Northeastern University
College of Engineering

STEM Newsletter 42 - (November 2022)

UN Sustainability Goals: Responsible Consumption and Production, Affordable Clean Energy, Clean Water and Sanitation

Introduction

As mentioned previously, for the next few weeks, we will be focusing on and discussing three different UN sustainability goals, each under an overarching theme. For this week, the theme is Sustainability and the sustainability goals that will be discussed are “Responsible Consumption and Production, Affordable Clean Energy, and Clean Water and Sanitation”.

The Responsible Consumption and Production goal seeks to improve the awareness and responsibility around sustainability on Earth prior to 2023. Specifically, the goal aims to combat the “Triple Planetary Crisis” which is climate change, biodiversity loss, and pollution. The goal seeks to address inherent patterns within society that enable these crises and reverse their ramifications.

The Affordable Clean Energy goal seeks to increase accessibility and affordability to reliable modern energy on Earth prior to 2023. Specifically, the goal aims to improve electrification progress by reaching remote and underserved areas and increase funding for clean energy initiatives. Thereby, widening the renewable energy options and consumption to ensure a greener future.

Lastly, the Clean Water and Sanitation goals seek to increase the availability of water and sustainability of waste on Earth prior to 2023. The goal plans to ensure systems that process water and waste are more inclusive and expansive to reach a larger number of people. This idea, coupled with the implementation of environmental and hygiene rules and regulations, hopes to improve the quality of life for millions of people around the world.

Northeastern Connections

Faculty Connection

Madhavi Venkatesan (Related News)

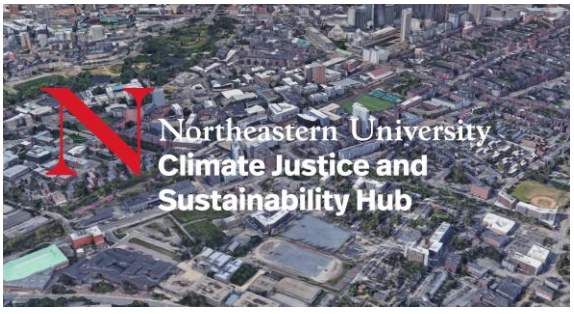
Madhavi Venkatesan is an associate teaching professor of economics at Northeastern University. She has a long history of promoting not just sustainability, but sustainability within economics. In 2016, she established a nonprofit, Sustainable Practices, with the goal of reducing human-made impact to our planet. This nonprofit has made several achievements, including a Municipal Plastic Bottle Ban that has been adopted in all 15 towns in Barnstable County. Outside of her nonprofit work, she has published a series of three economic textbooks, A Framework for Sustainable Practices: Economic Principles: A Primer, Foundations of Microeconomics and Foundations for Macroeconomics, as well as a fourth separate text SDG8 – Sustainable Economic Growth and Decent Work for All.

Student Connection

At Northeastern University, the Model United Nations team seeks to address many topics surrounding the UN, including the sustainability goals. In a debate-style format, students discuss the feasibility and opportunities that will pave the way for goals set forth by the UN to be achieved in a timely and realistic manner.

MODEL UN

At Northeastern University, the department for Climate Change and Sustainability discusses sustainability goals and initiatives. These topics are tackled from a hands-on perspective, educating and engaging the audience with tips and research projects that they can participate in and/or learn from. The website also provides information and resources for the general public regarding an overview of the impacts of climate change and the efforts to combat it. This includes "Education, Research, Campus and Community" subheadings with relevant information and timely news articles added for an in-depth view.



Do Now

Understand Goal 7: Affordable Clean Energy (Secondary)

Watch the video above and think about the questions listed below afterward.

Discussion Questions:

- Based on the video, what are some examples of clean energy?
- Why is it important that clean energy should be affordable?

Activity

Clean energy is renewable energy that produces zero emissions. Some examples of clean energies include solar, wind, geothermal, and hydropower. Today we'll be harnessing Solar Energy to cook some S'mores.

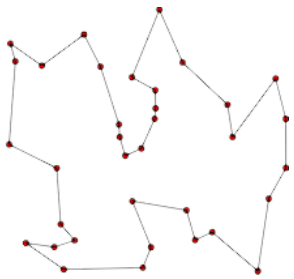
Materials Needed:

You can use any materials you want but here are some suggestions:

- Cardboard Box
- Aluminum Foil
- Plastic Wrap
- Glue
- Tape
- Stick
- Ruler
- Xacto Knife

Steps:

- Cut a three-sided flap out of the top of the box, leaving an inch border around the sides
- Cover the bottom and the inside of the flap with aluminum foil. Glue or tape the aluminum foil down, keeping the aluminum foil as smooth as possible. The aluminum foil will work like a mirror.
- Cover the opening you've created by cutting the flap with two sheets of plastic wrap. Then prop the flap open with a stick, you may have to tape and glue the stick down. This will allow the light to enter the box while trapping the heat inside.
- Place the oven in direct sunlight and allow for the oven to preheat for at least 30 minutes.
- Construct your smores and place it in your oven to cook. Enjoy!



Discussion Questions:

- How is the sun a clean source of energy?

- Does it make a difference using actual sunlight compared to light from a lamp?
- Can you think of other designs that might trap the heat better?

Share Your Results

We'd love to know how the activity and/or the "do now" turned out! What worked and what didn't work? Please share with us something you learned and/or send us pictures! Email us at stem@northeastern.edu.

Related links/Extensions

- UN Goals
- Northeastern University International Relations Council
- Northeastern University Climate Change and Sustainability
- TWI - What is clean energy? How does it work? Why is it important?
- NASA - solar ovens