

# Pre-Visit Lesson 6: “State of the Lake: Understanding Clean Water Using Scientific Data”

**Grade:** 6-8

**Discipline:** Science

**Length:** 1 Hour

## **Essential Question(s):**

1. How clean is the water in Lake Champlain?
2. How do I use graphs and charts to learn about scientific data?

**Objective:** Students will learn more about the health of Lake Champlain using scientific data and graphs.

**Assessment:** Completed worksheets can be collected to assess understanding.

## **Materials/Resources:**

- [State of the Lake Report 2024](#)
- [Worksheet](#)

## **Vocabulary:**

- Mercury
- Pathogens
- Cyanobacteria
- Cyanotoxins
- Nutrients
- Concentration
- Phosphorous
- Contaminants
- Infrastructure

**Lesson Summary:** This lesson uses the 2024 State of the Lake Report to expose students to looking at scientific data in graphs and charts. Students will work in groups to read about a different threat to Lake Champlain and fill out the attached worksheet, which asks them to restate information in the reading and draw conclusions from what they’ve read.

## **Outline of Lesson**

***Introduction (5 minutes)***

- Pull up the State of the Lake Report to show students. You can either use the PDF linked in the materials section or hard copies, which you can request from the Lake Champlain Basin Program. Explain that this report is published every three years and is intended to teach the public about the health of Lake Champlain.
- Ask students what kinds of information they think these scientists are looking at. You might get answers such as invasive species, pollution, etc. After students have made their suggestions, ask them if they think that Lake Champlain is healthy compared to other lakes around the world.

***Main Lesson:***

- Have students open up the State of the Lake to page 6. As a group, go through pages 6-8 (from the beginning of the section to the heading “Pathogens”). This section will give you some background information about what the water in Lake Champlain is used for and what scientists are looking at. Stop to look at each of the figures in depth. Depending on your students familiarity with graphs and charts, you can point out key features and how to read them.
- Split students up into five (or more) groups. Each group will need to read a section focused on a threat to the lake. The sections have blue headings and are: Pathogens, Cyanobacteria, Nutrients, Contaminants, and Flooding. Each section contains scientific data laid out in tables and graphs that students will need to analyze.
- Each group should read their assigned section and fill out the worksheet. This worksheet will ask them questions from the reading, to analyze one of the figures in their section, and to draw conclusions based on what they’ve read.
- After each group has finished, you can have them orally present what they’ve learned and/or hand in their worksheets.