

Think Globally, Teach Locally

*Resources for
Environmental
Awareness*

January 19, 2022



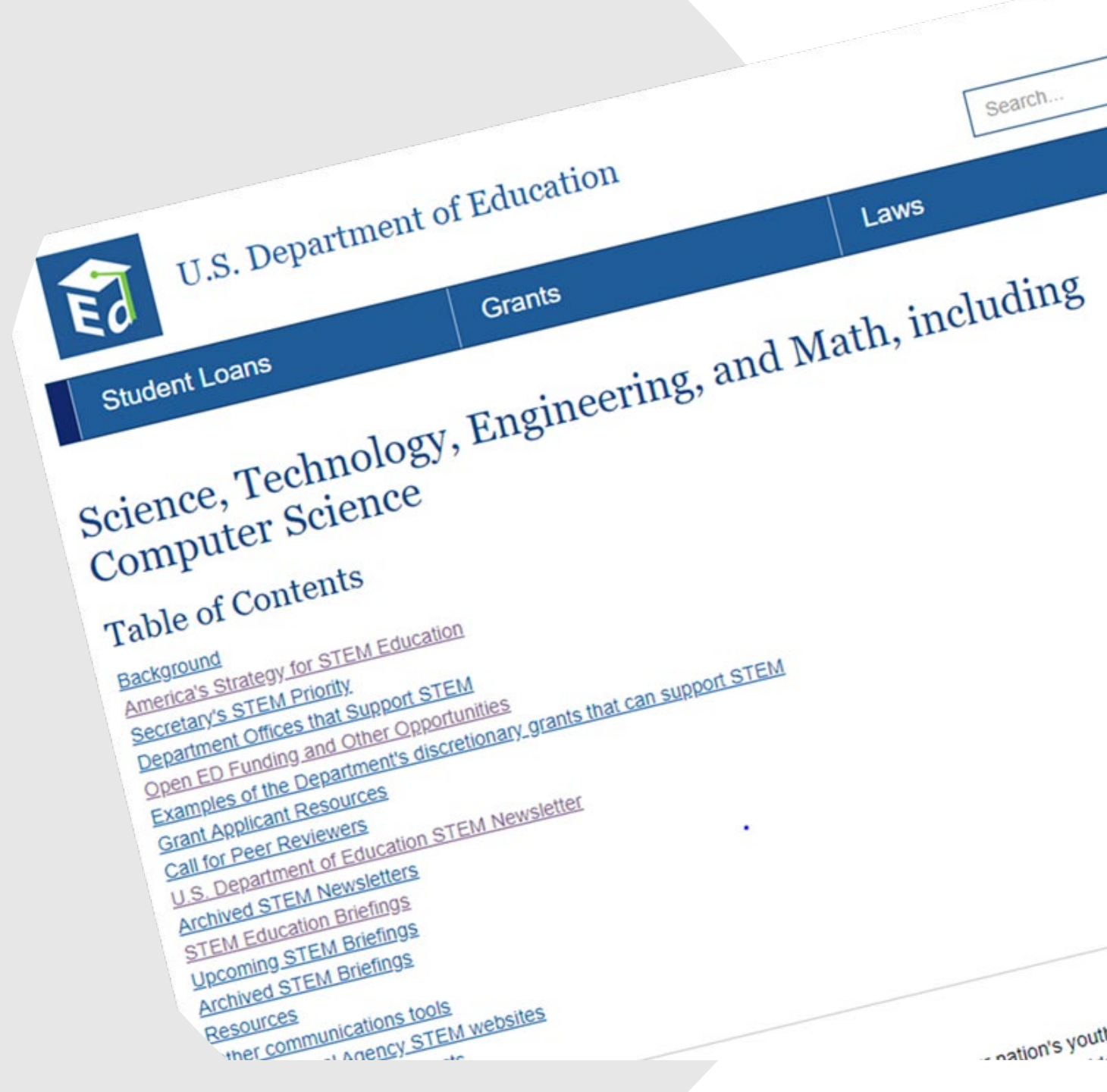
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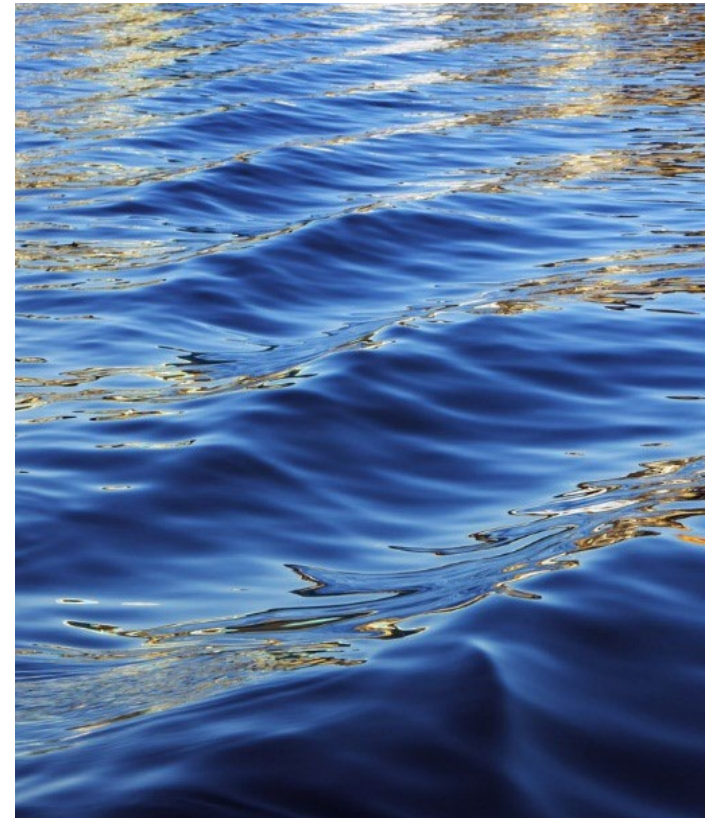
ED.GOV/STEM

Grants
Newsletter
Webinars
Resources





Andrea Falken



A photograph of two students in a greenhouse. One student is holding a clipboard and a pen, while the other is pointing at a plant. The background shows various green plants growing on a white trellis system. The entire image is overlaid with a semi-transparent green filter.

