Children's Environmental Literacy Foundation

2022 VIRTUAL STUDENT SYMPOSIUM

CELF CIVIC SCIENCE RECAP + IMPACT REPORT

MARCH 11, 2022

Virtual - Nationwide

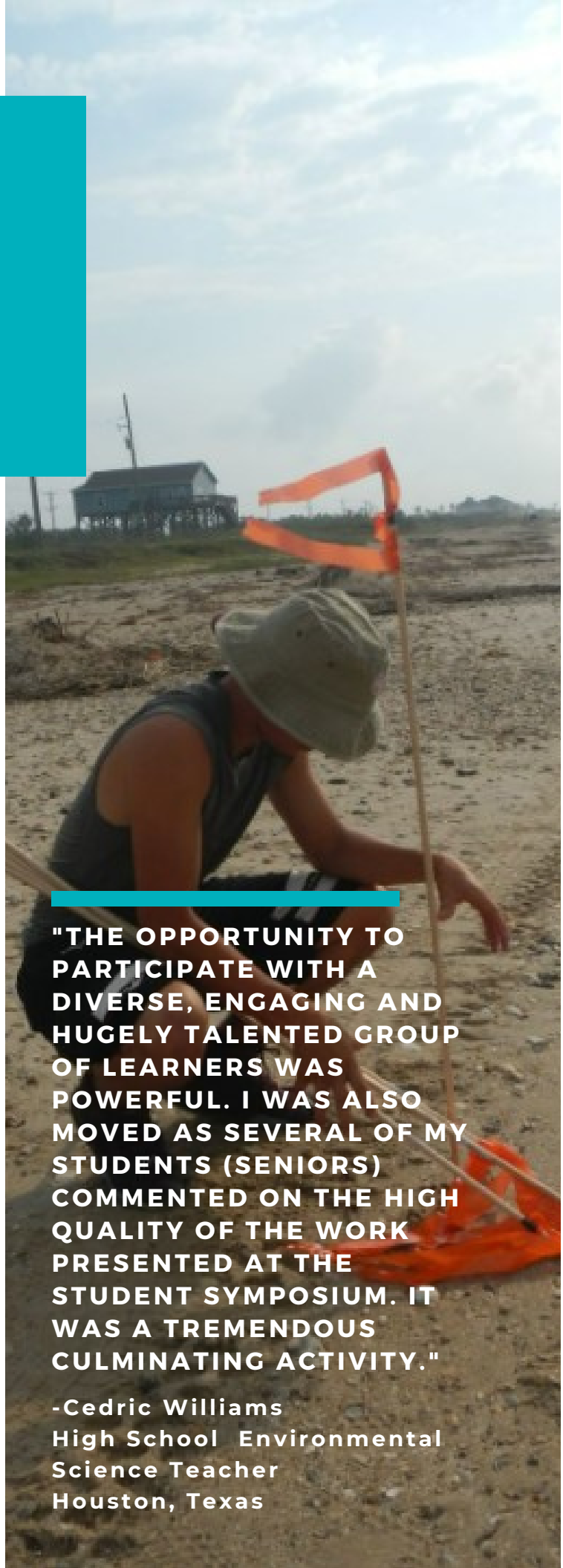
CHILDREN'S ENVIRONMENTAL LITERACY FOUNDATION

ABOUT THE STUDENT SYMPOSIUM

On **March 11, 2022**, CELF hosted its 4th Annual Student Symposium event as a fully virtual interactive experience. Over 200 people attended, becoming part of a transformative, national platform for our youth participants.

This culminating event for the ***CELF Civic Science: Inquiry-to-Action Program*** brings young civic scientists together to share their research projects, data, and solutions for pollution remediation and environmental stewardship with community members, field experts, policy makers and peers from schools across the country.

Whether separated by a few city blocks or hundreds of miles, the connections students felt to one another and the environmental challenges - and solutions - they each set out to discover was palpable.



"THE OPPORTUNITY TO PARTICIPATE WITH A DIVERSE, ENGAGING AND HUGELY TALENTED GROUP OF LEARNERS WAS POWERFUL. I WAS ALSO MOVED AS SEVERAL OF MY STUDENTS (SENIORS) COMMENTED ON THE HIGH QUALITY OF THE WORK PRESENTED AT THE STUDENT SYMPOSIUM. IT WAS A TREMENDOUS CULMINATING ACTIVITY."

