

Explore Dissolved Oxygen *Handout*

Part 3 of 4 in the "Exploring the Watershed Atlas" Series

INSTRUCTIONS: Go to the website: www.Hillsborough.WaterAtlas.org

Go to the Research tab > Metadata. Read the Summary of Data in the Atlas to get an idea of the scope of the Watershed Atlas project. If there is known scientific data recorded about a Hillsborough County water body, it is here! You will download data and make a graph to better understand the trends.

1. Go to the Data Download tab and follow the steps.
Step 1 > Lake Thonotosassa > Next
Step 2 > Water Quality (col. formatted) > Next
Step 3 > Select All Stations > Next
Step 4 > Five Year Date Range > Next
Step 5 > Excel file > Download Data

Windows: Follow the directions to download the data.
Mac: Control click.

Save the Excel file as Thonotosassa Lake Data.

2. The Excel file shows columns for many water test parameters. Scroll to the right and look at the data sets in the file. One of the most important is dissolved oxygen (DO mg/l).
3. Highlight the "sample_dates" column and copy to a new worksheet (Excel Menu: insert > worksheet). Paste the dates.
4. Rename the new worksheet: Right click (Mac: Control Click) on the tab at the bottom of the sheet and rename.
5. Return to the data sheet and select the Dissolved Oxygen (DO_mgl) data and paste next to the date column.
6. Notice the dates are not consecutive. Before you make your graph, highlight dates and DO, then Go to Data on the toolbar and sort Column A. The DO (dissolved oxygen) will sort with the dates, and you can make your graph.
7. Use the Graph Wizard (Windows) or Chart Wizard (Mac) to make a line graph with your data. In step three be sure to include a title and label x and y. Place the legend at the bottom of the graph and include major gridlines on both the x and the y axis.
8. Go to the Excel menu Graph (Mac: Chart) > Location > as new sheet. You can edit the graph using the Excel menu: Graph (Mac: Chart) > Chart Options.
9. Copy the graph and paste it into a Word document. Research and write a paragraph about why dissolved oxygen is so important to lakes and rivers. Use a browser (www.google.com or www.ask.com) to get information. (Hint: Use the history tab in the browser to easily switch between your page on the watershed website and your search page.)

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10. What is the relationship between dissolved oxygen and temperature? Look it up and write a second paragraph. Give details. (Hint: Look at a soda.)

11. There are many reasons for changes in dissolved oxygen in a lake. Temperature is only one reason for DO to fluctuate. However, see if you can find a broad relationship. Lake temperatures are generally higher in the summer. Use a highlighter pen and highlight the sections on the graph between June and September of each year. Do the lowest levels of Dissolved Oxygen occur, in the summer or other seasons? _____

12. What is the most likely cause of the daily fluctuation of dissolved oxygen levels?

Name:

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