



HUMANITIES AND THE SUNSHINE STATE

TEACHING FLORIDA'S CLIMATES
In partnership with the Florida Humanities Council

JUNE 15-29, 2018 UNIVERSITY OF FLORIDA

ACTION PLAN TEMPLATE

Teacher(s): Carol Goldenberg

Grade(s): 9-12

Subject(s): IB Bio

Title of Lesson: Evaluating Claims That Human Activities Are Not Causing Climate Change

Learning Objectives:

1. Evaluate scientific evidence of climate change
2. Calculate local trees as to the amount of carbon they are sequestering
3. Evaluate anthropogenic causes of climate change
4. Compare data of climates before and after the advent of humans
5. Evaluate reasons given by climate change deniers by comparison to scientific facts
6. Research what things are presently being done to mitigate climate change affects
7. Brainstorm ideas for what we could, as individuals, do to help lower our carbon footprint
8. Brainstorm community outreach ideas for taking action and spreading awareness.

Standards Addressed (if applicable):

IB Biology 4.4 Climate Change

Lesson Outline:

1. Lecture/Discussion: Greenhouse Gases and their effects on Global Climate
2. Lecture/Discussion: How Global Climate is affected by ocean currents
3. Lecture/Discussion: How melting glaciers are affecting ocean currents
4. Lecture/Discussion: Carbon sources & sinks
5. Lab: Measuring an area of trees and calculating the carbon they are holding
6. Discussion: What else in the environment would also be a carbon sink
What in the environment would act as a carbon source
7. Research & Present: What strategies are already being enacted to mitigate the effects of climate change in the future.
8. Brain storm ideas for a class project that we can do together to make a difference

Learning Strategies:

1. Research

2. Measuring and graphing the ability of local trees as carbon sinks
3. Collaborative work
4. Oral Presentations

Science Concept(s):

Photosynthesis & Cellular Respiration

Ocean Currents & Climate

Green House Gases & Chemistry

Global Warming & Climate Change

Reading Graphs

Sampling Data Collection

Making Graphs

Evaluating the Claims that Human Activities are Producing Climate Change

Humanities Concept(s):

Human impact on Climate Change

Human impact on mitigating Climate Change & Preparing for a Changing Future

Technique(s)/Resource(s) Incorporated from Teaching Florida's Climates Workshop:

Measuring trees' ability to be carbon sinks

Human impact on mitigating climate change

Optimism vs. Pessimism

Student Assessment Strategies:

Formal Assessment with test

Formal Assessment of Lab work

Informal Assessment of collaborative work on action project

Benefit to my students:

Understanding of Climate Change and the effect it will have on their future.

Optimism that they and others can make a difference in how we can mitigate the changes and how we can survive and thrive in our changing environment.

Resources and Materials (supplies needed for activities):

Power Points

Computers

Tape Measures

Math Teacher!



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“TAKING IT BACK TO THE CLASSROOM”

We know that it's not always possible to develop and implement a brand new lesson plan in a busy curriculum. How do you envision incorporating our experiences in your classroom teaching?

Idea 1

Experiment where we take shells and placing them in ocean water of varying levels of acidity

Learning Goals/Standards: IB 4.4

Climate Changes effects on the ocean and life in the ocean

Idea 2

Group activity of creating a marine food web and then modeling what will happen to the food web because of ocean acidification

Learning Goals/Standards: IB 4.4

Creating a Food Web

What happens to the ocean ecosystem because of ocean acidification

Idea 3

Using the food web created for Idea 2, modeling the effect of ocean warming on the marine ecosystem

Learning Goals/Standards

IB 4.4 Climate Change

Idea 4

Assigning species of plants to groups to research what is happening with them because of climate change (moving habitats, extinction, etc)

Learning Goals/Standards: IB 4.4

Idea 5

Groups research animals, both marine & terrestrial and make a poster to present the effects of Climate Change on them.

Learning Goals/Standards IB 4.4

What additional resources do you need in order to act on these ideas?

I have designed these lessons based on the resources I have access to.

Would love to have the forestry tape measures and scope for measuring carbon in trees.