



The GREAT Lakes

Activity Overview: In this activity, students will look at the size of the Great Lakes with respect to the earth. They will see how volume compares to surface area. They will also look at the elevation differences between each lake, and the direction of water flow as a result of these elevations. Finally, they will understand the importance of the Great Lakes system to people and ecosystems in North America.

Objectives:

The elementary students should learn to:

- Become familiar with the size, depth, volume, elevation and flow of the Great Lakes
- Understand that the Great Lakes are all connected in a large watershed system that flows into the Atlantic Ocean

Materials:

- 5 Lake Containers
- 5 Lake cutouts
- 1 map of the Great Lakes
- Elevation blocks
- 5 “What Lake Am I?” cards
- Pipe cleaners

Setup:

- Set out the map and put the Lake cut-outs beside it (Part 1)
- Keep the Lake containers, blocks, and ‘What Lake Am I?’ cards together nearby (you will match the pieces with the students)

Takedown:

- Disassemble the blocks and remove the containers from the map.
- Pack up the materials as you found them.

Safety: Ensure students do not throw any of the containers or blocks

Vocabulary:

Elevation: the geographic height (i.e., the height of the lake surface in relation to the height of the ocean)

Surface Area: the total area that the surface of an object occupies (i.e., how big a lake looks on a map)

Volume: the amount of three-dimensional space enclosed by some closed boundary (i.e., how much water the lake holds)

*Before you start your presentation check with the teacher or chaperone that the entire group is present and ready to start. Remember that **doing** an experiment and **discovering** the answer is more powerful than watching and listening to someone, so try to involve as many children as possible.*

Part 1: Discussion

Say: “Welcome to The GREAT Lakes. We will be learning about the volume, surface area and elevations of our Great Lakes and why they are important to us. Always remember to keep our lakes and well water pollution-free because they are important to people and ecosystems in North America.”

Ask: “What are the Great Lakes important for?”

Answers:

- Transportation
- Wildlife
- Drinking Water
- Affect weather
- Recreation (i.e., swimming, boating)
- Irrigation (i.e., watering agriculture)

Show the map of the Great Lakes and **say:** “Let us name each Great Lake by matching these lake cutouts with the shapes on the map” (You will have 5 laminated and labelled cutouts of the lakes. The shape of the cutouts will match the shape of the lakes on the map. Let the students do the matching – help if needed).

Part 2: ‘What Lake am I?’ Game

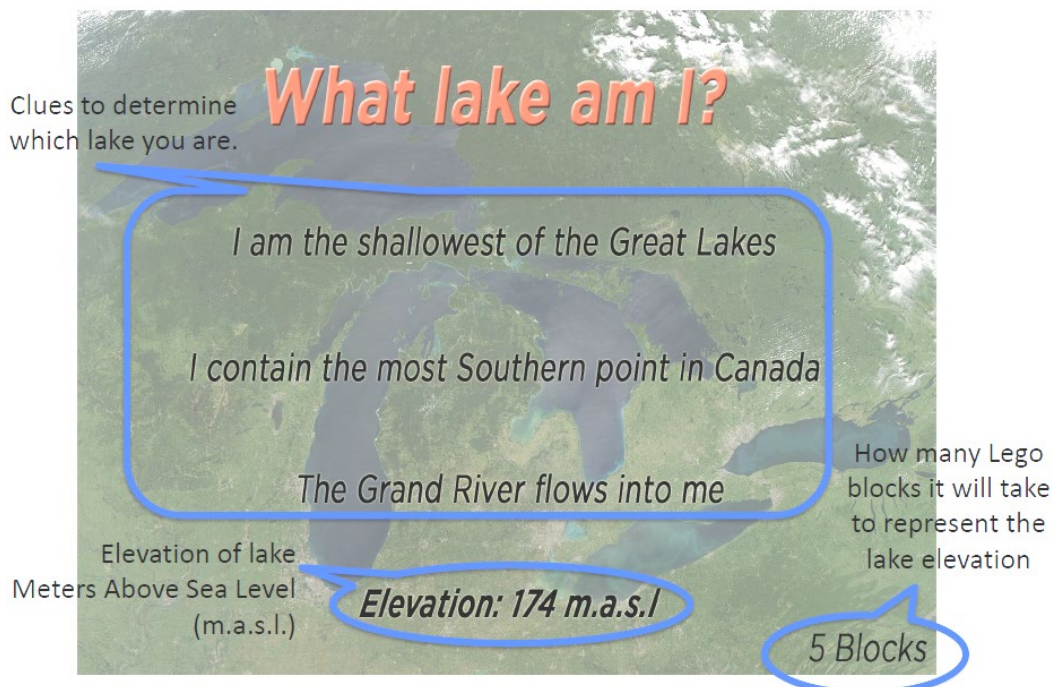
Say: “Now we are going to play the ‘What Lake am I?’ game. I am going to create 5 groups.” Divide students up into 5 different groups. Place all the containers beside the map.

