

# Navigating



## Greatest of the Great Lakes

### Activities by Category

Activities By Instructional Mode										
	Short	Volleyball	Simulation	Manipulative	Board Games	Experiment	Data Interpretation	Decision Making	Art & Language	Auto Extractions
	Story	Roleplay	Manipulative	Manipulative	Board Games	Experiment	Data	Data	Art & Language	Calculus
Great Lakes Overview										
How Big Is a Crowd?	X	X								
How Well Do You Know the Great Lakes?	X	X								
Where Should I Relocate in the Great Lakes Region?					X	X				
200 Years of Change	X						X			
Ojibway-Early Immigrants to the Great Lakes Region	X							X		
Great Lakes, Great Careers							X	X		
Who Can Harvest a Walleye?		X							X	
What Are the Characteristics of Some Great Lakes Fish?								X		
Don't Stop for Hitchhikers!	X	X						X		
Estuary Values & Changes (set of two)							X		X	
Seeing Purple		X							X	X
Hydrology			X							X
Wetland in a Pint		X	X							
How do the Great Lakes Modify the Growing Season				X	X			X		
Snowmaking-Great Lakes Style					X					
How Does the Temperature of the Great Lakes Change Over Time?				X	X			X		
Temperature & Climate (set of two)				X	X			X		
Great Lakes Triangle (set of three)				X	X			X		X
Your Great Lake!				X						
More Than Just a Lake!				X						
How Does Stratification Affect Water Quality?					X			X		
Making Great Lakes Connections				X	X					
Water Quantity				X					X	
How Did Rocks and Rivers Shape the Great Lakes?					X			X		
What Evidence of Glaciation Exists in the Great Lakes Region?					X			X		
Land & Water Interactions (set of two)					X			X		
Indoor Dunes					X					
Rival for Survival					X		X			
Whose Water?						X	X			X
Beach Mysteries							X			X
Exotic Puzzles					X					
Invader Species of the Great Lakes	X	X				X	X			
Is the Globe Warming? Is There Evidence in the Great Lakes Region?							X			X
Toxic Chemicals in the Great Lakes (set of two)					X		X			
Which Fish Can We Eat?							X			

When printing this page, please use legal size paper.



xii

### Standard Tables

Alignment to Illinois State Science Standards		
Activity	Grades	Standards
Great Lakes Overview	6-10	11A.4b; 11A.4c; 11B.4b; 11B.4c; 12B.4a; 13A.4b; 13B.4c
How Big Is a Crowd?	6-10	11A.4a; 4b-12B.4a; 4b-13B.4c; 4d
Where Should I Relocate in the Great Lakes Region?	6-10	11A.3a; 11A.3c; 11A.4c; 11B.3a; 11B.3b; 11A.4a; 11B.3b; 11B.4b; 11A.4f; 11A.3g; 11B.3a
200 Years of Change	4-8	11A.2c; 2d; 13B.2f; 3e
Ojibway-Early Immigrants to the Great Lakes Region	4-8	13B.3b
Great Lakes, Great Careers	4-8	13B.2c; 3c
Who Can Harvest a Walleye?	6-10	11A.3c; 11A.4c; 11B.3a; 11B.4b; 12B.3a; 12B.4a; 12B.3b; 12B.4b
What Are the Characteristics of Some Great Lakes Fish?	6-10	11A.4b; 11A.4c; 11B.4b; 11B.4c; 12B.4a; 13A.4b; 13B.4c
Don't Stop for Hitchhikers!	4-8	11A.2a; 2b; 20; 20-26; 12A.2a; 2b; 12B.2b; 13A.2c
Who can harvest a walleye?	6-10	11A.3c; 11A.4c; 11B.3a; 11B.4b; 12B.3a; 12B.4a; 12B.3b; 12B.4b
(What are the characteristics of some GL fish?)	6-10	11A.4b; 11A.4c; 11B.4b; 11B.4c; 12B.4a; 13A.4b; 13B.4c
What is the ecological role of an estuary?	6-10	12B.4a; 4b-13B.4c
Seeing Purple A Population Explosion	4-8	11A.2a; 2b; 2c; 2d; 2e; 11B.2a; 12B.2b; 13A.2c
Hydrology A Decision-Making Game	4-8	11A.2a; 2b; 2c; 2d; 2e; 11B.2a; 2b; 13A.2c; 20; 13B.2a; 2b; 2f
What Happens to Fish in a Pond?	4-8	11A.2a; 2b; 2c; 2d; 2e; 11B.2a; 2b; 2c; 2f
Climate & Weather		
How do the Great Lakes Modify the Growing Season	6-10	11A.4a; 4b-4d-4e-12B.4b-12E.4a-13A.4b; 4c-4d-13B.4a-4c-4d
Snowmaking-Great Lakes Style	6-10	11A.4b-12E.4b-13A.4b-13B.4c
How does the temperature of the GL change over time?	6-10	11A.4c; 4d-11B.4c-12C.4b-12E.4a
Great Lakes Triangle set of 3 activities	6-10	11A.4a; 4c-4d-4e-1B.4b; 4c-12C.4a-12E.4a-12D.4f
What happens to heat energy reaching the Great Lakes?	6-10	11A.4a; 4b-4c; 4d-4e-1B.4b-12C.4a-12E.4a
Hydrology		
Your Great Lake!	4-8	11A.2a; 2b; 2c; 2d; 2e; 11B.2a; 2b; 2f; 13A.2c; 20; 13B.2b; 20; 2f
More Than Just a Lake!	4-8	11A.2a; 2b; 2c; 2d; 2e; 12B.2b; 2f
How does human activity affect water quality?	6-10	11A.4a; 4b-4c-4d-4e-12B.4a-12E.4a-13B.4c
Making Great Lakes Connections	4-8	11A.2b; 11A.2c; 11A.2d; 11A.2e; 11B.2c; 13B.2e; 11A.3f; 11A.4c
Water Quantity	4-8	11A.2a; 2b; 2c; 2d; 2e; 13B.2c; 2d

