

INVESTIGATING THE EFFECTS OF TEMPERATURE ON THE AMOUNT OF DISSOLVED OXYGEN IN WATER

Suggested Grade Level Upper Elementary and Middle School

INTRODUCTION:

Fish, invertebrates, and other aquatic animals breathe oxygen that is dissolved in water. Without this oxygen, they will suffocate. The amount of oxygen that can be held by water depends on, among other things, the temperature and salinity of the water.

Does saltwater hold less oxygen than freshwater?

Does the temperature of water effect the amount of oxygen water will hold?

The table below shows the temperature range and the minimum amount of Dissolved Oxygen in the water necessary for each animal to be able to live.

Animal	Temperature Range (°F)	Minimum DO (mg/L)
Trout	41-68	6.5
Smallmouth Bass	41-82	6.5
Perch	40-80	5.0
Bay Anchovies	50-77	3.0
Blue Crab	50-77	3.0
Catfish	68-77	2.5
Carp	50-77	2.0
Mosquito	50-77	1.0
Marine Worms	50-77	1.0

OBJECTIVES: In this field experiment, you will

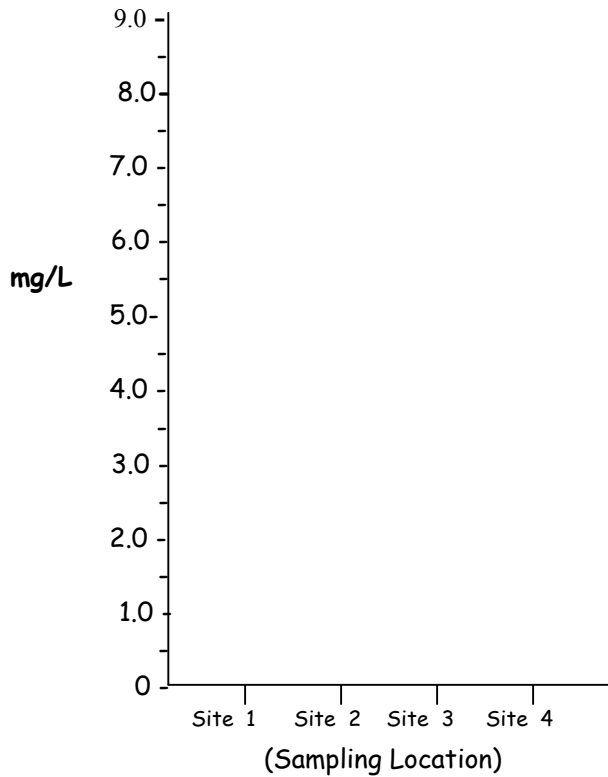
- use a Palm Handheld computer with probes to measure temperature and dissolved oxygen in selected water sources
- study the effects of temperature on the amount of dissolved oxygen in the water.
- predict how the quantity of dissolved oxygen effects aquatic life.
- compare the amount of dissolved oxygen in freshwater and saltwater.
- interpret charts and graph data.

PROCEDURES (TEACHER DIRECTED)

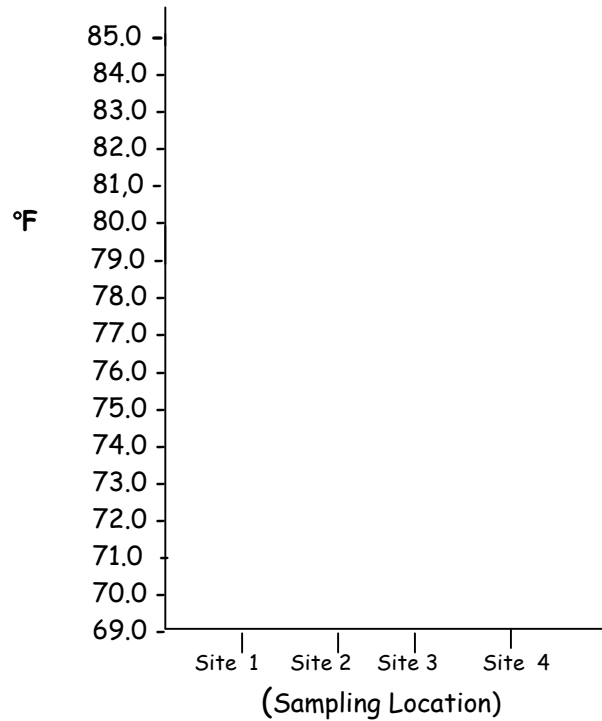
DATA TABLE	
Temperature (°F)	Dissolved Oxygen (mg/L)
(Site 1)	(Site 1)
(Site 2)	(Site 2)
(Site 3)	(Site 3)
(Site 4)	(Site 4)

USE YOUR DATA TO COMPLETE THE BAR GRAPHS BELOW

DISSOLVED OXYGEN



TEMPERATURE



RESULTS:

Do you see a relationship between the amount of dissolved oxygen in the water and its temperature?

Write a brief explanation of your results below.