

Lesson Four - Cowspiracy
Lesson Planning Tool for Climate Change

Title of Lesson: Cowspiracy

Grade Level: 11th and 12th

Subject: Environmental Science

Source(s) of the lesson: The film Cowspiracy found on netflix.com or

<http://www.cowspiracy.com/>

Socratic seminar lesson review <https://www.nwabr.org/sites/default/files/SocSem.pdf>

Essential Question(s): How do your personal actions affect the climate? How does the food industry (agriculture and livestock) affect the climate?

Massachusetts Curriculum Frameworks Science Standards:

HS-LS2-4 Use a mathematical model to describe the transfer of energy from one trophic level to another. Explain how the inefficiency of energy transfer between trophic levels affects the relative number of organisms that can be supported at each trophic level and necessitates a constant input of energy from sunlight or inorganic compounds from the environment.

Content Objectives	Practice Objectives	Language Objectives
SWBAT- track the flow of carbon through various trophic levels, and realize the implications of agribusiness on the climate.	1. Asking questions (for science) and defining problems (for engineering) 7. Engaging in argument from evidence 8. Obtaining, evaluating, and communicating information	SWBAT- summarize in writing how the livestock and agriculture industries are the largest global contributors to climate change.

Important Vocabulary: Climate change, albedo, acidification, feedback loops, atmosphere, precipitation, carbonic acid, carbon dioxide, methane, ozone, greenhouse effect, mitigation, anthropogenic, urban heat island, permafrost

Materials Needed: Film “Cowspiracy”. Socratic seminar handout

<https://www.nwabr.org/sites/default/files/SocSem.pdf>

Other Resources: (websites, videos, books, etc.)

Background Information for Teacher: Understand how modern business of agriculture and livestock around the globe is not sustainable or eco-friendly.

Background Information the Student Needs to Access the Lesson: What prerequisite knowledge should the students have?

Basic understanding of energy transfer in ecosystems, especially through trophic levels.

Lesson Structure

Lesson Launch (Do Now)	Discuss with the students the largest global contributors to climate change... (fossil fuel consumption, electricity generation, etc...)
Background Instruction (pre-activity)	Review the basics of the modern agribusiness industry.
Activity	View the film cowspiracy. Have students take notes on the film and use the accompanying handout (at the end of the document) as a guide.
Discussion/ Debrief	Utilizing the “socratic seminar” format facilitate a whole class debrief on the film. https://www.nwabr.org/sites/default/files/SocSem.pdf Allow students to use the infographic provided by the film directors found here as a source of discussion points http://www.cowspiracy.com/infographic
Formative Assessment	Using an appropriate socratic seminar rubric, assess the students understanding of the concepts related to agribusiness and climate change. Example rubric https://www.edutopia.org/pdfs/stw/edutopia-kipp-criticalthinking-lessonplansrubric-rubric-socraticseminar.pdf

Notes:

Cowspiracy: The Sustainability Secret

Cowspiracy: The Sustainability Secret is a 2014 documentary film produced and directed by Kip Andersen and Keegan Kuhn. The film explores the impact of [animal agriculture](#) on the environment, and investigates the policies of [environmental organizations](#) on this issue. Environmental organizations investigated in the film include [Greenpeace](#), [Sierra Club](#), [Surfrider Foundation](#), [Rainforest Action Network](#), and many more.

Assignment

1. Write a claims, evidence and reasoning (CER) about the main theme of Cowspiracy. Select at least five pieces of evidence to support your claim, and provide ample scientific reasoning to support your claim.
2. Compile a comprehensive list of connections the film Cowspiracy makes to other topics we have studied thus far in the environmental science course. You should have a minimum of ten connections to other topics by the end of the film.

Extension

In order to maintain clarity it is important to check each of the factual claims made in the movie with our own original research from the most recent studies we can find. The claims and the sources relied on by the filmmakers are on the [Cowspiracy fact page](http://www.cowspiracy.com/facts/) <http://www.cowspiracy.com/facts/>. Please research the following topics:

- the impact of animal agriculture on water use;
- the impact on the environment of the disposal of the waste from factory farming of cows, pigs, chickens and fish;
- the comparative water footprints of providing 1 lb of protein from soy, wheat, beef, pork, chick and fish;
- the risks posed by antibiotic resistant bacteria, and the contribution of animal agriculture to that problem;
- the causes of the deforestation of the Amazonian rain forest, and its worldwide environmental impact;
- the environmental impact of a diet in which protein is obtained through grains or legumes as opposed to a diet in which protein is obtained through meat consumption;
- the impact on the health of an individual of a vegan diet.