O'Connell College Preparatory School Advisor: Nina Corley
OC Green Team "Full Steam Ahead"
"Put the Green Back in Galveston" Recycling/Gardening/Teaching Green Team Project

Energy… What it is…Where it is…How we can use it…How we can conserve it…What we can do to Recycle and Reuse Products in order to Conserve Energy…How to make the most of what we currently possess in order to maintain our reserves …

What can we do to create a better future?

Our school year began with "Science of Energy" giving us an understanding of Energy and Energy transformations, leading us to research the different forms sources of available Energy. We expanded our study through" Energy Works" to discover the things energy does—heat, light, motion, sound, growth, and powering technology and from there to "Thermodynamics". We then immersed ourselves in the study of petroleum based and alternative fuels, how they provide energy, where they can be obtained and the Career Opportunities related to each source through "Fossil Fuels to Products", "Transportation Trio" and "Transportation Fuels Enigma". We moved on to "H2 Educate" to expand our horizons in searching for energy solutions.

We concentrated on Careers this year increasing the number of visiting professionals to our school, added skyping with a Climate studies student from NYU Abu Dhabi who is doing research in the Himalayas on folklore and how it helps to tell the story of Climate change for the Nepalese. We participated in a live feed with an Astronaut Doctor on the ISS hosted at UTMB, and were able to ask live questions which she answered. Had a professional in the Oil Industry give us a personalized tour of the Ocean Star Drilling Rig Museum and a retired NASA aerospace engineer give us a guided tour through the starlight Gallery while sharing about the different careers that are opening up in the new race for Mars.

Keeping to the emphasis of sources in our geographic location we concentrated on fossil fuels, petroleum, the offshore industry and fuels related to life and travel in space, visiting the Ocean Star Drilling Rig, taking part in the Offshore Energy Career Day, Chemists from the American Chemical Society come out and share about their experience in the petroleum and plastics industry, and field trips to NASA, The Bryan Museum and Rosenberg Library's Museum.. We researched alternative fueled vehicles, types of recycling, reuse, conservation, and the impact each source makes on our carbon footprint the world and our island to determine what choices might be best for our future.

5 years of our green team working on determining the needs of our community lead us to use our outdoor garden classroom space in an expansion of our community outreach through presentations and displays featuring nutrition and the science behind recycling and plastics, continuing "Hunger Heroes" through the distribution of food in conjunction with the local food back to those in need in our community and partnering with Galveston's Farmer's Market where we helped institute a matching Market Bucks program, matching dollar for dollar those using food stamps to allow them to purchase fresh locally grown foods at the market and help with cooking and preparation for fresh food classes for kids. We added a Worm Garden. We have expanded our recycling project by helping to take in community recycling at the Farmer's Market, as Galveston has no organized recycling programs and taking in Recycling 2 days a week at the Bryan Museum. We continued the "Help Galveston Put the Green Back in Mardi Gras Recycle with the O'Connell Buccaneers" campaign to recycle during the Mardi Gras parades, the Lone Star Bike Rally, the Grand Kids Festival as well as the Featherfest Birding Festival and Dicken's on the Strand, as well as volunteering with the Iron Man races and marathons through race assistance and recycling collections. We created a recycling video displayed on our schools Facebook and set up informational booths and demonstrations on recycling plastic at the Farmer's Market and open house, as well as teaching people how to reuse by making non-electric speakers for cell phones re-using aluminum cans, plastic bottles, and glass bottles. We created a second" Beautified a Bucket" for trash collection on the Beach. Competed in the Wyland save our Oceans with a Banner. Provided Science Experiences for Elementary and middle school students at our school. We also took part in the Symbolic Monarch Migration through an exchange of letters pictures and information with schools from Canada to Mexico all along of the Migration Route of the Monarchs to help share what we have learned from our Butterfly Garden with others along the route.

Goal: To Learn about Petroleum Energy Industry Related Careers

Emphasis: Local Energy Related Jobs Opportunities in the petroleum industry

Activities and Tasks

1. Obtained permission from the Principal for a field trips.
2. Field Trip to the Offshore Energy Center Career Day
3. Hands on experiments and activities from The NEED Curriculum
4. Hands on Experiments and activities from the OEC Knowledge Box
5. Walking Field Trip to the Ocean Star Drilling Rig Museum by Oil Industry Professional
6. Identified Damage due to buildings due to Acid Rain during the walk Field Trip
7. Explored Careers in the Offshore Industry at the Career Day and hosted ACS and UTMB speakers skype interviews with Nepalese Graduate Student, live interactive experience with ISS Dr at UTMB
8. Studied about the Rigs to Reef Program
9. Took an energy career assessment
10. Shared the information we learned with the College Prep Classes at our school
11. Wrote and illustrated thank you notes to the Ocean Star, the Offshore Energy Center & Speakers

Energy Content and Resources

- Need Curriculum :Fossil fuels to Products, Exploring Oil and Gas, Transportation Fuels Info book, Transportation Fuels Enigma, Climate Change, Science of Energy, Transportation Fuels Rock Performances, Transportation Trio, Polymers and Auto Racing, Thermodynamics, H2 Educate Energy websites linked to the www.NEED.org
- Galveston Historical Foundation Architecture Guide
- PE3 book from OEC Knowledge Box
- Playing With Petroleum Box
- Oil and Natural Gas Book
- Books from NOAA
- Energy 4 Me Curriculum

Exploring Energy Related Career Opportunities With Tim Travis ExxonMobil's Sr. Technical Professional Consultant for Global Outreach learning about the Science behind the offshore drilling industry at the Ocean Star Drilling Rig Museum.

