

In the last activity you looked at how oxygen gets into water. Since DO is so important to aquatic life, it's important to find out what makes its levels change. In this activity you'll investigate some of the factors that might be responsible.

What's causing DO in Cascade Brook to change?

1. Make a graph of DO in Cascade Brook over a period of days, not months. Use at least 7 days, but no more than 14, sometime during the summer (May to mid-September). Copy and paste the graph into your Journal.
2. Do you think the shape of the graph shows that plants in the Brook are releasing DO as they photosynthesize? Remember, plants begin releasing oxygen in the morning when the sun rises and they don't stop releasing it until sunset. If you need a reminder of what that looks like, open A Daily DO Cycle Stud and compare that graph with the graph you just made.
3. If you think that plants are not causing the changes in your graph, what else might be influencing DO in Cascade Brook? Use the Graphing Tool to compare the other Cascade Brook parameters with dissolved oxygen over the same time period. Do any of them show a positive correlation (a pattern similar to the DO graph)? Do any show a negative correlation (the opposite pattern)?
4. If you find a parameter that seems to have either a positive correlation or a negative correlation with the DO, then use the Graphing Tool to construct a scatter plot with those two parameters. A rising regression line means that there is a positive correlation, a falling regression line means there's negative correlation.
5. Once you find a parameter that correlates with DO, try making a scatter plot again but using other dates. Does the correlation you found continue? What about at different times of the year?

If you don't find a parameter that seems to be causing the patterns in your graph, try experimenting with different dates. And don't worry if your results are different from those of other students! Remember, the natural environment is complex, with many variables. There's seldom one simple explanation for the things we observe.

6. Write a report in your Journal describing your investigation of **What Factors Influence DO in Cascade Brook?** Include the following topics in your report:

Procedure

What steps did you take to carry out your investigation? (Your procedure might not be the same as someone else's.)

Results

What factor or factors seem to influence DO in Cascade Brook, and in what way? What evidence did you find for these conclusions (include any graphs that support your conclusions here.)

Discussion

What else did you notice as you investigated the graphs? Did you run into any problems—such as evidence that wasn't consistent? Is there any other information about Cascade Brook that would have been useful to have?