-Cedric Williams
High School Environmental Science Teacher
Houston, Texas

celf

celf CIVIC SCIENCE

PROJECT HIGHLIGHTS

STUDENT RESEARCH & TAKEAWAYS

"WE ARE EXTREMELY GRATEFUL FOR THIS OPPORTUNITY TO TACKLE A SIGNIFICANT ISSUE WITHIN OUR LOCAL COMMUNITY AND APPLY THE KNOWLEDGE GRANTED TO US BY RIO GRANDE EDUCATORS OUTSIDE THE BOUNDS OF OUR OWN CLASSROOMS."

-High school student
(pathway: water quality)
Rio Grande High School, Rio Grande City, TX

With guidance from their CELF-trained teachers, students from Texas and New York explored a range of environmental justice issues related to air quality, water quality, food composting, sidewalk access and beach erosion. Students worked collaboratively to formulate a hypothesis and collect data in order to find an answer to their driving question modeling the ***CELF Inquiry to Action Framework***.

Student-selected topics of inquiry included:

- Impact of air quality (AQ) on community health
- Sidewalk access and pedestrian safety
- Beach erosion
- Community pollution remediation

The following pages feature 5 of the 26 student projects presented at the 2022 CELF Student Symposium

STUDENT POSTER HIGHLIGHT

WALKABLE CITIES: SIDEWALKS AND SAFETY

BLANSON CTE HIGH SCHOOL, HOUSTON, TX

PROJECT OVERVIEW

After completing CELF's place-based mapping activity, students zeroed in on a lack of continuous sidewalks around their school and the surrounding community. These breaks in the sidewalks mean students often have to walk through mud or into busy, unsafe streets to reach school on foot.

Through their **video presentation** "Walkable Cities," Blanson students interviewed school and community members to highlight the dangers for pedestrians in their neighborhoods. They discovered that this inequity traced back to a lack of safety enforcement.

STUDENT ACTIONS TAKEN

Student-written bill to address pedestrian safety through sidewalk upkeep and bike lanes.

Meeting with a Houston city representative to discuss the student bill and the "Walkable Cities" project.

KEY CONNECTIONS TO SUSTAINABILITY

- FAIRNESS/EQUITY
- PLACE

STUDENT POSTER HIGHLIGHT

RIO GRANDE WATER QUALITY TESTING

RIO GRANDE HS, RIO GRANDE CITY, TX

PROJECT OVERVIEW

Students investigated the water quality of their local watershed on the Rio Grande River. They sampled water from three locations near Rio Grande City and performed standard water quality testing of turbidity, acidity, salinity, oxygen and bacteria content.

Students were dismayed to find fecal coliform bacteria at all three sites and were motivated to think about educating the public.

In addition to educating their community, students are excited to expand their research to new sites.

STUDENT ACTIONS TAKEN

Local legislator outreach to present data and findings along with ways to improve water quality for the overall watershed area

Extended research into next year and expanding the number of testing sites.

