



Education and Research: Testing Hypotheses

Lesson Plan: Effects of *Spartina Alterniflora* Plantings

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Summary

After collecting data from several planting sites over a period of time, students will determine the overall effects of *Spartina Alterniflora* including deposition and erosion rates. Visual images collected through the Duke unmanned systems program will be utilized in data collection and comparisons.

Key Concepts - [NGSS](#)

To be added

Objectives

Students will be able to:

- **Observe** and **identify** changes in planting areas due to erosion and deposition.
- **Record** real-time data over a period of time using Drone technology
- **Communicate** results through a collaborative presentation.

North Carolina Essential Standards for Science:

- 6.E.2.4 Conclude that the good health of humans requires: monitoring the lithosphere, maintaining soil quality and stewardship.
- 6.L.1.1 Summarize the basic structures and functions of flowering plants required for survival, reproduction and defense.
- 6.L.1.2 Explain the significance of the processes of photosynthesis, respiration and transpiration to the survival of green plants and other organisms.
- 6.L.2.1 Summarize how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within a food chain or food web (terrestrial and aquatic) from producers to consumers to decomposers.
- 6.L.2.2 Explain how plants respond to external stimuli (including dormancy and forms of tropism) to enhance survival in an environment.
- 6.L.2.3 Summarize how the abiotic factors (such as temperature, water, sunlight, and soil quality) of biomes (freshwater, marine, forest, grasslands, desert, Tundra) affect the ability of organisms to grow, survive and/or create their own food through photosynthesis.

Materials

- Google Earth
- Data from Drones - over the course of the year as able to assimilate

Procedure

1. (to be completed)

Assessment

- **Performance—**
 - Understanding of being a stakeholder in the community
 - Understanding of global changes from both man and nature
 - Collaboration between students in problem solving
- **Product—**
 - Presentation to “local stakeholders”
 - Graphing (line graph) of data
 - Culminating for unit/rate

Additional Resources

Please list any Websites, books, publications, or other resources that would be helpful for teachers or students preparing for this lesson.