



HUMANITIES AND THE SUNSHINE STATE

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

JUNE 24-28, 2019 UNIVERSITY OF FLORIDA

ACTION PLAN TEMPLATE

Teacher(s): Melissa Henkel

Grade(s): 6th

Subject(s): Science

Title of Lesson: Optimism in the Face of Climate Change

Learning Objectives:

The student will be able to:

- Give examples of positive and negative outcomes to a human action (including those that may be unintentional)
- Describe CO₂'s role as a greenhouse gas.
- Describe the human role in increasing levels of CO₂ in the atmosphere.
- Give examples of ways students can reduce carbon emissions that would have other positive effects.

Standards Addressed (if applicable):

SC.6.E.7.9

SC.6.E.7.4

Lesson Outline:

① Intro Fresnel Lens Effect

- Solving a problem for the common good can also have other positive effects

② Student discussion of examples in their own lives

- Have students share a personal example of when they did something positive expecting one outcome and got other positive (unexpected) outcomes. Did they also get negative?

③ Industrial revolution Pros vs. Cons.

- Give brief summary of Industrial revolution. Give students a pro/cons chart for them to fill out. Have them think of the positives and unforeseen negative consequences.

④ Review of Greenhouse Effect vs. Global warming and role of CO₂.

- Use diagram showing CO₂ interactions between Earth and Atmosphere to help show where much of the CO₂ imbalance is coming from (fossil fuels).

⑤ Call to action - have each student give one simple way they could →

Also review consequences of global warming in generalities and using examples from workshop (mangroves, parrot fish)

help reduce CO₂ emissions and one "other" benefit this action could have.

- ⑥ 6-word Challenge. - Have students describe their action plan in 6 words. (Maybe more like 5-7).

Example - Lights Out: Saves money and energy.

Learning Strategies:

- Venn diagram (greenhouse effect vs. global warming)
- pro/cons table (industrial revolution)
- Story-telling to introduce topic (Fresnel lens effect)
- Activation of prior knowledge (students sharing Fresnel lens type examples from their own lives).

Science Concept(s):

- Greenhouse gasses
- global warming
- ecologically-minded living

Humanities Concept(s):

- Industrial Revolution
- Fresnel Lens Effect
- ecologically-minded living

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

- Hemingway 6 word challenge
- Introduction to Fresnel Lens Effect by Dr. Ron Chandler
- Diagrams to better show interaction of atmosphere and Earth in CO₂ exchange and balance from presentation by Dr. Tim Martin
- Better understanding of scientific data backing up Climate Change and the human role in it from presentation by Dr. Lexa Shrivaneh

.. -6-word-Challenge described above

Benefit to my students:

- Students will better understand the role of CO₂ and burning of fossil fuels in Climate Change and leave with several tangible ideas of what they can do to reduce CO₂ emissions that will have other positive effects.

Resources and Materials (supplies needed for activities):

Extensions:

- Students implement their action plans and come back and share how they are going.