

♦ Doherty Envirothon ♦

CLIMATE FAIR



Join us Wednesday, April 12th

in the Library!

2-3 pm

(For more information, contact Ms. Hill, Room 322)

1 Ticket

♦ Doherty Envirothon

CLIMATE FAIR

Wednesday, April 12th
2-3 pm

media center

In our school's
Media Center

Wednesday, April
14 after school,
2-3pm

Over 50 people in
attendance!



How did we get people to come?



Lots of snacks!!



Door prizes: Raffle for Target gift card (\$25)



"Climate Change 101"

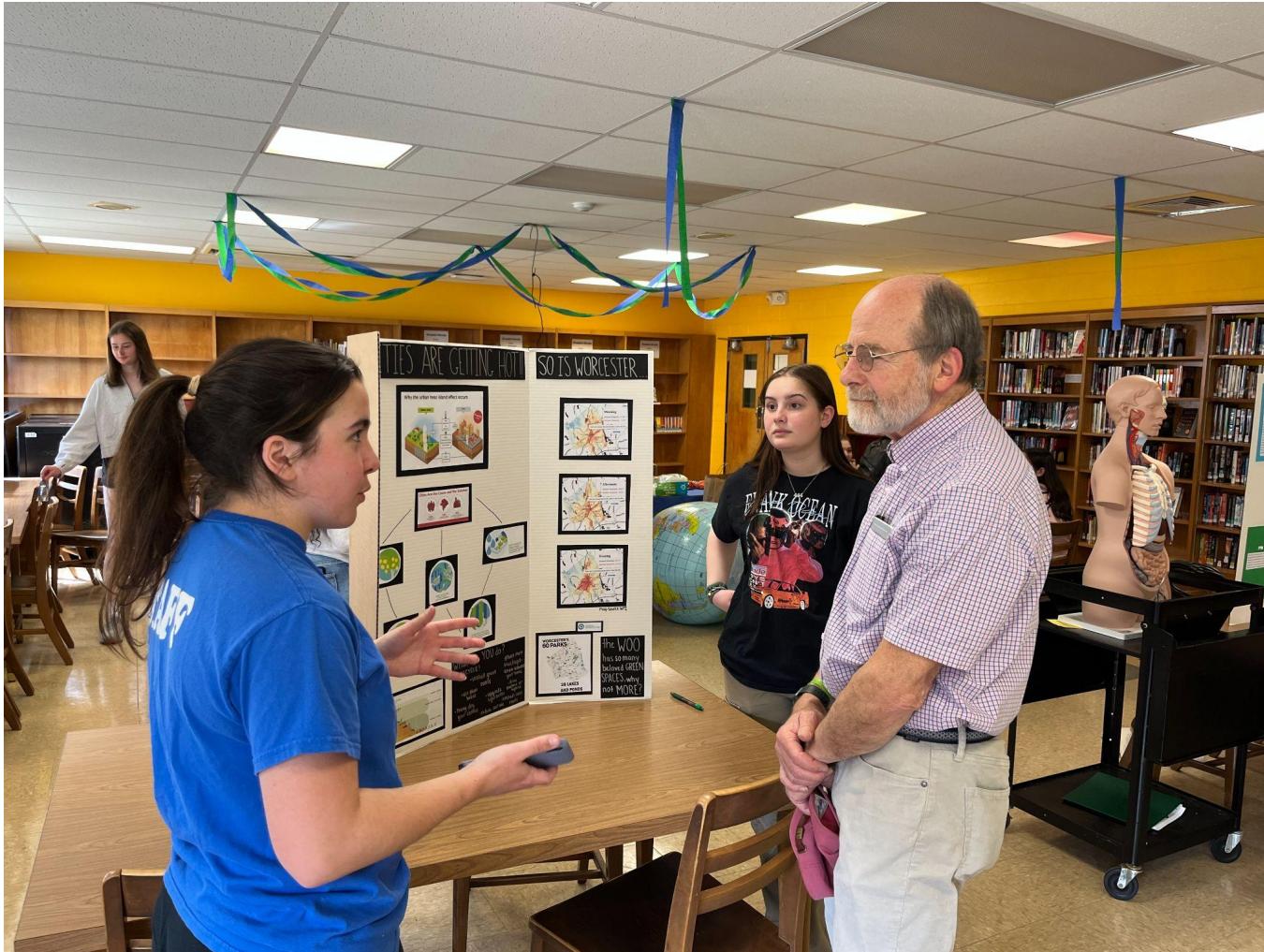
Fun quiz to test participants' knowledge



Map of Worcester:

Put a pin to show where you live!

