and Wachusett Reservoirs are one of the few unfiltered drinking water supplies in the country. The reservoirs supply the Massachusetts Water Resources Authority with high quality drinking water for 3 million people (40% of the population) in Massachusetts. Watershed protection also protects public and private groundwater wells from pollutants.

Format:

7:30 minute video Wachusett Watershed Tour

Curriculum Connections:

Grades 2-8
ESS3. Earth and Human Activity
Extended Activity: Geography, Human Geography, Reading and Making Maps

Guiding Question: What is a Watershed?

The objectives of the lesson are to:

- Develop a deeper understanding of a watershed.
- Identify features found in a watershed.
- Understand how human activities can affect watersheds.

Optional Activity while watching video

1. Give the students the attached Watershed map to check off locations mentioned in the video. Trace the water sources within the watershed.
2. Hand out vocabulary words and have students check off when mentioned in the video.

Optional Pre-visit Activity

Introduction- Watch Video Wachusett Reservoir Tour: 7 minutes
An overview of the demand for water supply and construction of the Wachusett Reservoir.

Assessments:

Pre-Assessment Activity 1:
Spend a few minutes having a conversation with students about water in their daily lives.

- How many of you used water before you came to the program today?
- How else do you think the people in our community use water?
- Where do you think all that water comes from? *Does water in your community come from a lake, river, or underground? Whatever the source, your water ultimately comes from rain or snow that runs into streams and rivers and is collected by watersheds (land area that collects water)*
- Wachusett and Quabbin Reservoirs provide drinking water to the MWRA (Massachusetts Water Resources Authority) for 3 million people in 51 communities. Are you in one of those communities? MWRA Community Map
- Water protection practices also protect local ground and well water sources.
- Introduce vocabulary words.

Pre-Assessment Activity 2:

- Jamboard: What is a Watershed? Have students add their answers to this public Jamboard or create your own.

Post Assessment Activity 1:

- Revisit Jamboard with correct answers, have each student add one thing learned on the second slide.

Post Assessment Activity 2:

- Kahoot! Wachusett Watershed Virtual Tour Assessment
  Request an invite from Kathryn.Parent@mass.gov to the Wachusett Watershed group, choose from a public Kahoot!, or create your own.

Extend the Experience:

Geography, Human Geography, Reading and making maps

Use a map of your area and tracing paper to create a map or poster of your own watershed. Find local waterways. Draw on important features including buildings, parks, roads, landforms, etc.

Massachusetts River Basin Map: This map used in the video. Point out the largest water body in MA is the Quabbin Reservoir. Point out the second largest is Wachusett

Reservoir, within the Nashua River Watershed. Notice the watersheds are named for the basins they drain to.

Where's My Watershed? Find local waterways on a map to find your watershed address. Enter a location in the search box to explore waters in your area.

Educator Resources:

USGS Water Science School
U.S. Geological Survey's Water Science School offers information on many aspects of water, along with pictures, data, maps, and an interactive center where you can give opinions and test your water knowledge.

Project WET
Water Education Today, advancing water education to understand global challenges and inspire local solutions.

Vocabulary:

AQUEDUCT: a system of pipes, ditches, canals, tunnels, and supporting structures used to convey water from its source to a distribution point.
CONDENSATION: formation of clouds.

EROSION: A process where rocks and sediments are picked up and moved to another place by ice, water, wind, or gravity.

HYDROELECTRIC FACILITY: A type of power plant that uses the energy of falling or flowing water to generate electricity.

IMPERVIOUS: Not allowing fluid to pass through. Impervious surfaces are hard and usually manmade- rooftops, roads, and parking lots. Water cannot pass though and seep into the ground but runs off into storm drains and then quickly into waterways.

INFILTRATION: Absorption of water by the soil.

RESERVOIR: A large natural or artificial lake used as a source of water supply.

RUNOFF: Excess water from rain or melting snow that runs downhill over the landscape.

STORMWATER BASIN: an artificial pond used to store and slow stormwater runoff to prevent flooding and downstream erosion, and improve water quality

WATERSHED: An area of land that drains to a common river, lake, or reservoir. A watershed includes everything within its borders—land, animals, plants, people, and their traditions.

Contact Information:

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DCR/DWSP Watershed Boundaries
Wachusett Watershed
Wachusett Dam
Cosgrove Intake
Stillwater River
Stillwater Farm
Qinnepoxet River
Oakdale Power Plant
Old Stone Church
Leominster State Forest
Wachusett Mt State Reservation
East Princeton
Princeton Station
North Rutland
New Boston
Muschopauge
Ruralville
Oakdale
Quinapoxet
Rutland
Rutland State Park
Turkey Hill Shores
Paxton
North Spencer
Great Brook Valley
Moores Corners
Pratt Junction
Sterling
Clinton
South Lancaster
Lancaster
West Berlin
Woodside
Northborough
Bolton Flats State Wildlife Area
Wataquadock Hill
1356 ft
1468 ft
701 ft
636 ft
751 ft
1387 ft
0 1.5 3km
Esri, NASA, NGA, USGS | Esri Canada, Esri, HERE, Garmin