



HUMANITIES AND THE SUNSHINE STATE

TEACHING FLORIDA'S CLIMATES

In partnership with the Florida Humanities Council

JUNE 19-23, 2017 GAINESVILLE, FLORIDA

ACTION PLAN TEMPLATE

Teacher(s): Kristin Wilson

Grade(s): Reg Bio/Hon Bio 9th 9th AP Bio 10th/11th/12th

Subject(s): This lesson might be best for Honors Bio, ^{and} but fits in well w/ Animal & Plant Behavior or Evolutionary-Adaptations

Title of Lesson:

Mangroves: Adaptations & Impacts

Learning Objectives:

- understand evolutionary adaptations of mangroves
- discuss mangrove "migration" due to changing climates
- ecological & political impact of mangrove migration

Standards Addressed:

• Sorry - I teach private school & don't understand or know standards

Lesson Outline:

- Adaptations of mangroves
 - ↳ black, red, white to dealing w/
 - O₂ exchange
 - NaCl exchange
- Climate change & mangrove Adaptation
 - ↳ Karen Ververberg graphs ← temp ↑ coastal flooding
 - ↳ mangrove "migration"
- ^{economic} Ecological & Political Impact of Migration
 - ↳ landowner effect - Q&A?
 - ↳ laws affecting mangrove preservation
 - ↳ local newspaper research

Systems thinking connection (learning habits and/or tools used):

Some type of "in-flux" concept map/thought diagram which allows students to unify not only the science data, but the economic, political & human components

maybe a policy structure diagram to understand if/how science plays into the laws re. mangr

Learning Strategies:

- research by students
- interviews of coastal land owners? - Active research
- using digital newspapers

Science Concept(s):

Evolution - Adaptations
 ← NaCl - how to deal
 ← water level rise - how to deal
Climate - change & adaptations
Plant - Form & Function - how to manage H₂O vs. NaCl

Humanities Concept(s):

Economic/
community - Is there a cost to mangrove "migration" to landowners/business owners
Political - what are the laws affecting mangroves
why are they in place

Student Assessment Strategies:

- review of systems thinking tool @ end
 ↳ critique
- next steps assessment - now that you know more about mangroves from a science/humanities perspective, what's a next step?

Benefit to my students:

Often we teach science & data, but not it's human impact - or how this all affects a bigger picture. This lesson/project is a step to a bigger picture.

Resources and Materials (supplies needed for activities):

- background science info
- field trip to mangroves
- info on mangrove law
- data on mangrove "migration"