*Greatest of the Great Lakes* activities have been aligned to education standards by educators from eight Great Lakes states, as follows:

- National Science Standards
- Illinois Science Standards
- Indiana Science Standards
- Michigan Science Standards
- Minnesota Science Standards
- New York Science Standards
- Ohio Science Standards
- Pennsylvania Science Standards
- Wisconsin Science Standards
- Earth Systems Understandings
- Ocean Literacy Principles

This collection of 41 activities covers a broad range of grade levels (4-10) and instructional modes. Activities are grouped to help you find appropriate activities for any situation at a glance. They are organized by:

- Grade Level
- Instructional Mode
- “Big Idea”

## Activities

### How Well Do You Know the Great Lakes?

Many people, including a large proportion of those who live close to the Great Lakes, do not have a basic understanding of the individual characteristics of and the differences between the lakes. Since it is difficult to understand many of the Great Lakes issues, such as global warming, pollution, and water use without a basic understanding of the lakes, this activity is designed to help visualize the differences in the volume, length of shoreline, human population distribution, and fish populations of the Great Lakes.

**OBJECTIVES**  
In this activity you will develop a perception of the differences between the Great Lakes in water volumes, length of shoreline, human population distribution, and the amount of fish harvested from each lake.

**PROCEDURE**  
1. In this activity you will work in groups. You will be assigned to an expert group and a base group.

**Expert Groups**  
There should be a total of five expert groups, one assigned to each lake. Each expert group studies one lake to become "experts" on that lake.

**Base Groups**  
The base groups should have five (or more) people in them; in this group students from the different expert groups come together to share their knowledge. There must be at least one member from each expert group (in other words, a representative from each lake) in each base group so that every lake has a spokesperson.



**Materials**  
Each base group (of five students) will need:

- A set of five labeled strings as described in step 1 of *Using the Data*.
- 100 squares of blue paper.
- Five squares of paper that will be placed next to the string of each lake (one strip for each lake).
- Twenty "Bob" (they could be washers, corn kernels, or peanuts...).
- A pen or pencil.

**Teacher's Note**  
Each of the five expert groups will need:

- Access to a map of the Great Lakes.
- A copy of the *Great Lakes data* (other resource books are optional).

Groups should each have a large working surface that all can gather around.

Great Lakes Overview  
COSEE Greatest of the Great Lakes—A History of Great Lakes  
A5  
ES-EAGLS—Land & Water Interactions in the Great Lakes  
©The Ohio State University 1997.

## Appendices

### APPENDIX A

#### Significant Others

Additional Recommended Great Lakes Activities in Brief

Category	Activity	Grade/Subject	Source
Life in the Water	Web of Life Game	3-8 S	Zebra Mussel Mania
	Mussel to Mussel	3-8 S, SS, LA	Zebra Mussel Mania
	Food Chains	4-8 S	GLEP
	What Factors Affect the Size of a Natural Population?	6-12 S	ES-EAGLS Life in the Great Lakes, pp 75-86
	Something's Fishy	3-6 S, A	Paddle-to-the-Sea
	Family Reunion	3-8 S, M	Zebra Mussel Mania
	Where Have All the Lake Trout Gone?	4-12 S, M	The Life of the Lakes
Habitat	Fish Habitat	4-8 S	Project FLOW
Climate & Weather			
	Studying Thermal Stratification	7-12 S	Water on the Web
Hydrology	Aerial Photographs	6-12 S	Watershed Science for Educators
	What Makes Water Healthy?	4-8 S	Project FLOW
Coastal Processes	What Causes the Shoreline to Erode?	4-8 S	ES-EAGLS Land & Water Interactions
Issues	Great Lakes Grief	5-8 S, LA	ESCAPE
	All Clogged Up	3-8 S, M	Zebra Mussel Mania
	What Do Scientists Know About Invader Species and the Effects that Global Climate Change Will Have on Them?	4-6 S	GLIMCES
	Invader Species of the Great Lakes	4-8 S	ESCAPE
	We've Gotta Survive Rap	4-7 S, A	ESCAPE

Subject Key: S = Science, SS = Social Science, M = Math, A = Art, LA = Language Arts

H1

This collection includes 41 classroom activities grouped into seven broad themes:

- Great Lakes Overview
- Life in the Water
- Habitats
- Climate & Weather
- Hydrology
- Coastal Processes
- Issues

The exemplary activities in *Greatest of the Great Lakes* were selected from a wide array of curriculum sources. They are based on a set of criteria to best meet teachers' needs.

Most of the activities stand alone; however, several activities have been grouped into sets that work best when conducted sequentially.

"Significant Others" (Appendix A) provides you with additional activities that you may wish to investigate for further use in your classroom. They are organized by topic category, grade level, subject, and source. In addition, brief synopses are included to help in your selection process.

"Sources for the *Greatest of the Great Lakes Activities*" (Appendix B) describes the source materials for all activities in *Greatest of the Great Lakes* and provides information on how you can obtain them.