KEY CONNECTIONS TO SUSTAINABILITY

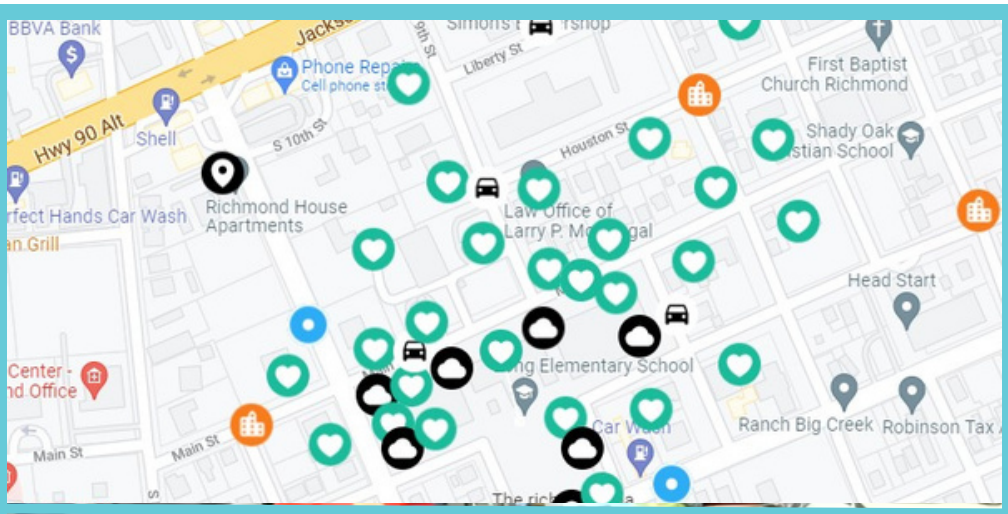
SYSTEMS

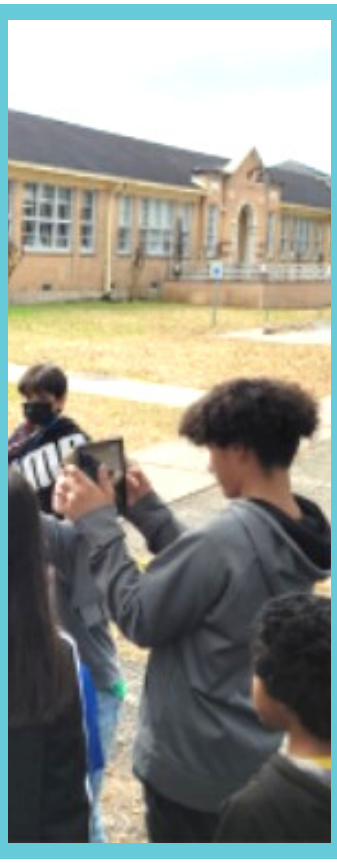
COMMUNITY

STUDENT POSTER HIGHLIGHT

VEHICULAR AIR POLLUTION: 3RD GRADE OBSERVATIONS

JANE LONG ELEMENTARY SCHOOL, RICHMOND, TX





PROJECT OVERVIEW

Ms. Ivon's 3rd grade class explored the effects of air pollution caused by vehicular traffic. Students started by learning about the effects of pollution.

Outside, they made visual observations and used the Air Casting website to record the corresponding AQI. They arrayed these data in maps and graphs. On the map, green hearts represented trees and black cars represented traffic areas.

Students discussed how to reduce pollution around the school campus.

STUDENT ACTION TAKEN

Solutions for the principal: Students are working on proposals to decrease the amount of vehicular pollution on the school campus.

