Scientists at Sea

SCIENTIFIC INQUIRY ABOARD THE GUNDALOW

Grade 8 - Adult

Each Scientists at Sea Program starts with a 1-hour classroom visit where students gain background knowledge needed to plan their experiment. By exploring the scientific process and using students own knowledge and curiosity, students work in small groups to design a scientific hypothesis. These hypotheses become the guide for planning their scientific exploration on the Gundalow.

During the 3-hour sail on the Gundalow, students work in 3 watch groups to gather data for their scientific research projects. Our staff use the time onboard to engage students in deploying the scientific equipment and analyzing the results. In addition to the deployments, we also offer opportunities for students to set the sail, steer the boat, do an otter trawl and learn about the role of the Gundalow in the Piscataqua Region.

Following the sail, a member of our crew comes back into the classroom to help students synthesize their data. Each group examines the data collected while on the Gundalow and makes conclusions on their research project. Classes are encouraged to present their research to their school or community through displays, posters or presentations

Our programs and activities are correlated with state frameworks and closely aligned with principles of both estuarine and ocean literacy. Your students will come away from this experience with a greater ability to problem solve, think critically, and work as a group

Frameworks, Standards and Principles

Next Generation Science Standards

- HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.
- HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.
- HS-ESS2-3. Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.
- HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

- HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

- HS-ESS3-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

Estuary Literacy

- Principle 2: Estuaries are dynamic ecosystems with tremendous variability within and between them in physical, chemical, and biological components.
- Principle 3: Estuaries support an abundance of life, and a diversity of habitat types

Ocean Literacy

- Principle 5: The ocean supports a great diversity of life and ecosystems.