U.S. DEPARTMENT OF EDUCATION'S ROLE IN GREEN SCHOOLS AND ENVIRONMENTAL LEARNING



**WHAT IS U.S. DEPARTMENT OF
EDUCATION GREEN RIBBON SCHOOLS?**



Three Pillars

Environmental Impact and
Costs

Health and Wellness

Effective Environmental &
Sustainability Education



Nominees Selected in States

Interested schools, districts, and postsecondary institutions must be nominated by their state education authorities

Up to 5 schools or districts and 1 postsecondary institution

Provisions for disadvantaged, private, charter, magnet, early learning, postsecondary, and district applicants.

Timeframe

- Application to state agency in Fall/ Winter
- State nominates to ED by Feb. 2022
- ED announces national honorees on Earth Day
- ED invites honorees to ceremony in summer





Common misconceptions

Certification,
grant, or
compliance
mechanism

Cumbersome
federal application

All states
participate



THE GREEN STRIDES TOUR



NEW CLIMATE ACTION LEADERSHIP



**RESOURCES FOR ALL TO ADVANCE:
GREEN STRIDES.ORG**

U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools





Melissa Anley-Mills



Melissa Payne



Sarah Matthews



Rebecca Dodder



Emma Revfem



Sania W. Tong Argao



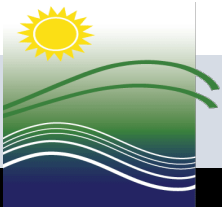
Michael Band

AIR QUALITY FLAG PROGRAM

**Know the Air Quality
Forecast and Protect
Your Health**



Department of Education
Webinar
2022



Co  Department of Energy and Environmental Protection



HISTORY

- EPA started national program in 2010
- Now open to all organizations
- Over 1700 participants, plus Regions, States, Tribes, and local orgs, reaches 7-8 million people



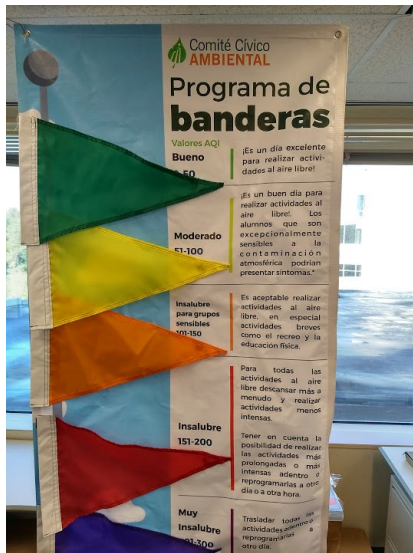
FLAG PROGRAM: FOUR STEPS

1. Purchase or create flags
2. Educate and inform the community
3. Check the air quality forecast each day and fly the corresponding flag color
4. Follow the recommendations for outdoor activities



1. PURCHASE FLAGS

AQFP does not provide flags, but Federal, state, tribal agencies and educational institutions can order flags through GSA for a reduced cost



2. EDUCATE AND INFORM



Bird's Eye View Lesson Plan

Grades: K-2
Subject: Science
Time: 2 Class Periods (1 Week Apart)

Student Objectives

- Name examples of natural and man-made air pollution.
- Describe some ways that people pollute the air.
- Observe and compare air samples.
- Explain how air pollution may affect us in our daily lives.

Materials

- Wire coat-hangers
- Knee high hose (tan or white)
- Scissors
- Stapler
- Petroleum jelly
- Q-tips
- Magnifying glass
- Tape or rubber bands
- Butcher paper

Background Information

People pollute or make the air dirty in many different ways. Perhaps the most obvious pollutants are those linked to fuel combustion, seen often in factories, power plants and emissions from vehicles. People pollute the air simply by moving around. For example, particles

and dust are stirred into the air when a person walks down the streets or moves from room to room indoors. Vehicles traveling along dry dirt or gravel roads also stir up dirt and dust.

Particulate matter (PM) added to the air mixture in the form of dust might be made up of bacteria, microscopic organisms, pollen, animal dander or other substances. The extremely small size of these particles makes them a risk to humans because they are easily inhaled deep into the lungs where they can contribute to a variety of adverse health effects.

The human respiratory tract has built-in, self-cleaning mechanisms designed to keep foreign particles out of the lungs. Some air pollutants can impair or halt these mechanisms, thereby paving the way for other pollutants to travel deeper into the lungs. Conditions ranging from sore, dry throats to asthma and bronchitis have been shown to have some connection with air pollution levels. Apart from adverse health effects, air pollutants can create ugly blankets of smog or mists that spoil the natural beauty of our surroundings and affect vegetation. Plants need clean air, sunlight, and water for healthy growth and foreign substances in the air can hinder the plants ability to take in these essential nutrients.

Setting the Stage

Have the students construct the "flying bird." Kindergarten teachers may want an assistant to help the students make their birds. Teachers can prepare the coat hangers ahead of time for younger students.

1 | Page Adapted from the Air and Waste Management Association Environmental Resource Guide for Air Quality

3. CHECK THE AIR QUALITY FORECAST






- Download the free **AirNow APP**
- Install the **WIDGET** on homepage
- Enter your **Zip Code** on the flag website
- Subscribe to **ENVIROFLASH**



4. OUTDOOR ACTIVITY GUIDANCE

Air Quality and Outdoor Activity Guidance for Schools

Regular physical activity — at least 60 minutes each day — promotes health and fitness. The table below shows when and how to modify outdoor physical activity based on the Air Quality Index. This guidance can help protect the health of all children, including teenagers, who are more sensitive than adults to air pollution. Check the air quality daily at www.airnow.gov.

| Air Quality Index | Outdoor Activity Guidance |
|---|--|
|  green GOOD | Great day to be active outside! |
|  yellow MODERATE | Good day to be active outside! Students who are unusually sensitive to air pollution could have symptoms.* |
|  orange UNHEALTHY FOR SENSITIVE GROUPS | It's OK to be active outside, especially for short activities such as recess and physical education (PE). For longer activities such as athletic practice, take more breaks and do less intense activities. Watch for symptoms and take action as needed.* Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy. |
|  red UNHEALTHY | For all outdoor activities , take more breaks and do less intense activities. Consider moving longer or more intense activities indoors or rescheduling them to another day or time. Watch for symptoms and take action as needed.* Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy. |
|  purple VERY UNHEALTHY | Move all activities indoors or reschedule them to another day. |

* Watch for Symptoms

Air pollution can make asthma symptoms worse and trigger attacks. Symptoms of asthma include coughing, wheezing, difficulty breathing, and chest tightness. Even students who do not have asthma could experience these symptoms.