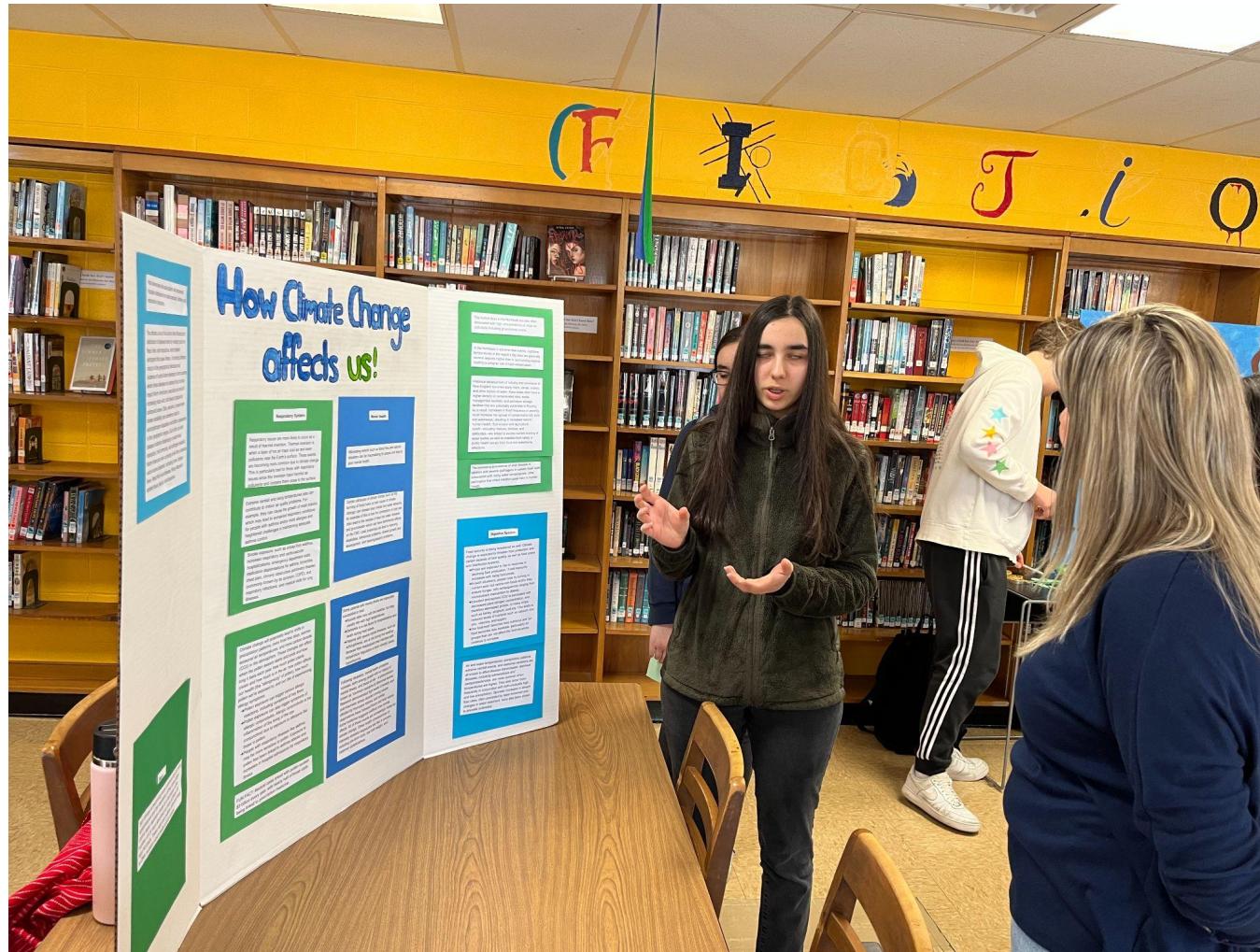
Compare areas that are prone to flooding, most impacted by heat island effect, and location of Environmental Justice populations



Impact of CC on
cities (including
Worcester!)

