



the stars  
challenge

Explore Our Shore  
Like Never Before  
Fall 2015



To Ava, Jack, Olivia, Meghan, Kirk, Sofia, Natasha, Tucker, Kellianne, Grace, James, Emily, Ruby, Kenneth, Eddy, Isabelle, and Lily:

It has been my privilege to be your teacher as we explored the shores of Sandy Hook this Fall! Throughout our course we studied sandy beaches and brackish marshes. We got wet, were sometimes cold, and even touched and handled things that we never thought we would! At each turn we explored diversity but in the end learned that similar factors govern the ecological importance of all environments, and that we as humans play an integral role in the survival and sustainability of our marine and coastal ecosystems.

You are all so talented and bright, and I look forward to hearing about your amazing accomplishments in the future (hopefully in the sciences!). My hope this semester was to not only engage you with a variety of thought-provoking experiences but to also help nurture in you a life-long sense of curiosity that would always keep you questioning, seeking, and looking at our world with a sense of wonder and awe to become stewards of the environment.

Best Wishes!  
Diana Burich

*In the end, we only conserve what we love. We will only love what we understand. We will only understand what we are taught. – Dr. Baba Dioum*





Learning about estuaries and local coastal animals during our first class. Students identify plankton with microscopes and practice measuring salinity using hydrometers and refractometers.









Sandy Hook is located at the mouth of New York Harbor. The convergence of ocean and estuarine currents in this area causes sand to shift and constantly changes the shapes and volumes of our beaches.





A chilly day at Horseshoe Cove on Sandy Hook Bay finds the class preparing equipment for sampling the nearshore (organism) community and studying invasive crab species.



Seining and beach combing as students discover ecosystem diversity.





Students maneuver 10 ft long nets to collect marine life from the benthos and nekton. Diversity is quantified to determine seasonal trends. Hoola-hoops become transects to keep track of crustacean study sites.









An outgoing tide yields a plethora of sea life, including a horseshoe crab to examine.







Halloween at Sandy Hook (notice Lily's witch hat and Sofia's cat ears!)









Students examine sand samples for grain size and shape, as well as mineral components. Data analysis produces a beach profile that visually displays minute increases and decreases in elevation on North Beach



Students collected surf clams at North Beach for our predator-prey study. Quantifying tables were made to determine ratio of shell size to moon snail predation. What were your results?





Balloon use is a great way to determine planetary wind patterns, or the Coriolis effect. Colored water, ice cubes and salt are used to examine the causes of ocean currents.



Dissections are useful tools in helping students understand anatomy and morphology. A spiny dogfish is examined during our last class. Thank goodness for Vicks VapoRub!