If symptoms occur:

The student might need to take a break, do a less intense activity, stop all activity, go indoors, or use quick-relief medicine as prescribed. If symptoms don't improve, get medical help.

Go for 60!

CDC recommends that children get 60 or more minutes of physical activity each day. www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm

Plan Ahead for Ozone

There is less ozone in the morning. On days when ozone is expected to be at unhealthy levels, plan outdoor activities in the morning.



Go for 60!

CDC recommends that children get 60 or more minutes of physical activity each day.

FLAG PROGRAM WEBSITE

- English and Spanish
- Online Registration
- Quick Start guide
- Coordinator's Handbook
- Story Map
- Activity Guidelines
- Teacher/student resources
- Participating organizations

www.airnow.gov/flag

Air Quality Flag Program



NEW: The Flag Program widget is on a new system. Go to <https://www.airnow.gov/air-quality-flag-program-widget> to update your widget code.

Flag Program [Story Map](#): learn about the AQI and how to protect your health. Locate participating organizations on the map!

[Participating Organizations](#)

[Register Your Organization](#)

[Questions? Comments? Contact Us](#)

[Versión en Español](#)

Here's how the Air Quality Flag Program works: each day your organization raises a flag that corresponds to how clean or polluted the air is. The color of the flag matches EPA's Air Quality Index (AQI): green, yellow, orange, red, and purple. On unhealthy days, your organization can use this information to adjust physical activities to help reduce exposure to air pollution, while still keeping people active.

Start Your Flag Program



- The Four Steps
- Which Flag Do I Fly?
- Sign Up For Air Quality Emails Or Texts
- Flag Program Newsletters
- For Tribes

Outreach Materials



- Promote Your Program
- Outdoor Activity Guides
- Air Quality Flag Widget
- Photo Gallery
- Ordering Outreach Materials

For Schools



- School Resources
- Air Quality Lesson Plans
- Activity Book for Children
- Why is Coco Orange Picture Book

FYI: PARTICIPATING IN A FLAG PROGRAM NEAR YOU

Do you ever wonder what other organizations are flying an air quality flag in your area? There's a map for that. Go to <https://www.airnow.gov/flag> and click on the Story Map in the grey box.

The first graphic in the series shows a map of the country. The flags not only mark the organizations participating in the Flag Program-- they also show the local Air Quality Index forecast for the day for that organization.



GOT A GOOD STORY?

Has your organization overcome a roadblock related to your participation in the Air Quality Flag Program? Or have you discovered a great way to communicate about the air quality to your community? Let us know what you're up to-- we'd love to hear about it!



COCO IS BACK... AND IS ANIMATED!



Need some new videos for the classroom? Now you can watch the children's picture book *Why is Coco Orange?* as a narrated "action" video on the EPA YouTube channel at <https://www.youtube.com/watch?v=4TAuzMniolU>. Both English and Spanish captions are available. Go to Settings (the gear-like icon on the bottom right of the screen) and choose the appropriate language from the Subtitles drop-down. Check it out!

NEW: COMMUNITIES POSTER

Just in: a limited number of new posters aimed at community education about the Air Quality Index and local air quality.

The community poster is free, and you can order directly from EPA's [National Service Center for Environmental Publications](#) at <https://www.epa.gov/nscep>. Search for the poster using item number 456H20001. NOTE: The item number is also needed to place the order.

AQFP CONTACTS

Flag Team Contacts

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Welcome to GENERATE: The Game of Energy Choices

Think Globally, Act Locally | January 19, 2022

Rebecca Dodder, U.S. EPA & Emma Refvem, Durham Public Schools



Disclaimer: The game and associated materials were developed in support of education and outreach, and do not represent official U.S. EPA opinion or policies. This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication.





Energy 101: The big picture

- **Primary energy resources**

- Fossil: coal, natural gas, petroleum
- Non-fossil, non-renewable: uranium
- Renewable: wind, solar, hydro, geothermal, biomass



- **Technologies to convert primary resources to useable energy like electricity, gasoline, ...**

- Petroleum Refineries
- Electric Power Generation



- **End-use sectors**

- Residential
- Commercial
- Industrial
- Transportation



Hybrid



Plug-in Hybrid



All-Electric



Diesel



Flex-Fuel



Fuel Cell

- **Energy services** – What do people actually need and want? **Mobility** (vehicle miles of travel) or **accessibility** (accessing education, work, shopping), **lighting** (lumens of light), **comfort** (space heating and cooling). Energy is a “derived demand”





Energy and our environment: why it matters

Energy-system related impacts

Air pollutants

Nitrogen Oxides (NO_x)
Carbon monoxide (CO)
Sulfur Dioxide (SO₂)
Particulate Matter (PM)
...more

Greenhouse gases

Carbon dioxide (CO₂)
Methane (CH₄)
Nitrous oxide (N₂O)
Black carbon and short-lived climate forcers

Water use

~40% of total water withdrawals





Snapshot of Generate

- Teams get a grid and a mix of energy pieces
- Each piece has costs and emissions
- Teams compete to get the total lowest cost
- Each round presents new challenges (carbon price) and opportunities (more renewables, efficiency options)



“It was cool, funny and angering at times!” 6th grader

TEAM 2

DIRECTIONS

1. Fill the grid with energy sources at the lowest total cost.
2. Energy sources must be horizontal and cover the entire grid. They can not go outside the grid. You may use any combination of energy sources.
3. TOTAL COST = (Purchase Cost) + (Annual Cost x 30) + (CO₂ x CO₂ Cost x 30)
4. The 1st round of the game will not have a CO₂ cost, so this will be zero.
5. Now, go GENERATE!

