

Name _____ Class _____ Date _____

Dissolved Oxygen Lab

Background: This experiment will help you understand one of the most important properties of water-that it holds oxygen! You will be testing to see how much dissolved oxygen is present in water at two different times. The water sample that you receive has been boiled for twenty minutes and then sealed in a jar by your teacher. This boiling process should remove all the dissolved oxygen from the water-but, it is up for you to find out if that is true! Follow the procedure below to complete the test.

Before you begin: Write a prediction: which do you think will have more oxygen, water that has been boiled or water that has been boiled and then shaken up? Why?

Copy this data table in your lab notebook:

	1	2	3	4	5	6	7
Dissolved oxygen (mg/L) in newly opened jar							
Dissolved oxygen (mg/L) in jar after shaking							
Difference (mg/L)							

Procedure:

1. Obtain a dissolved oxygen test kit from your teacher.
2. Follow the directions that are contained in your kit for finding the dissolved oxygen. The first test you will do will be a trial to help you understand how to use the chemicals. Remember to use appropriate safety techniques when using chemicals. Write down your results for the trial on the board.
3. Now, you will test the dissolved oxygen in the first sample, which is water that has been boiled and then placed in a jar. Carefully open the jar and pour the water sample into the testing bottle. Do this very slowly; you don't want to add oxygen by mixing the water with the air. Perform the DO test, and record your results.
4. Now, pour about half of the water from the jar down the drain. Cap the jar and shake it vigorously for about 3 minutes. Then, perform the DO test again. Record your results.
5. Copy down the results from the other groups in your class. Then, compute the difference between the newly opened jar and the jar that you shook.

Discussion Questions:

1. Describe what you observed when your teacher showed you a cup of water. What formed on the sides? Why did this happen?
2. How much change in dissolved oxygen did you measure in your water sample? What was the average change for the entire class?
3. Make a line graph showing the dissolved oxygen for both jars.

4. Explain the difference in dissolved oxygen in the sample before and after it was exposed to the air.
5. How did your results differ from your prediction? If your results were different, why did this occur?
6. Did you get similar results as your classmates? If not, why? Did you make any mistakes, or did anything happen that might have given you different results from your classmates?
7. What are some other ways that dissolved oxygen could enter the water in a river?
8. Why is dissolved oxygen important for a river ecosystem? What would happen to the aquatic organisms if the dissolved oxygen levels became too low?