Say: “I am giving you each a ‘What Lake am I?’ card that has some information on it.” Distribute one card per group.

Say: “Using the card clues, map and containers, I want you to try to figure out what lake is yours in your group.”

Have each group take turns picking the container they think is theirs and placing where they think it should be on the map. Answer key provided at the end of this script. Information on clue cards explained in diagram below:

Card Areas of Information



Make corrections as needed by referring to the answer key and photo provided below.

Part 3: Surface Area, Volume & Elevation

Say: “As we can see, even though Lake Erie looks bigger than Lake Ontario, Lake Ontario actually holds 3 times as much water. So Lake Erie has a bigger surface area because it looks bigger on a map, but Lake Ontario has a bigger volume because it is deeper. Now elevation is talking about where the lake surface is compared to the ocean.”

Ask: “So if we look at these Lake containers, which has the highest elevation?” (Answer: Lake Superior)

Ask: “Which has the lowest elevation?” Let’s place them in order from highest elevation to lowest elevation and use the blocks to represent how close they are to the ocean.”

Guide:

Great Lake	How many blocks
Lake Superior – 183m	6 blocks (7 blocks including base)
Lake Michigan – 176m	4 blocks (5 blocks including base)
Lake Huron – 176m	5 blocks (6 blocks including base)
Lake Erie – 173m	4 blocks (5 blocks including base)
Lake Ontario – 74m	0 blocks (1 block on base)

Ask: “So if we look at the Great Lakes, which way would the water flow?” (Answer: towards the Atlantic Ocean)

From	To
Superior	Huron
Michigan	Huron
Huron	Erie
Erie	Ontario
Ontario	Atlantic Ocean

Ask: “How would water make its way from Lake Superior out to the Atlantic Ocean? Let us show these connections using pipe cleaners.” Continue through all the lakes until they are all connected by pipe cleaners.

Part 4: Wrap-up:

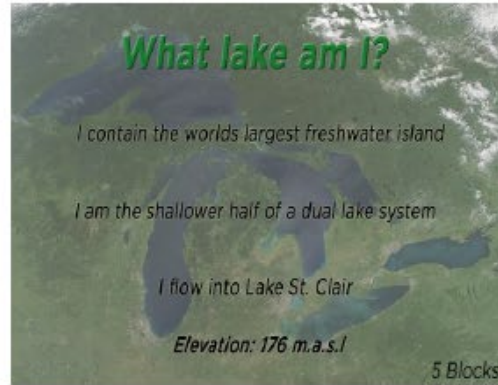
Specific Reminders for Students:

- The Great Lakes are very important to us for many different reasons.
- Just because a lake may look bigger on the map, it does not mean it has more water in it
- Keep our lakes and well water pollution-free because they are important to people and ecosystems in North America.

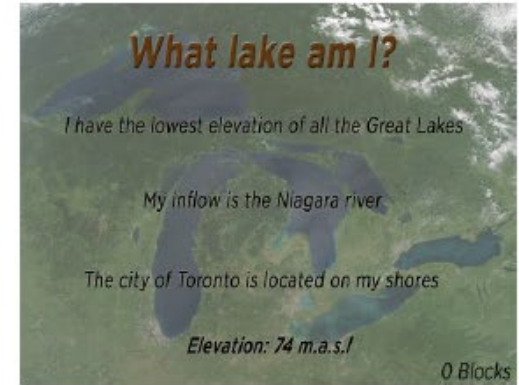
Answer Key



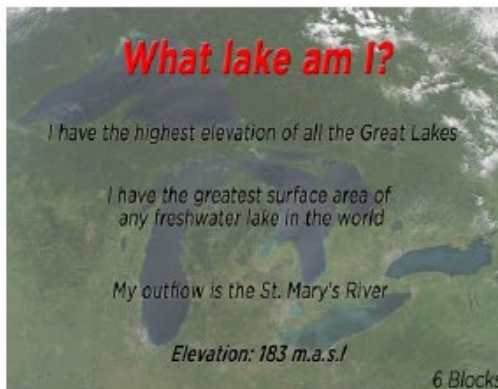
Lake Michigan



Lake Huron



Lake Ontario



Lake Superior



Lake Erie