| | | | | | | | | | | | |
|-----------------|--|--------------|--|-----------------|--|--------------|--|-----------------|--|--------------|--|
| NUCLEAR | | 2000 | | COAL - EXISTING | | 0 | | COAL - EXISTING | | 0 | |
| 0 | | 46 | | 45 | | 15 | | 45 | | 15 | |
| COAL - EXISTING | | NATURAL GAS | | NATURAL GAS | | NATURAL GAS | | NATURAL GAS | | NATURAL GAS | |
| 0 | | 120 | | 120 | | 120 | | 120 | | 120 | |
| 45 | | 5 | | 5 | | 5 | | 5 | | 5 | |
| 11 | | 120 | | 120 | | 120 | | 120 | | 120 | |
| 11 | | 5 | | 5 | | 5 | | 5 | | 5 | |
| WIND - LARGE | | WIND - LARGE | | WIND - LARGE | | WIND - LARGE | | WIND - LARGE | | WIND - LARGE | |
| 470 | | 470 | | 470 | | 470 | | 470 | | 470 | |
| 0 | | 10 | | 10 | | 10 | | 10 | | 10 | |
| SOLAR | | SOLAR | | WIND | | WIND | | WIND | | WIND | |
| 420 | | 420 | | 130 | | 130 | | 130 | | 130 | |
| 0 | | 2 | | 0 | | 2 | | 0 | | 2 | |

“This is the best science board game EVER!” 6th grader



Preview of mobility game

- Each student is set up with:
 - Career with salary
 - Location with cost of living
 - One of nine “commute cards” for VMT
- They then choose from 18 vehicles
- Range of vehicle classes, costs, efficiencies, emissions, new/used.
- Gasoline, hybrid, PHEV, BEV
- Five non POV mobility options subway, bus (suburban), walk/bike, carpool
- Students calculate and compare transportation costs and emissions
- As a team they negotiate to lower team-wide CO₂ emissions
- Additional rounds introduce “give and take” cards



“Do adults do these calculations when they buy a car?”

| | | Drive! | | |
|--|---|------------------|------------------|------------------|
| Name _____ | | Round One | Round Two | Round Three |
| Career | a. Career Choice | | | |
| | b. Average Monthly Salary | \$ | \$ | \$ |
| | c. Location | | | |
| Lifestyle & Budget | d. Cost of Living (COL) | \$ | \$ | \$ |
| | e. Remaining Monthly Budget Average Monthly Salary - COL (b - d) | \$ | \$ | \$ |
| | f. Monthly Mileage (Daily Commute x 20 days) + Additional VMT | miles | miles | miles |
| | g. Vehicle Choice | | | |
| Vehicle | h. Monthly Estimated Car Payment | \$ | \$ | \$ |
| | i. Vehicle Average Miles Per Gallon (MPG) or Vehicle Average Miles Per Kilowatt hour (mi/kWh) | MPG or mi/kWh | MPG or mi/kWh | MPG or mi/kWh |
| Vehicle and Fuel Cost | j. Monthly Fuel/Energy Cost (Fuel Cost x Monthly Mileage/mpg) or (Energy Cost x Monthly Mileage/mi/kWh) (E x 100 kWh x f / i) | \$ | \$ | \$ |
| | k. Total Monthly Cost of Vehicle (h + j) | \$ | \$ | \$ |
| | l. Remaining Monthly Budget (e - k) | \$ | \$ | \$ |
| | m. Monthly CO ₂ Emissions in lbs. (Monthly Mileage x 19.6/ mpg (x 28.6/ i)) | lbs. | lbs. | lbs. |
| n. Annual CO ₂ Emissions in lbs. (Monthly Emissions x 12 (x 1.2)) | lbs. | lbs. | lbs. | |

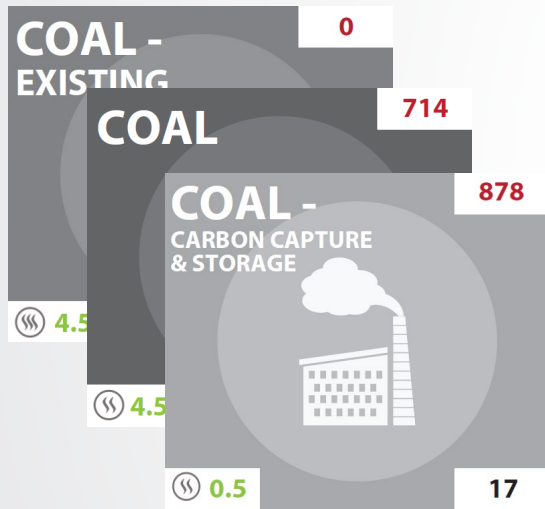
Legend:
 + You will have to compute the answer to this.
 □ You can find this information on a card.

“Can I take this worksheet with me?”



