



Unit 1: Dead Zones

Lesson 2, Activity B: Interpreting Lake Erie Temperatures

Data Sheet (Key)

1. Compare water temperatures at buoy 45142 on June 8 & November 15.

June 8

- a. What is the temperature at the surface? **61 degrees F**
- b. At the bottom? **51 degrees F**
- c. Is the water profile stratified? **yes**

November 15

- a. What is the temperature at the surface? **53 degrees F**
- b. At the bottom? **53 degrees F**
- c. Is the water profile stratified? **no**

2. What has changed between June 8 & November 15? Why?

The lake is no longer stratified. Water at the surface is in contact with cold air and sinks, mixing the lake. The lake has 'turned over' and oxygen and nutrients are replenished throughout the water.

3. Compare water temperatures at buoy 45142 on November 15 & January 10.

November 15

- a. What is the temperature at the surface? **53 degrees F**
- b. At the bottom? **53 degrees F**
- c. Is the water profile stratified? **no**

January 10

- a. What is the temperature at the surface? **38 degrees F**
- b. At the bottom? **37 degrees F**
- c. Is the water profile stratified? **no**



4. What has changed between November 15 & January 10?
Water temperatures have decreased.
5. In the spring as weather warms, surface temperatures rise. Graph (using space below or graph paper) data from buoy 45142 on April 19 and answer the question below. Include title and date, label x-axis and y-axis. **(See Example graph below)**

What has changed by April 19?

Surface temperatures are warming.

Water temperature vs. depth Buoy 45152 April 19, 2008	
Depth (m)	Temperature (°F)
0	42
5	42
10	39
15	39
20	39
25	39

6. Compare water temperatures at buoy 45142 on April 19 (your graph) & May 29. What has happened to water temperatures?
Surface and bottom water temperatures are the same. Wind can mix the lake and oxygen reaches the bottom of the lake.
7. Label the epilimnion, metalimnion and hypolimnion on your graph.
Epilimnion is the vertical portion at the top of the graph. Hypolimnion is the lower portion of the graph. Metalimnion is the section in-between.
8. In addition to time of year, what variables do you think affect stratification in lakes?
Discuss ideas as a class - wind speed, wind direction, water depth, orientation of the lake



Example graph