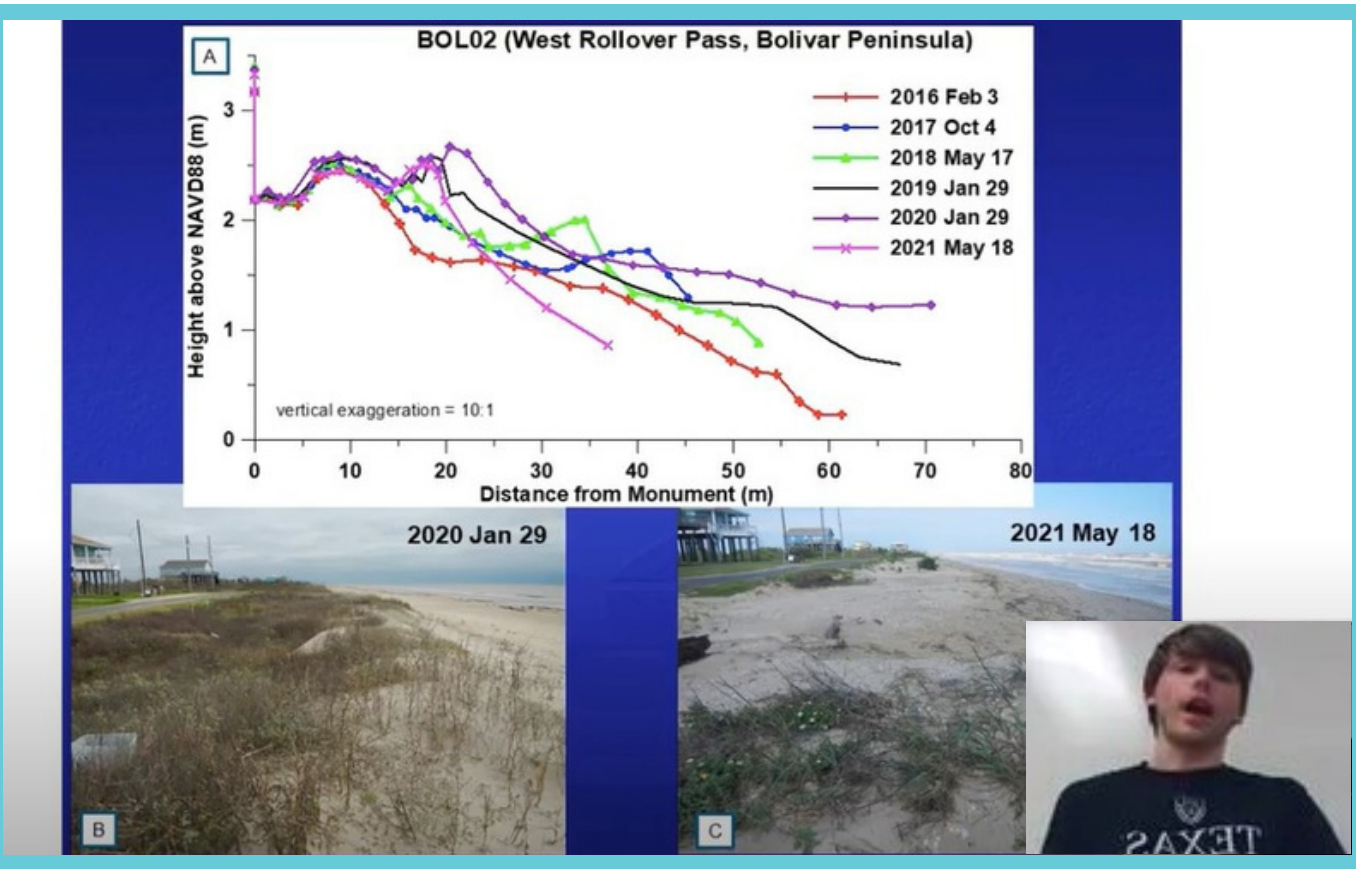
KEY CONNECTIONS TO SUSTAINABILITY

- ABILITY TO MAKE A DIFFERENCE
- INTERDEPENDENCE

STUDENT POSTER HIGHLIGHT

COASTAL EROSION: A MULTI-YEAR STUDY

HIGH ISLAND HIGH SCHOOL, HIGH ISLAND, TX



PROJECT OVERVIEW

Since 2016, 10th grade Students at High Island High School have been investigating the rate of beach erosion on the Bolivar Peninsula and its effects today and into the future.

Students collect data from three sites using permanent markers set in place by the Texas High School Coastal Monitoring Program (THSCMP).

Using this data, High Island students created a beach profile to predict the volume of sand currently on the beach, as well as the beach shape. Students also used GPS and GIS software for to map the shoreline.

STUDENT ACTION TAKEN

Public presentations and video to increase awareness of coastal erosion, at the CELF Student Symposium and in meetings with the High Island school board and the Bolivar Peninsula Special Utility District board.

KEY CONNECTIONS TO SUSTAINABILITY

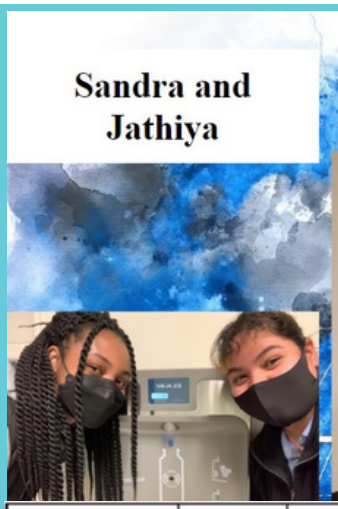
LONG-TERM EFFECTS

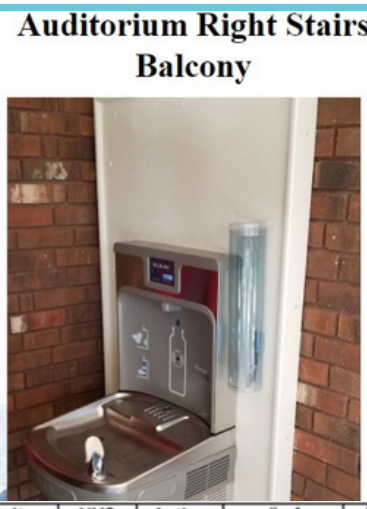
LIMITS

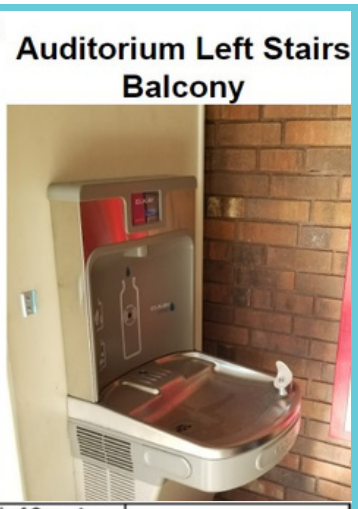
STUDENT POSTER HIGHLIGHT

HOW SAFE IS THE DRINKING WATER IN SCHOOL?