Types of energy pieces

FOSSIL ENERGY



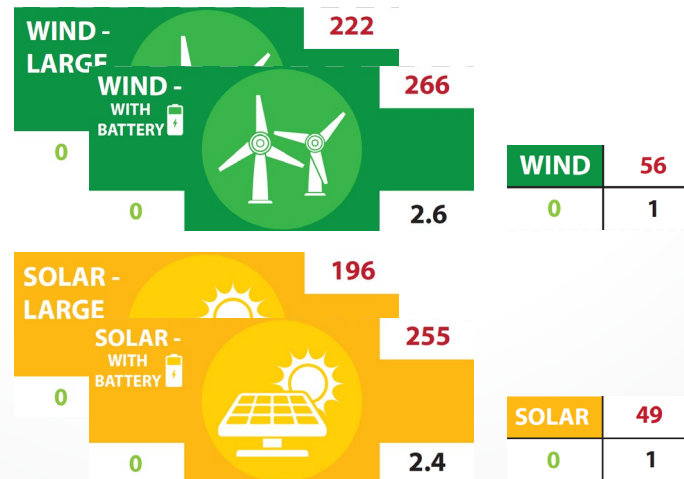
NUCLEAR ENERGY



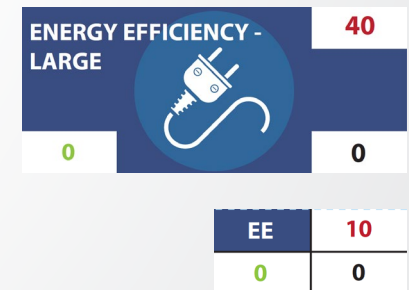
BIO-BASED ENERGY



RENEWABLE ENERGY



ENERGY EFFICIENCY

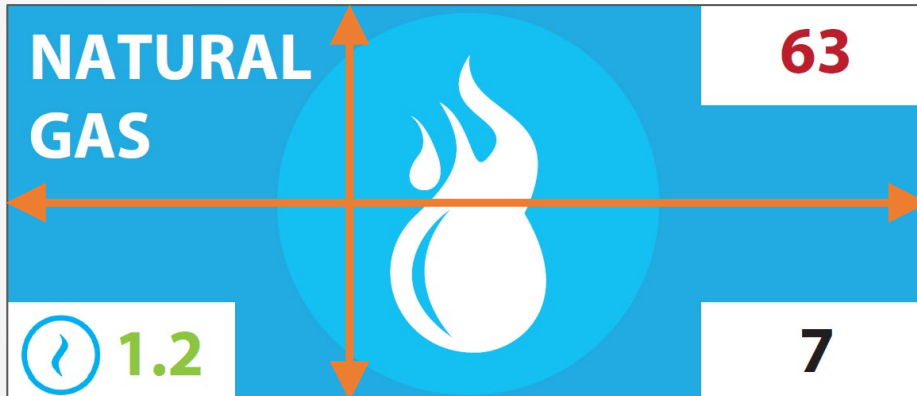




Round 1: Parts of the energy pieces

Size:

How much energy does it produce?



Purchase Cost:

How much does it cost up front to build/purchase?

Type:

What primary energy resource does it use?

AQ Impacts:

How much air pollution is produced?
Scale of 0-3

CO₂ emissions:

How much CO₂ does it produce *each year*?

Annual Cost:

How much does it cost *each year* to run/operate?

= 273

Lifetime: All energy pieces will last 30 years

$$\text{Round 1: Cost per piece} = \text{Purchase cost} + (\text{Annual Cost} \times 30)$$



Let's play!

- Each team has a different energy mix to from which to choose
- Goal is to fill the energy grid at the lowest cost
- Team Jobs: Cost Control, Timekeeper, Recorder (of type and number of each piece used)
- If playing virtually, facilitators will share your team Jamboard link in your room and move pieces
- Students – Be sure to unmute your mics and participate actively



Live demonstration on Jamboard

Team 1

Reminder: Try not to click on the picture of the board- it will send all of your energy tiles behind the board and you won't be able to see them! :)

NUCLEAR 1684
NUCLEAR - 168
NUCLEAR - EXISTING 168

INSTRUCTIONS

- Fill the grid with energy sources at the lowest total cost.
- Energy sources must be horizontal and cover the entire grid. They can not go outside the grid. You may use any combination of energy sources.
- TOTAL COST = (Purchase Cost + Demand Cost x 100 + CO₂ Cost x 100)
- The 1st round of the game will not have a CO₂ cost, so this will be zero.
- Now, go GENERATE!

COMPLETELY COVER THE GRID WITH ENERGY SOURCES

COMPLETELY COVER THE GRID WITH ENERGY SOURCES

COAL 714
COAL 714

0.5 14

COAL - 0
COAL - 0
COAL - EXISTING 0

0.5 15

COAL - 878
COAL - 878
COAL - CARBON CAPTURE & STORAGE 878

0.5 17

NATURAL GAS 63
NATURAL GAS 63

1.2 7

BIOMASS 300
BIOMASS 300

0 14

SOLAR - LARGE 196

0 2.4

WIND - LARGE 222
WIND - LARGE 222

0 2.6

WIND - with BATTERY 266

0 2.6

SOLAR - with BATTERY 255

0 2.4

Cards covered by these sticky notes are for the 2nd round only :)

X

Cards covered by these sticky notes are for final round only :)

X

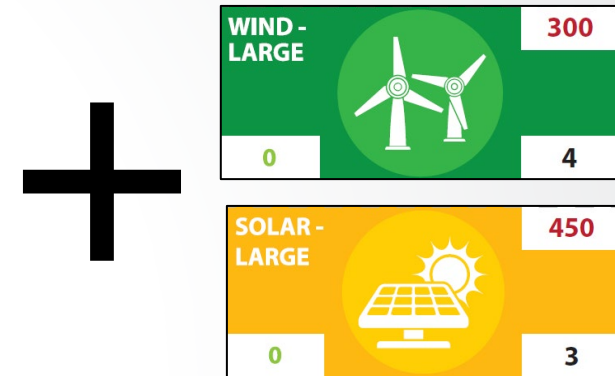


Round 2: CO₂ price + more renewables



AQ Impacts:
How much air pollution is produced?
Scale of 0-3

CO₂ emissions:
How much CO₂ does it produce *each year*?



$$\begin{aligned} \text{Cost per piece} &= 63 + (7 \times 30) \\ &\quad + (1.2 \times 1 \times 30) \\ &= 309 \end{aligned}$$

Lifetime: All energy pieces will last 30 years
CO₂ price = 1

Round 2:

$$\text{Cost per piece} = \text{Purchase cost} + (\text{Annual Cost} \times 30) + (\text{CO}_2 \text{ emissions} \times \text{CO}_2 \text{ price} \times 30)$$



All materials available online

Generate: The Game of Energy Choices

This page contains all of the printable materials for the Generate Game including the game board, game pieces and instruction manual. Generate is an interactive game that allows students to explore energy choices and teaches the considerations and costs in deciding what type of energy generation to build.

The 2021 update of the Generate Game is now available, including instructions for playing the game in a virtual setting.

