# Under the Great Lakes: NYSSLS Alignment

Teacher guide for the one-page student worksheet at mrsajdak.com/maps/great-lakes. Environmental Science or Earth Science, grades 9 to 12. The worksheet is low-write: tick boxes, short blanks and one or two written lines. The answer key is kept off the website; write to rsajdak@buffaloschools.org for it. © 2026 Ryan Sajdak. Free to use, share and change under CC BY-NC-SA 4.0 (creativecommons.org/licenses/by-nc-sa/4.0): give credit, do not sell it, share your version the same way.

## What it is

A depth map of all five Great Lakes that students can tilt. The depths are NOAA's 3 arc-second bathymetry grids (about 90 m cells), measured below each lake's low water datum. Picking a lake shows its depth at the deepest; moving the cursor reads the depth anywhere; Shift and drag tilts the view into the basin.

## Objectives

Printed on the worksheet, each with a box to tick.

| I can | Questions |
|---|---|
| I can read depths from a map and compare the five Great Lakes. | 1 to 4 |
| I can use a tilted map as a model to find where a lake is deep. | 5 and 6 |

## Standards

**Core idea touched: ESS2.C** The roles of water in Earth's surface processes. The sheet does not assess a performance expectation by itself. It practices reading a real data set and comparing quantities, and it is a useful opener for any lesson on the Great Lakes, freshwater systems (aquatic ecosystems) or water resources.

The science and engineering practices and crosscutting concepts below are named in New York State P-12 Science Learning Standards language, and each one is printed on the worksheet at the part where students use it.

## Part by part

| Part | Practice (SEP) | Concept (CCC) | What students do |
|---|---|---|---|
| **1. Read the depths** | SEP 4 Analyzing and interpreting data | | Read the deepest depth of each lake and name the deepest and the shallowest. |
| **2. How big is the difference?** | | Scale, Proportion, and Quantity | Divide the deepest depth by the shallowest. A worked example with other numbers sits above the blank. |
| **3. Use the model** | SEP 2 Developing and using models | | Tilt Lake Erie to find which end is deep, then say what the map shows about the water near Buffalo. |

## Running it

About 15 minutes, one device per student or pair. A mouse or trackpad is needed for the cursor depth and for Shift and drag. The page loads map tiles as students move, so the first view of each lake takes a moment. Students outside western New York can swap "Buffalo" for a city on their own lake.