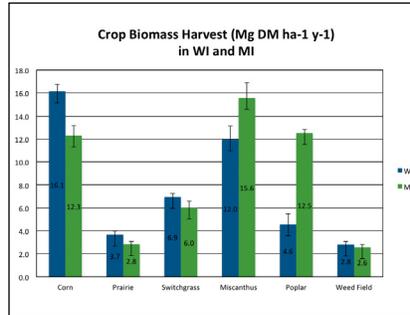




An Introduction to GLBRC Data Dives



What they are

GLBRC “Data Dives” guide students through analyzing and interpreting simplified data sets collected by Great Lakes Bioenergy Research Center (GLBRC) researchers. We based these activities on the “Data Nugget” model developed by educators and scientists at the W.K. Kellogg Biological Station, MI (<http://datanuggets.org/>). Students are given some brief background about the questions or problems under investigation, the hypotheses, the research methods and a simple data table. Then students are given the task of constructing an argument that answers the research question using the data to support their claims.

Purpose

GLBRC Data Dives provide instructional materials to address the following teaching objectives:

- Nature of Science: students follow the steps of real researchers investigating current questions and problems. Through analyzing actual data to answer research questions, students engage in the scientific process and see how the scientific and engineering practices in *Next Generation Science Standards* are applied in real scenarios.
- Science and Engineering Practices: the activities require students to learn and apply numerous science and engineering practices from the Next Generation Science Standards, including asking questions, analyzing and interpreting data, and engaging in argument from evidence.
- Applying core science concepts: students apply core concepts and ideas to explain observations from experiments.
- The role of science and engineering in addressing modern societal issues: the research problems illustrate how solutions to societal issues like global warming come from the collective work of many scientists and engineers.

How to use them

- As stand-alone activities: the Data Dives can be used independently from other activities as to introduce students to the work of current researchers and to practice analyzing and interpreting data.
- In conjunction with research stories and hands-on activities: Data Dives can be paired with a related “research story” which provides students with a window into the day-to-day work of the featured scientists and engineers. The Data Dives can be used with related hands-on student investigations and activities that mirror the GLBRC research in the classroom. See <https://www.glbrc.org/education/classroom-materials>.