- [Generate 2021 Introductory Presentation \(pptx\)](#)
- [Generate 2021 Instructor's Guide \(pdf\)](#)
- [Generate 2021 Game Board and Pieces \(pdf\)](#)
- [Generate 2021 Game Board - Large Version \(pdf\)](#)
- [Generate 2021 Score Card \(pdf\)](#)
- [Virtual Generate Jamboards: A How-to Guide \(pptx\)](#)
- [Editable Companion Excel File For Quickly Calculating Team Scores \(xlsx\)](#)





How Teachers Use the Game

- [Article in The Science Teacher](#) – July/August 2021
- Students are more engaged
- Provides a break to the routine
- Simplifies a complex topic
- Students make nuanced connections to real-world issues

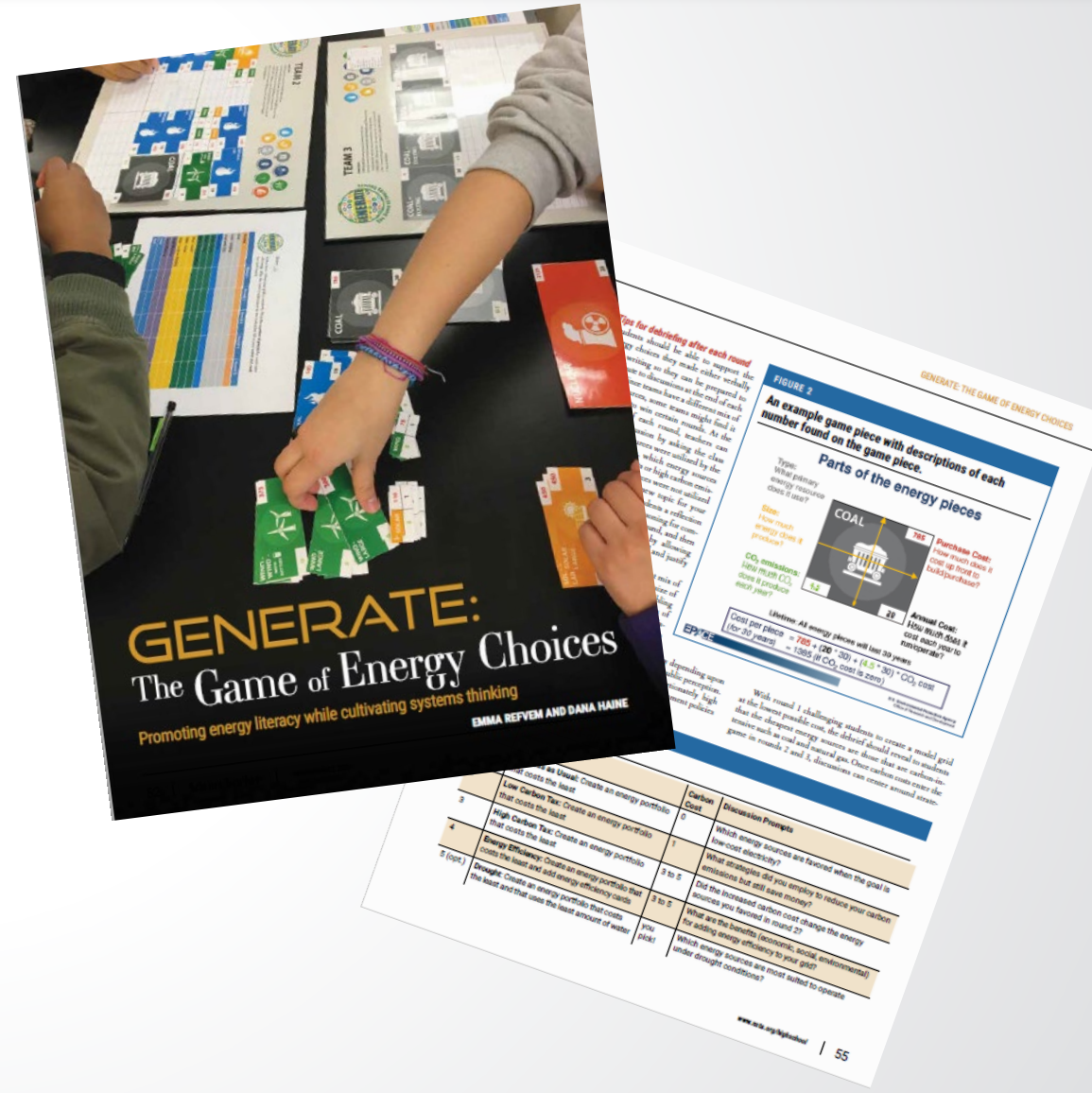


FIGURE 2
An example game piece with descriptions of each number found on the game piece.

Parts of the energy pieces

Type: What primary energy resource does it stay?

Size: How much energy does it produce?

CO₂ emissions: How much CO₂ does it produce each year?

Life-time: All energy pieces will last 20 years.

Cost per piece = 200 + (20 * 30) + (4.5 * 30) * CO₂ cost

Annual Cost: How much does it cost each year to nonrenewable?

Purchase Cost: How much does it cost to build/purchase?

| Challenge | Carbon Cost | Discussion Prompts |
|--|-------------------|---|
| 1 Low Carbon Tax: Create an energy portfolio that costs the least | 0 | Which energy sources are favored when the goal is low-cost electricity? |
| 2 High Carbon Tax: Create an energy portfolio that costs the least | 1 | What strategies did you employ to reduce your carbon footprint but still save money? |
| 3 Energy Efficiency: Create an energy portfolio that costs the least and add energy efficiency cards | 3 to 5 | Did the increased carbon cost change the energy sources you favored in round 2? |
| 4 Tough: Create an energy portfolio that costs the least and that uses the least amount of water | 10 100 1000 | What are the benefits (economic, social, environmental) for adding energy efficiency to your grid? Which energy sources are most suited to operate under drought conditions? |



Additional information

- **Generate** materials available at: www.epa.gov/air-research/air-quality-and-energy-choice-stem-activities-educators
- **Mobility game:** materials under development and will be pending review and clearance



STUDENT CHALLENGES



EPA CHALLENGES & PRIZES

WIN UP TO \$5000!

Submit a video on how a company on EPA's TRI tool is going green!

Enter by March 1, 2022

More information:
www.epa.gov/companiescrushingpollution-video-challenge

COMPANIES CRUSHING POLLUTION
Video Challenge

A promotional graphic for the "Companies Crushing Pollution Video Challenge". It features a central image of a worker in a blue hard hat and yellow safety vest. The text is arranged around this image, including the prize amount, submission instructions, deadline, and a QR code for more information. The EPA logo is in the bottom right corner.