Impact of CC on oceans





Impact of CC on
human health

Pin the leaf on the tree!



Button making!

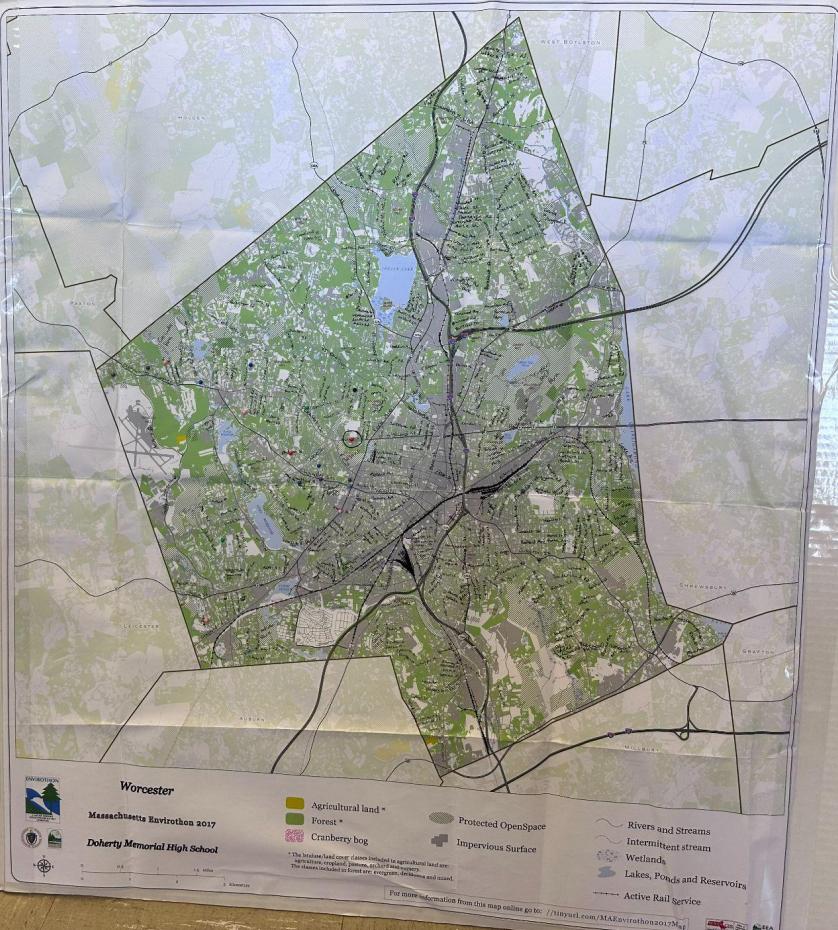
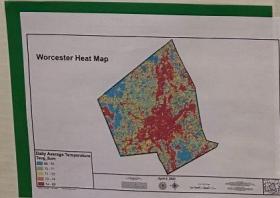
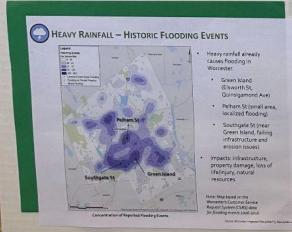
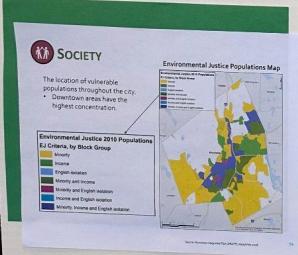


How much did it cost?

\$218 (snacks, decorations, favors, door prizes)

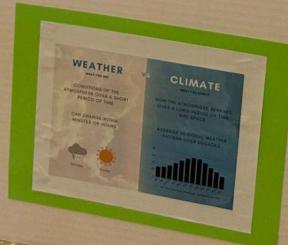
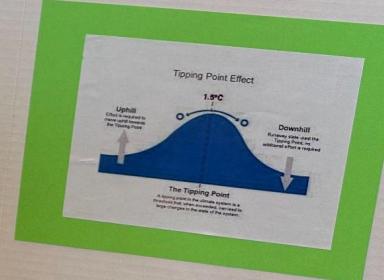
How did we pay for it?

