Environmental Impact - Using Digital Media to Focus Student Learning

Dr. Crystal Randall, Dr. Sowmya Anjur and Dr. Don Dosch

Illinois Mathematics and Science Academy

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Environmental impact pedagogy

- Context: real world
- Connections: cross disciplinary
- Complexity: Societal issues, conflicting options, messy answers
- Creativity: problem solving
UN Sustainable Development Goals

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals

NCSSS
National Consortium of Secondary STEMSchools
UNSDGs guiding this project
Next Generation Science Standards
Unit outcomes

- Ecosystem dynamics and viability
- Effects of human activities
- Bringing solutions to the forefront

https://tinyurl.com/SIBfolder
Causes: *The Truth Stings*

- Pesticides
  - Neonicotinoids
- Fewer Plants
- Climate Change
- Weakened Immune Systems
  - Mite
- Transportation
- Loss of Habitat

**Honeybee Colony Collapse**

Colony Collapse Disorder (CCD): when the majority of the worker bees disappear from the hive, leaving behind the queen bee, young bees, and a few nurse bees.

“If the bee disappeared off the surface of the globe then man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man.”

**Disruption:**

- Decline in plants
  - Without pollinators, plants cannot produce offspring
- Plants are bottom of food chain
- Every animal relies on plants, so entire ecosystem affected
- Places more stress on birds

**Impact:**

**Human Society:**

- ⅓ of food comes from bees
- $15 billion of crop value
- Produce prices increase
- Humans won’t survive?

**Ethical/Societal Issue:**

How can farmers protect their crops while making sure bees are not harmed?

**Prevention**

- European Pesticide Ban
- Prevention of Mite infestation
- Improve overall bee health
  - *Genetically modifying bees to be resistant to pesticides and insecticides*

**Sources**

- http://sos-bees.org/causes/
- https://www.epa.gov/pollinator-protection/colony-collapse-disorder
- http://nativeplants.msu.edu/pollination

An early example

https://tinyurl.com/SIBposterprompt
Video Project

Scientific Inquiries in Biology

- A description of the non-impacted environment, and how do we know
- The scope of human impact, providing two different examples
- Detail each example with source or cause of impact and consequences that follow.
- Plans/efforts underway intending for remediation.
- Your potential solutions

https://www.youtube.com/watch?v=NhVI5HcMsmU&feature=youtu.be

https://tinyurl.com/SIBvideoprompt
Scientific Inquiries in Biology