Companies Crushing Pollution” Video Challenge

WIN UP TO \$5000!

Submit a video on how a company on EPA’s TRI tool is going green!



Enter by March 1, 2022



More information:
www.epa.gov/companiescrushingpollution-video-challenge



COMPANIES CRUSHING POLLUTION

Video Challenge





A Green Infrastructure
Design Challenge
for Colleges and
Universities

Registration each September
Entries due early December
Winners Announced each Spring

With Prizes totaling \$30,000
Share amongst to 1st and 2nd place winners (Student and Faculty Prizes)

For more information: <https://www.epa.gov/green-infrastructure/campus-rainworks-challenge-0>



EPA's Prize and Challenge Site:

<https://www.epa.gov/innovation/epa-challenges-prizes>

STUDENT CHALLENGES



Subscribe to the [EPA challenge & prize competition email list](#) to stay up-to-date on the latest news.

Questions about Challenges:

Please contact us at Innovation@epa.gov



EJ Video Challenge for Students



Presented by:

Sania W. Tong Argao

U.S. Environmental Protection Agency (EPA)
Office of Research and Development (ORD)

U.S. Department of Education STEM Webinar

January 19, 2022
1:30 - 3:00 PM ET

What's the issue?

- Many communities face greater environmental exposures and public health risks due to a history of inequitable environmental policies and access to the decision-making process.
 - Many lower-income or minority communities are located near industrial plants or waste disposal sites resulting in reduced air or water quality.
 - These communities may contain older and unsafe homes with lead-based paint, exposures to mold, or exposures to other hazards that put residents at higher risk of health problems.



What is environmental justice?

- Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.



Identifying the EJ Issue(s)

- Multiple EJ concerns can affect a community
- Communities with EJ concerns may need help identifying what issues they may be facing
- Knowing what EJ issues are affecting a community is empowering



Publicly Available Tools & Data

- Publicly available tools and data exist that can help communities identify or characterize EJ issues in their community.
- These tools and data can also be used to come up with strategies to address identified EJ issues.





The Challenge!

Use data and publicly available tools to identify and address EJ issues in your community!

- Inspire students at accredited colleges and universities in the United States and its territories to work directly with communities in the identification and characterization of EJ challenges using data and publicly available tools, and
- Help communities (including residents and other stakeholders) address EJ challenges and/or vulnerabilities to environmental and public health hazards using data and publicly available tools.

Enhance Communities' Capacity to

Address Environmental Inequities using Data and Tools

Federal Co-Sponsor

- U.S. Environmental Protection Agency – Office of Research and Development (EPA/ORD)

Non-Federal Co-Sponsors

- American Public Health Association (APHA)
- Educational Partnerships for Innovation in Communities – Network (EPIC-N)
- Environmental Defense Fund (EDF)
- *Environmental Justice* (peer-reviewed journal)
- Groundwork USA



EJ Video Challenge Phases

Phase 1: Create a video to demonstrate innovative approaches to identify and characterize an EJ issue(s) in a select community using data and publicly available tools.

Phase 2*: Develop a video to display how students used data and publicly available tools to identify strategies and opportunities to address an identified EJ issue(s) and worked with a community-based organization(s) to inform strategies for intervention and/or facilitated effective community engagement and advocacy on the EJ issue(s).

***NOTE:** Details for Phase 2 will be provided prior to the launch of Phase 2, which is tentatively scheduled to start in August 2022.

Visit [EJ Video Challenge: Tools and Data Resources](#) to view example tools that may be useful for the Challenge.



Prizes

- **Prizes – Phase 1
(For Students)**

- (1) First Place Prize of \$20,000
- (1) Second Place Prize of \$12,000
- (1) Third Place Prize of \$6,000
- Up to (7) Honorable Mention Prizes of \$1,000 each

- **Prizes – Phase 2**

- To be announced at a later date.

- **Non-Monetary Awards – Phase 1**

- Winning videos will be posted on EPA's EJ Video Challenge for Students webpage.
- Winning videos will be shared on EPA social media channels and communications.
- If a tool developed by EPA's Office of Research and Development was used, winners and their community organization partner(s) will have the opportunity to speak with a team member for that tool for Phase 2.
- Challenge winners will have an opportunity to submit an article for publication (*subject to the journal's formal review/acceptance process*) in *Environmental Justice*.



Important Dates – Phase I

| Phase I Event | Date |
|---------------------------|-------------------------------|
| Phase I Opens | November 2, 2021 |
| Informational Webinar | December 6, 2021 @12 p.m. ET |
| Phase I Submissions Due | April 1, 2022 by 11:59 PM EST |
| Phase I Winners Announced | June 2022 |

Note: Phase 2 dates will be announced at a later date.



Questions?



Website for the Challenge:

<https://www.epa.gov/innovation/environmental-justice-video-challenge-students>

Questions:

Please contact us at EJVideoChallenge@epa.gov.

Social Media:

#EJVideoChallenge



EPA's Office of Environmental Education Resources

Michael Band, Education Grant Specialist
U.S. Environmental Protection Agency

OEE's Award Programs

- OEE Currently OEE currently runs two Award Programs, one recognizing students and another recognizing educators



How to Apply

[Apply for the President's Environmental Youth Award](#)

Applications are due February 18, 2022



[Presidential Innovation Award for Environmental Educators](#)

Applications are due February 18, 2022



Environmental Education Resources

<https://www.epa.gov/students>

- **Homework Resources**
- **Lessons Plans**
- **Teacher Guides**
- **Games**



A Closer Look at <https://www.epa.gov/students>

Classroom Resources and Project Ideas



- [Lesson plans, teacher guides and online resources for educators by environmental topic](#)
- [Community service project ideas](#)
- [Science fair project ideas](#)

Homework Help and Activities for K-12 Students



- [Homework resources by environmental topic](#)
- [Games, quizzes, videos, and more](#)

Key Features

Topics: [Air](#) | [Climate Change](#) | [Ecosystems](#) | [Energy](#) | [Health](#) | [Waste](#) | [Water](#)

Acid Rain: A Teacher's Guide (PDF 56 pp, 4.6 MB)

Lesson plan and activities from EPA for teachers on acid rain.

