High School Programs

POWER POTENTIAL : OCEAN ENERGY

Ocean currents, tides and waves are potential sources for renewable energy. In this program students investigate basic oceanography concepts, engieering and electricity principles. Students make investigations using a wave tank, learn concepts through hands-on activities and engineer a device to attempt to capture energy from a renewable source.

PSc.3.1, PSc.3.2, PSc.3.3, EEn.2.8, Phy.2.1, Phy.2.2, Phy.2.3, Phy.3.2

WATER IN MOTION : ORBITAL WAVES

Students explore concepts of energy transfer through orbital waves. Using a wave tank students observe different characteristics of waves, collect data, and use that data to solve mathematical equations to figure out the energy available in a wave, wave steepness, etc. They also investigate oceanographic equipment used to measure ocean waves and currents.

PSc.3.1, PSc.3.2, Phy.2.1, Phy.2.2

AMAZING OYSTERS

Oysters play an important role in the Albemarle and Pamlico estuarine system. Students investigate the biological relationships found among the shells of an oyster reef, identify different species of aquatic life, and measure oyster growth and size as they explore an oyster clump straight from the Croatan Sound.

Bio.2.1, Bio.2.2, Bio.3.5, EEn.2.2, EEn.2.4

COLLABORATIVE PROGRAM

JENNETTE'S PIER
NAGS HEAD, NC

RENEWABLE ENERGY: THE FUTURE OF POWER

UNC CSI and Jennette's Pier have teamed up to offer a unique alternative energy program for 5-12 grade students. This program educates students about wind, solar and ocean energy through site visits to Jennette's Pier and UNC CSI. Students learn how each site utilizes or researches the mechanics of creating electricity from kinetic energy. Students engineer a device that creates an electric current from wind, solar or ocean waves using what they have learned. 6.P.1, 6.E.2.2, 7.P.2, 8.P.2, 8.E.1

PSc.3.1, PSc.3.2, PSc.3.3, EEn.2.8, Phy.2.1, Phy.2.2, Phy.2.3, Phy.3.2

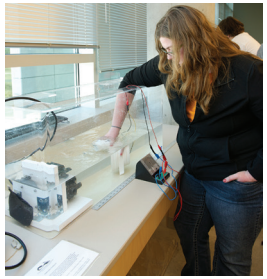
Coastal Studies Institute
UNIVERSITY OF NORTH CAROLINA

5-12 Education Programs

Phone: 252-475-5400 | Fax: 252-475-3545 | http://csi.northcarolina.edu
850 Highway 345, Wanchese, NC 27981

Education Programs

Founded in 2003, the University of North Carolina Coastal Studies Institute (UNC-CSI) is an inter-university marine science research and education institute located on Roanoke Island, North Carolina. The K-12 programs offered at UNC CSI align with NC Essential Standards and utilize the research of the faculty and scientists of the Institute to provide students with a unique, engaging experience that will make scientific concepts relevant. Programs include field based programs and laboratory investigations. There is a $10 program fee per student.



SUSTAINABLE COASTAL COMMUNITIES

Students investigate promoting economic growth on the Outer Banks while preserving fragile natural resources and valuable cultural heritage. They explore the needs of estuarine ecosystems as well as the needs of a successful Outer Banks community. Students design a community through a mapping process which includes utilizing sustainable designs, alternative energies, scales and templates. This program is successful with middle and high school students.

5.L.2, 5.E.1, 6.E.2, 8.E.1, Bio.2.1, Bio.2.2, EEn.2.2, EEn.2.4, EEn.2.7, EEn.2.8

Contact David Sybert, K-12 Education Specialist at
dmsybert@csi.northcarolina.edu or 252-475-5451 for more information.

5-8 Grade Programs

OCEAN ENERGY POTENTIAL

Students investigate UNC-CSI's mission to extract energy from ocean waves, currents and tides. They participate in a series of hands-on activities, including the use of a wave tank, to understand the process of harnessing power from the ocean.

5.P.2, 6.P.1.1, 6.E.1.1, 6.E.2.2, 7.P.2, 7.E.1, 8.P.2, 8.E.1

MARINE TECHNOLOGY

This program highlights the technology used by UNC CSI scientists to collect oceanographic and estuarine data in often harsh, salty environments. Students investigate how research equipment is depolyed and will design and construct an observational buoy or Remote Operated Vehicle (ROV).

5.E.1, 5.L.2, 6.L.2, 7.E.1, 8.E.1

WHO LEFT THIS SHIP HERE?

Students "uncover" the identity of a mock shipwreck on UNC-CSI campus through observations and data collection. They study the unique maritime history of North Carolina, and shipwrecks as artificial reefs. Math, measuring techniques and graphing will be used to create a base drawing of what remains.

5.C.1, 5.G.1, 6.E.1, 8.H.1, 8.H.2, 8.E.1, 8.L.3

BRACKISH – AN ECOSYSTEM OF ITS OWN

Students investigate the unique local estuarine ecosystem through hands-on experiences. Activities could include water sampling, plankton sampling, seining, soil sampling and wetland mapping. Data collected will be combined with the data from other classes to create a record of the brackish water system.

5.L.2, 6.L.1, 6.L.2, 7.L.1, 8.E.1, 8.L.3

Field Experience

Lab Experience