NEW ROCHELLE HIGH SCHOOL, NEW ROCHELLE, NY







Contaminant	Violation Yes/No	Date of Sample	90th Percentile (Range)	Unit Measurement	NYS DOH MCLG	Action Level (AL)	# of Samples Taken	# of Samples Over the AL (Range)	Likely Source of Contamination
Lead & Copper									
Lead [G]	No	2019	6.92 [D] (ND - 108) [E]	ppb	0	15	53	3 (42.8 - 108.0)	Corrosion of household plumbing; erosion of natural deposits
Copper	No	2019	0.16 [F] (0.005 – 0.369)	ppm	1.3	1.3	53	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

PROJECT OVERVIEW

After learning about Flint and recent news of lead in drinking water, students felt it was important to assure that their drinking water is safe at New Rochelle High School in New York.

Students first tested water from bottle filling stations throughout the school. Although filter status was red for one station and not active for two others, the drinking water from all stations was found to be safe to drink with lead levels below 15ppb.

Next, the students plan to expand the scope of testing beyond the filtered stations.

STUDENT ACTIONS TAKEN

Long-term monitoring to test additional water sources within and around the school

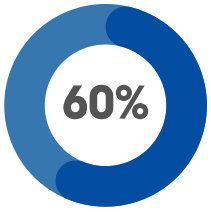
Identifying community education goals

KEY CONNECTIONS TO SUSTAINABILITY

LONG-TERM EFFECTS

FAIRNESS/EQUITY

CIVIC SCIENCE PARTICIPATION AND OUTCOMES BY THE NUMBERS



Teachers who reported increased student knowledge of **Environmental Justice**

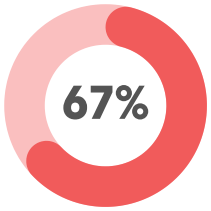
34

Educators participating in the Spring 2022 Civic Science program

Students who reported they can **influence others to take positive actions**

200+

Symposium attendees, including students, teachers, administrators, and community stakeholders

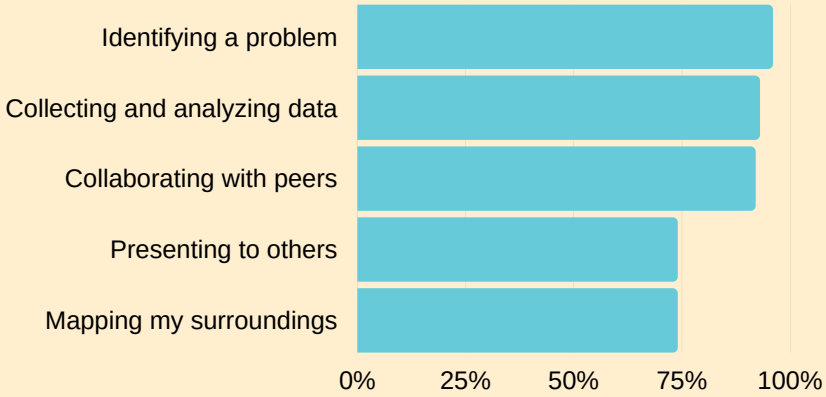


Title 1 Schools represented in cohort

4,100+

Students taught by participating teachers each school year

CELF asked students which skills they used during thier civic science projects?



Percentage of student respondents, n=129

> I thought that it was amazing and we got to hear other kids our age, and some Kids older. we also learned more about what other people would like to change in the world. it was fun to just be a part of and be there.

MIDDLE SCHOOL STUDENT
Young Women's Leadershp Academy, Grand Prairie, TX

> This program gave me wonderful ideas and examples for how to engage students and their community in these important concepts! I have been wanting to develop ways to integrate civic science into our gardening club and within my lessons, and these seminars were loaded with great information.

LISA-MARIE RASBERRY
Middle School Science Teacher, Houston, TX

SYMPOSIUM PARTNERS & SUPPORTERS

NATIONAL GEOGRAPHIC SOCIETY

Linde

The San Diego Foundation
Growing a Vibrant Region

FIRSTRESERVE

plume labs

McMac Cx

WCF WESTCHESTER COMMUNITY FOUNDATION
A DIVISION OF THE NEW YORK COMMUNITY TRUST

With special thanks to our individual supporters: Lise Strickler & Mark Gallogly, Diane Fletcher-Hoppe, the Krueger family and CELF's Board of Directors