Financial support from Broad Meadow Brook (thank you!)



Climate Change 101

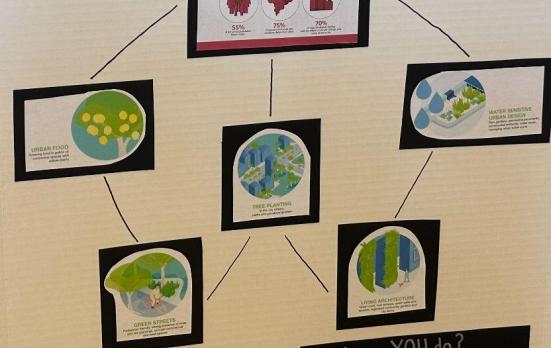
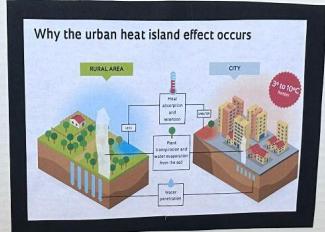
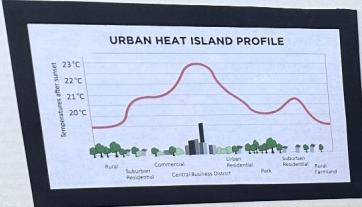
DO OUR QUIZ



WE HAVE THE POWER!

CITIES ARE GETTING HOT!!

SO IS WORCESTER



What can YOU do?

- RECYCLE!
- install green roofs
- eat plant based
- hang dry your clothes
- upgrade light bulbs
- reduce car use
- plant more trees/vegetation around your home
- drive electric or hybrid
- install cool roofs



How Climate Change affects us!

Heat waves are also associated with increased hospital admissions for cardiovascular, kidney, and respiratory disorders.

The climate is one of the factors that influence the distribution of diseases borne by vectors (such as fleas, ticks, and mosquitoes), which spread pathogens that cause illness. A changing climate's impact on the geographical distribution and incidence of diseases can affect disease patterns in countries where these diseases are currently found and can also impact North Americans, especially as a result of increasing trade with, and travel to, tropical and subtropical areas. Daily, seasonal, or year-to-year climate variability can also influence rates of vector-pathogen adaptation and shifts or expansions in their geographic ranges. Such shifts can alter disease incidence, depending on vector density and intensity, host density, and human population. North Americans are currently at risk from numerous vector-borne diseases, including Lyme, dengue fever, West Nile virus disease, Rocky Mountain spotted fever, plague, and tularemia.

The hottest days in the Northeast are also often associated with high concentrations of urban air pollutants including ground-level ozone.

In the Northeast in extreme heat events, nighttime temperatures in the region's big cities are generally several degrees higher than in surrounding regions, leading to a higher risk of heat-related death.

Respiratory System:

Respiratory issues are more likely to occur as a result of thermal inversion. Thermal inversion is when a layer of hot air traps cool air and even pollutants near the Earth's surface. These events are becoming more common due to climate change. This is particularly bad for the human respiratory issues since this inversion traps harmful pollutants and contains them close to the surface.

Extreme rainfall and rising temperatures also can contribute to indoor air quality problems. For example, they can cause the growth of mold indoors, which may lead to worsened respiratory conditions for people with asthma and mold allergies and heightened challenges in maintaining adequate asthma control.

Smoke exposure, such as smoke from wildfires, increases respiratory and cardiovascular hospitalizations, emergency department visits, medications, and hospitalizations for asthma, bronchitis, chest pain, chronic obstructive pulmonary disease (commonly known by its acronym, COPD), respiratory infections, and medical visits for lung illnesses.

Mental Health:

Wildfires such as forest fires and natural disasters can be traumatizing for people and lead to poor mental health.

Certain chemicals of climate change such as the burning of fossil fuels (a main cause of climate change) can release toxic metals into water streams. An example of this is that the combustion of coal can often lead to the release of lead into water streams and groundwater which can have harmful effects on the CNS. Lead poisoning can lead to learning disabilities, behavioral problems, slowed growth and development, and hearing/speech problems.

