

Phytoplankton Monitoring Lab (HAB Lab)

Grade Level: High School and Above

Summary: Phytoplankton play a vital role in the marine ecosystem; changes in diversity and abundance can affect the entire food chain, including humans. Students will observe and analyze phytoplankton in water samples collected off of Key Largo. Students will work in groups to identify phytoplankton species, determine if toxic and participate in NOAA's Phytoplankton Monitoring Network.

Program Objectives:

- Students will have an understanding of the basics of phytoplankton, why we study phytoplankton and the impacts HABs can have
- Students will be able to differentiate between the two main groups of phytoplankton: dinoflagellates and diatoms
- Students will be able to identify 5 different species of phytoplankton
- Students will participate in data collection for the Phytoplankton Monitoring Network

Concepts Covered:

- Zooplankton versus phytoplankton
- Benefits of healthy phytoplankton communities
- Sources and impacts of harmful algal blooms
- Dinoflagellates and diatoms and the identifying characteristics of each group
- Phytoplankton species identification
- Importance of monitoring phytoplankton

Vocabulary: plankton, zooplankton, phytoplankton, dinoflagellate, diatom, harmful algal bloom, biomagnification, toxin, red tide, monitoring

Procedure: The hands on portion of the lab will be preceded by a powerpoint presentation where students will learn about plankton, the importance of phytoplankton in the marine ecosystem, sources and impacts of HABs and how to identify phytoplankton. Students will then participate in data collection for NOAA's Phytoplankton Monitoring Network by filtering and analyzing water samples collected from water adjacent to Key Largo. Each group of students will have a compound microscopes with screens to utilize for analysis.

Extensions: All data will be entered into NOAA's program database as well as the MarineLab database. All data is accessible to be used in home classroom.

Resources: <https://products.coastalscience.noaa.gov/pmn/>



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