

Data Scavenger Hunt

Investigating Water Temperature and Environmental Phenomena at NERR Reserves (Grades 6-12)

Overview

Students begin their exploration of real-time environmental data using the National Estuarine Research Reserve (NERR) data portal to collect information on air and water temperatures at Reserves across the country. They graph and interpret these data and offer explanations for the change in temperatures as one moves further away from the equator, as well as offering explanations for the difference between water temperatures on the east vs. west coast. The continue with a deeper dive into the NERR data portal with a “scavenger hunt” to find natural phenomena (e.g., solar eclipse, hurricanes) that have been captured with real-time data. With this new ability to navigate the NERR data portal, students further explore, collect and interpret larger datasets of water temperature at four NERRS Reserves located on the east and west coasts. Using these data, students combine reasoning and conceptual knowledge to construct evidence-based explanations for climate patterns found across the US.



Learning Outcomes

Students will be able to:

- Access and navigate the NERR data portal and collect real-time weather and water quality data;
- Describe, using evidence, how coastal water temperatures differ on east vs. west coasts of the US, and how water temperature changes with distance from the equator (i.e. latitude).
- Use the interactive map and graphing tool to generate visualizations of water temperature (or other environmental parameters) at estuaries across broad geographic ranges; and
- Work independently to navigate and explore the NERR online data portals and investigate questions using environmental data as evidence.

Data Resources

- This activity has students engage in explorations of real-time and archived water quality and weather data collected as part of the National Estuarine Research Reserve (NERR) System Wide monitoring Program (SWMP).

NGSS Connections

- **Disciplinary Core Ideas:** ESS.2.A Earth Systems; ESS2.D Weather and Climate
- **Science and Engineering Practices:** Asking questions, Analyzing and Interpreting Data, Constructing Explanations
- **Crosscutting Concepts:** Cause and Effect



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