Historical development of industry and commerce in New England occurred along rivers, canals, coasts, and other bodies of water; these areas often have a higher density of industrial facilities, residential management facilities, and petroleum storage facilities that are potentially vulnerable to flooding. As a result, increases in flood frequency or severity could increase the spread of contaminants into soils and waters. Flooding in increased risks to human health. Soil erosion and soil runoff—including manure, fertilizer and pesticides—are linked to excess nutrient loading of water bodies as well as possible food safety or public health issues from food and waterborne infections.

The increasing prevalence of shell disease in lobsters and several pathogens in oysters have been associated with rising water temperatures; other pathogens that infect shellfish pose risks to human health.

Digestive System:

Food security is being threatened as well. Climate change is expected to threaten food production and certain aspects of food quality, as well as food prices and distribution systems.

→ Prices are expected to rise in response to decreased food production. Food insecurity increases when food prices rise.
→ In such situations, people cope by turning to nutrient-poor but calorie-rich foods, and/or they may turn to hunger, with consequences ranging from micronutrient malnutrition to obesity.
→ Elevated atmospheric CO₂ is associated with decreased plant nitrogen concentration, and therefore reduced protein, in many crops, such as barley, sorghum, and soy. This leads to lower levels of nutrients such as calcium, iron, zinc, vitamins, and sugars.
→ Our food both becomes less nutritious and our food becomes less available, particularly for groups that can not afford the food as prices continue to increase.

Air and water temperatures, precipitation patterns, all known to affect disease transmission, are also known to affect mental health. For example, research demonstrates reactions to abnormal events, post-traumatic stress disorder among people affected by Hurricane Katrina, and similar interactions have followed other natural and heat waves. Some research suggests widths of heat waves and climate change. Other research demonstrates that intensely hot exposures are also associated with increased pre-term birth, low birth weight, and maternal complications.

Skin:

Skin cancer is becoming more common due to rising temperatures and the thinning of the ozone layer. Ozone layer depletion leads to a decrease in the amount of UV rays absorbed so more of these UV rays hit Earth. These rays can mutate cells and lead to DNA mutations which leads to skin cancer.

Climate will potentially lead to shifts in precipitation patterns, more frost-free days, warmer seasons, higher temperatures, and more carbon dioxide (CO₂) in the atmosphere. These changes can affect long-term weather patterns and can affect the create and how much it rains. These effects affect our health (the "adversity of pollen"), how much pollen we are exposed to, and our risk of experiencing allergy symptoms.

People with allergies can have various allergic reactions, such as hay fever or allergic reactions to pollen.

- Pollen exposure can also trigger symptoms of allergic conjunctivitis. Allergic conjunctivitis is the inflammation of the eye.
- Some people with allergies are more likely to those with respiratory illnesses.
- People with respiratory illnesses like asthma are more sensitive to pollen. Exposure to pollen may lead to asthma attacks and increases in hospital admissions for respiratory illness.

FACT: Medical costs related with pollen exceed \$3 billion every year, with many half of those costs being linked to respiratory problems.

Sea Level

- The increase in Ocean temperature has caused the sea level to rise, which leads to flooding



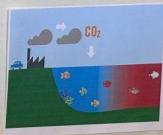
Coral Bleaching

- Ocean temperatures rising stresses the coral and lose its algae
- The coral will turn white
- If the temperature doesn't decrease, the coral will die

The Effects Of Climate Change On Oceans

An increase in:

- The use of fossil fuels
- Deforestation
- Industrial Agriculture



Have increased the amount of Greenhouse Gases, like CO₂

The Ocean absorbs this excess heat in order to keep the Earth cool, over 90% of the heat and 25% of the CO₂



Habitats

- A decrease in Oxygen levels causes the fish to suffocate in their natural habitats
- Ocean Warming can contribute to melting the polar ice caps

This all causes a decrease in biodiversity



Acidification

- The ocean absorbing CO₂ leads to Ocean acidification which harms organisms with shells such as:

- Shellfish
- Coral
- Oysters





Re-joining the Paris Agreement

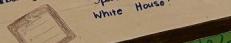
The Paris Agreement is a global framework made to avoid reaching deadly warming temperatures—anything above 2°C. It hopes to unite the world in climate action.



