Humanities and the Sunshine State What Sustains Us? жą. Florida Ecosystems in an Era of Rapid Change University of Florida 20-24 June, 2016 e' *\$ **ACTION PLAN TEMPLATE** Teacher(s): Mikic Temples and Madge Nanney. Grade(s): 7 H Subject(s): Science Title of Lesson: Tying it together To have students understand & help them Visualize the connections between feed webs, eccesystem changes, limiting factors t human impact Standards Addressed: SC. 7. L. 17.3 (limiting factors) SC. 7. L. 17.1 Food Web sc 7. E. L. human impact Lesson Outline: provide each student with a card that has the name of an organism or the name of a limiting factor or a human impact or an ecosystem change. · student will do rease vesearch on their card role - determing what it eats what eats it, where it lives what factors have negative positive affects, or who it pos/neg effects, what increases / decreases it, Or how it changes the ecosystems OF what this change causes to happen. · students in each group will create a system 2. introduce limiting factor, human impact, accsystem 3. There will be one group creating + 2 observinent

Guiding

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

creating a systems map w/ students yarn for connections & meter stick to show if it is a *opposite or same " relationship

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Learning Strategies:

cooreperative grouping. modeling. observation reflection

Science Concept(s):

fecd webs, limiting factors, human in pact environmental factors

Humanities Concept(s):

global citizenship

Student Assessment Strategies:

systems map a ketch of one observed reflection + connection questions

Visualize bigger connections and how systems change with introduction of different things

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Resources and Materials (supplies needed for activities):

Cards Meter shick yarn paper + colored pencils - over-

Tying it Together

Objective: To help students understand the relationships between food webs, ecosystem changes, limiting factors and human impact.

Standards: **SC.7.N.3.2** Identify the benefits and limitations of the use of scientific models.

SC.7.E.6.6 Identify the impact that humans have had on Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, and changing the flow of water.

SC.7.L.17.1 Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

SC.7.L.17.3 Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

Websites Resources:

https://soils.ifas.ufl.edu/wetlandextension/types/gulfcoastmarsh.htm http://myfwc.com/

Procedures:

- Print out copies of the cards for each Florida ecosystem. Cut out cards in order for each student to have one card. Divide students into 2 groups – one for each ecosystem. Each student will be given one card, the card will have their role in the ecosystem on it and two arrows attached with brads - a red one to indicate a negative change and a green one that will indicate a positive change.
- 2. Students will research their card and determine what role it plays in the ecosystem.
- 3. Organize the class with one group creating a large circle with the other group in the center. The group in the center will create a food web using yarn or string. The outer group will direct this part of the activity.
- Group 1 will make a circle and using string or yarn connect the organisms in the ecosystem. (This portion of the activity can be found online at: https://www.epa.gov/sites/production/files/documents/weboflifeactivity.pdf)
- 5. Once the group has created its ecosystem then you will direct a student who has a limiting factor, environmental change or human impact to enter the ecosystem and have the students make the necessary adjustments to the system. They will raise the arrow on their card to indicate if this change has a positive or negative effect on their role in the system.
- 6. After the first group is done they will trade places and Group 2 repeat number 3 and 4.
- 7. Students will complete the handout to demonstration their understanding.

Card Example:



Tying it Together

My ecosystem is: 1. Research your role ir		osystem is:	My role is:	
		Research your role in the ecosystem and record your information below.		

2. Sketch the food web you **observed** in the space below. Make sure your arrows show the correct direction for energy movement.

3. Give an example of one of the outside influences that affected the ecosystem you **observed** _______. What could be done to

prevent this from harming the ecosystem in the future?

Florida Fresh Water Ecosystem



Florida Marsh Ecosystem



Florida Fresh Water Ecosystem