

Hector Falls in Winter, Watkins Glen, c. 1900

Lesson type: Worksheet

Grade Level: Elementary School

Middle School

High School

Lesson Topic: Environment > Bodies of Water

New York State Learning Standard: Social Studies > Standard 1: US/NY History > Key Idea 2: Time Period

Social Studies > Standard 3: Geography > Key Idea 1: Content

Social Studies > Standard 3: Geography > Key Idea 2: Skills

Common Core Standard: English Language Arts and Literacy > 6-12 > Reading > Integration of Knowledge and Ideas

21st Century Skills: Critical Thinking and Problem Solving

Information Literacy

Education Project: Throughout the Ages

Funder: JPMorgan Chase

Historical Context

For a waterfall to freeze, the temperature has to be very cold. Water is made of tiny, moving particles called molecules. When water gets cold, the molecules slow down and stick together, forming ice. Because water flows very quickly at a waterfall, the water molecules are usually moving too fast to get stuck together, even if they are cold. However, if the temperature gets cold enough, water molecules at a waterfall will slow down enough to form ice. After the first ice crystals form, the rest of the waterfall freezes more easily.

Essential Question

How does geography impact culture and economic systems?

Check for Understanding

Describe the scene in the photograph and explain the influence of this water source on New York's culture and economy.



N.Y. Watkins Glen. Hector Falls, Winter., New York State Archives, NYSA_A3045-78_D47_WkH

Document Description

The frozen Hector Falls near Watkins Glen, New York, circa 1900.

Questions

1. Do all waterfalls freeze?
2. Why is water in a waterfall less likely to freeze than water that is standing still?
3. What causes water to move quickly at a waterfall?
4. What problems might result from partial freezing of waterfalls?
5. Do you think this waterfall would freeze if it were located in Florida instead of New York?
6. What would this waterfall look like in the summer?
7. Why do you think the man was photographed next to the waterfall?
8. What might he have been thinking and feeling when this photograph was taken?
9. What body of water flows over Hector Falls?

Historical Challenge

When was the last time Hector Falls froze?

Interdisciplinary Connections

Science: Investigate how waterfalls are formed.

Science: Research the largest waterfall in New York State. Give five facts about it and describe where it is located.

English Language Arts: Write an essay comparing and contrasting two waterfalls in New York State.

Resources

1. Donnelly, Andrew. *Waterfalls*. Chanhassen, MN: Child's World, 1999. ISBN: 1567664873.
2. Fowler, Allan. *The Wonder of a Waterfall*. New York: Children's Press, 1999. ISBN: 0516208136.
- 3.

Freeman, Rich. *200 Waterfalls in Central and Western New York: A Finders' Guide*. Fishers, NY: Footprint Press, 2002. ISBN: 1930480016

4. <http://www.newton.dep.anl.gov/askasci/gen01/gen01359.htm>
5. <http://www.angelfire.com/ny4/waterfalls/NewYork.html>
6. <http://www.gowaterfalling.com/waterfalls/maps/fingerlakes.shtml>
7. <http://www.nyfalls.com/waterfalls.html>