National Climate Task Force

Hopes to:

- reduce US greenhouse gas emissions by 50% below 2005 levels.
- 100% carbon free electricity by 2035. Sponsored by the White House!



HOW EFFECTIVE ARE THEY?

The answer really depends. Optimistically, these are great! Pessimistically, these don't do anything. All in all though, these are steps in the right direction.

CAPITALISM

DEATH

Climate Change Policy. What can we do?

WHO TO AVOID.

bp oil...

BP oil, or British Petroleum, is a leading oil and gas company. They're the sole reason why so many oil spills plagued our oceans. *Ocean*
Responsible for the "BP oil spill".

Shell...

The most egregious example of "greenwashing". Shell produces an insane amount of gasses and releases it into our environment.

HOW TO HELP?

- Vote, and know who you're voting for and what they stand for.
- Educate yourself and others
- Climate activism groups

OTHERWISE...

Willow Project

The Willow Project is an oil-drill project on the North Slope of Alaska. Oil drilling leads to effects such as disruption of migratory pathways and degrad

Germany's Automotives

Germany is single-handedly stopping the EU from going full cleanlantern due to the power they have in the oil-run automotive industry. They will keep using these cars because of the high profit yield.

YOUR CARBON FOOTPRINT

Originally, one of the biggest 21st century scams, the "carbon footprint" is a hook. This is an idea made and fed to the population by big corporations.



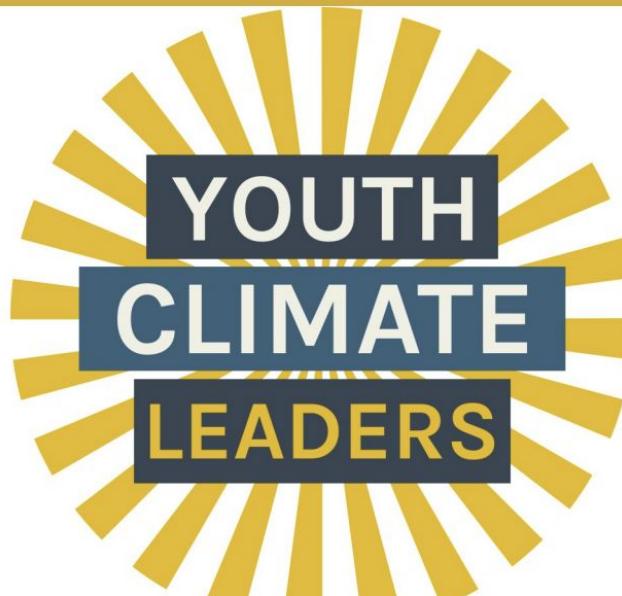
Recycles!



What can we do?

Central Massachusetts Youth Climate Action Showcase

[Download](#)



Thursday, April 27
2:30-3:30 PM

Broad Meadow Brook Wildlife Sanctuary
414 Massasoit Road, Worcester, MA 01604

**Join us in person or via Zoom to celebrate
and amplify youth climate action!**

Please contact sbertrand@massaudubon.org for more information.

What are you proud of? What's been successful?

- Successful: People came! People stayed! There were many engaging conversations, people asking questions. It was FUN!
- Proud of: The work we did to prepare for the fair; so many team members participated in making a poster, the quiz, the trivia box, the games, etc. Everybody showed up prepared! So many community members supported us: teachers and students who attended, outside supporters (Paul, Christine, Sarah)

What's been challenging?

- Gathering information; having enough time to make preparations; ensuring we had a good number of attendees but not too many

What are your next steps?

- Doing it again?! Making it an annual event?! (Holding a fair about the current issue each year, not necessarily a Climate Fair?)
- Using the information gathered and the posters for our presentation at the Envirothon Competition

How can this community and the broader regional community support you?

- Continued financial support for future events (snacks, prizes, decorations, etc.)
- Come to the fair!
- Publicize the event with good press to show what youth are accomplishing

Saturday, Jan. 28
9:30am-2:00pm

Meet at Doherty at 8:50am
Return to Doherty at 2:15-2:30pm



What to bring:
Refillable water
bottle
Warm clothes
Sturdy shoes
Notebook/pencil

If you have any last minute questions or emergencies, call/text Ms. Hill at 508-612-5228.