Grades: 6-8

Type of Resource: Lesson plan

Acid Rain Student Pages

Find the acid rain student pages, as well as general information for older students or adults.

Grades: K-12

Type of Resource: Lesson plans and experiments

AIRNOW

Get up-to-the-minute information about air pollution in your community, through a joint project from EPA, the National Oceanic and Atmospheric Administration, the National Park Service and other partners. The AIRNOW website includes maps, forecasts, and information about the health effects of air pollution.

Grades: 9-12

Type of Resource: Website

Stay Up-To-Date on OEE News!

Subscribe to the Office of Environmental Education listserv on <https://www.epa.gov/education>

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Enter your email address to subscribe:



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US EPA Research ✓
@EPAresearch

Science news, links, and conversation from the US Environmental Protection Agency's Office of Research and Development (ORD). RTs /mentions are not endorsement.

📍 11 states + DC 🌐 epa.gov/research 🕒 Born December 2, 1970
📅 Joined July 2009

688 Following 103.7K Followers

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Our research labs are located across the US with HQ in DC Washington D.C., DC 20004

- 1 Protecting public health and the environment through science and engineering.
- 2 Science at EPA provides the foundation for credible decision-making to safeguard human health and ecosystems from environmental pollutants. The Office... See more

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<http://epa.gov/research>
(202) 272-0167
Government Organization

U.S. EPA Research ✓
4 hrs · 🌐

Particle pollution, also called Particulate Matter, is a complex mixture of extremely small solid and liquid particles suspended in air with components such as acids, organic chemicals, metals, and soil or dust particles. Total fine particulate pollution (PM_{2.5}) is associated with cardiorespiratory mortality and is estimated to cause millions of deaths worldwide. But the role of PM's individual components is dynamic and less well understood. So our researchers, led by Dr. ... See more

NATURE.COM
Secondary organic aerosol association with cardiorespiratory disease mortality ...
Fine particle air pollution causes premature death, but the role of different fine particle components in mortality is not well characterized. Here, the authors show the secondary organic aerosol component of fine particle mass is...

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U.S. EPA Research ✓
Yesterday at 11:30 AM · 🌐

Teachers! #DYK U.S. Department of Education hosts a monthly #STEM briefing webinar series? Guess who's presenting on January 19th from 1:30PM - 3PM ET? We are!

Facebook @EPAresearch



US EPA Research
@EPAresearch



College students / Professors: Don't miss the [#WaterReuse](#) task in the WERC Environmental Design Contest that was developed by our [#EnvironmentalEngineering](#) experts. Learn more: iee.nmsu.edu/2022-tasks-faq... [#STEM](#)

NMSU Engineering @NMSU_engineer · Jan 10

Engineering students Design the best #virus-monitoring process for Waste Water! Task designed by EPA and CDM Smith. WERC Environmental Design Contest task: Monitoring Virus Removal by MBRs. #WERCDC. Learn more bit.ly/3IXdiYU



April 10-13, 2022

WERC ENVIRONMENTAL DESIGN CONTEST

Win \$2500!

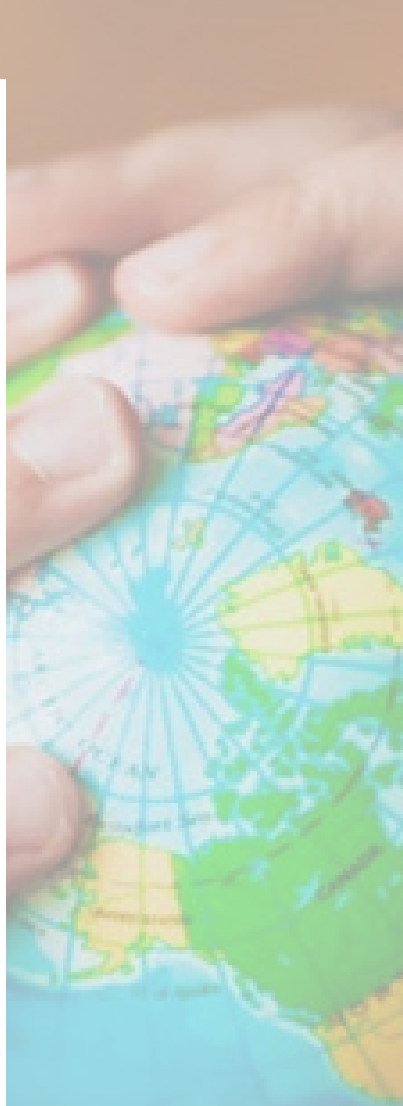
YOUR TEAM COULD DESIGN THE BEST: Virus-removal Monitoring Process for Membrane Bioreactors

Undergraduate Engineering Contest

Silver Sponsor: EPA
Iron Sponsor: CDM Smith
Info: WERCDesignContest.nmsu.edu

EPA
EPA-Designed Task!

4:03 PM · Jan 14, 2022 · TweetDeck



US EPA Research
@EPAresearch



Explore the [#EnviroAtlas](#) education materials: ready-made lesson plans for every grade level, from kindergarten through undergraduate and aligned with Next Generation and State Science Standards: epa.gov/enviroatlas/en... [#EPAEnviroAtlasEd](#) [#STEM](#) [#BackToSchool](#) [#WakeEdSummerSTEM](#)



12:06 PM · Jul 21, 2021 · TweetDeck

<https://iee.nmsu.edu/2022-tasks-faq>

<https://www.epa.gov/enviroatlas/enviroatlas-educational-materials>

Thank you!

Additional Resources Mentioned in the Q &A

Executive Order 14008 [*Tackling the Climate Crisis at Home and Abroad*](#)
(EPA's) [National Environmental Justice Advisory Council](#)
Recommendations: <https://www.epa.gov/sites/default/files/2021-05/documents/whiteh2.pdf>

Funding opportunity Improving Public Health Data Systems to Address Health Equity Challenges for At-Risk Communities in the U.S. Gulf Coast,;
<https://www.nationalacademies.org/our-work/funding-opportunity-improving-public-health-data-systems-to-address-health-equity-challenges-for-at-risk-communities-in-the-us-gulf-coast>

EPA P3 program: www.epa.gov/p3