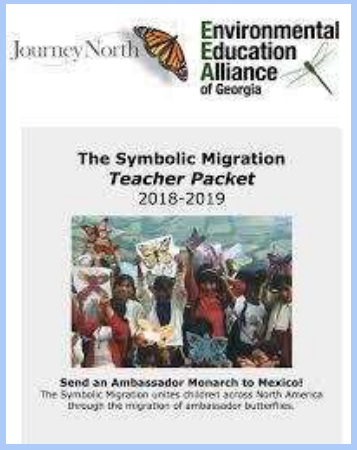
Goal : To Learn about the available Petroleum & Alternative Transportation Fuel Options To Create a Video Advertisement for Petroleum based or Alternatively Fueled Vehicle

1. Studied Petroleum :Breaking and Making Bonds
   Major sources of energy throughout history
   Octane rating in terms of chemical composition
   Evaluated biodiesel as an alternative to petroleum based diesel
   Alkanes, Carbon Atoms, Fractional Distillation
2. Researched alternative transportation fuels in use & in development
3. Performed experiments & recorded data
4. Researched and held a Transportation Fuel Debate
5. Researched and hosted a Transportation Fuel Enigma
6. Completed Group Projects creating Video Ads for Petroleum based and alternatively fueled vehicles that were presented to other classes
7. Shared information learned on Face Book site
8. Listened to a speaker who shared personal experiences with using their alternatively fueled Vehicle

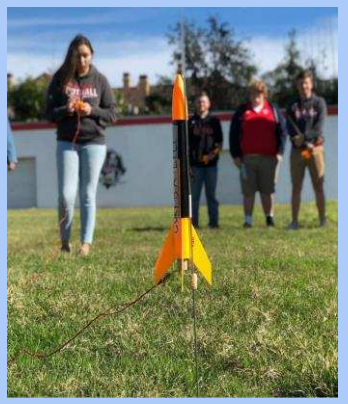
Energy Content and Resources

- NEED's Science of Energy, Transportation Fuel information booklets,, Transportation Fuels Debate, Transportation Fuels Enigma H2 Educate ,Exploring Nuclear Energy Uranium, Exploring Hybrid Buses Exploring Oil and Gas, Fossil Fuels to Products, Polymers and Auto Racing, Transportation Fuels Rock Performance, Transportation Trio
- Chemistry in the Community Text Book
- Internet Research
- Energy Websites linked to www.NEED.org
- IMovie

Symbolic Monarch Migration Project We created Symbolic Monarch butterflies that were sent from Canada to Mexico and dispersed to other students along the actual Monarch Migration route and we in turn received butterflies from them. We wrote letters telling of the monarchs in our area and our butterfly garden.



Goal: To Learn about the Sources of Energy that Available on Earth & for Travel in Space.

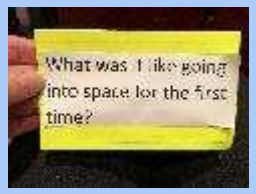


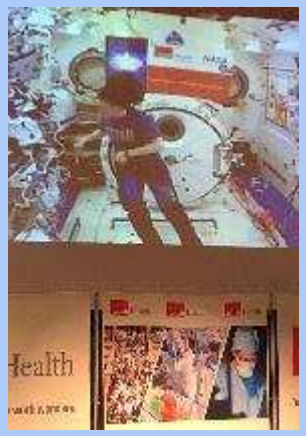
1. Completed Exploring Solar Energy, Science of Energy
2. Participated in activities and experiments from JAXA
3. Obtained permission for field trips.
4. Field trip to NASA
5. Listened to Astronauts and Industry Leaders
6. Researched Solar Energy & its implications in Space
7. Researched Energy related careers in the Space Industry & Medicine
8. Supported the Breast Cancer awareness week
9. Toured NASA Shared information learned on Face Book site
10. Shared what we learned with middle school and elementary school students
11. Used Hollywood movies to research the Space Program
12. Wrote thank you notes to the speakers and our host at locations of field trips.

Energy Content and Resources

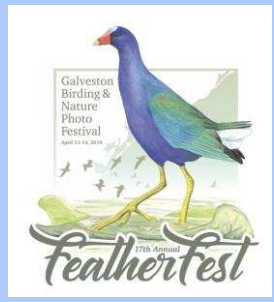
- NEED Curricula including Energy from the Sun, Energy Enigma Understanding Climate Change, Energy information Book, Mission Possible.
- JAXA curriculum & NASA Resources from the Internet and Printed
- Civil Air Patrol Curriculum and Stem Kits model plane , simulator, telescopes, robotic arms, quadcopter, weather station
- The Dish ,Gravity, The Right Stuff, October Sky, and Apollo 13 Movies
- Field Trip to NASA Speaker Captain Duffy from NASA

Learning About Energy Related Careers in the Space Industry
Energy Sources Available in Space Exploration
Asking questions via live FEED with the International Space Station Via a Link at UTMB & NASA Field Trip





Goal: Learn about Recycling
Share that information
Participate in and help to expand OC's recycling program into the community through the Bryan Museum and Farmers Market and sharing about the Science Behind Recycling at the Farmers Market and Open House
Painting the bucket for the beach contest



Activities and Tasks

1. Obtained permission from the Principal to conduct each activity.
2. Made announcements to the school over the loud speaker
3. Sent out emails to all the parents
4. Advertised on the School Website and Facebook pages
5. Put up Posters around the school
6. Won 1st in the Pepsico recycling Program… which provided us with more recycling bins to place about the school and prize money helped send 1 student to Youth Awards.
8. Made a recycled plastics display at the open house and manned the display to answer questions.
9. Placed recycling bins at football games, basketball games on the school grounds, the cafeteria
10. Recycled newspapers/ donating to the local humane society to be recycled.
12 Special recycling project during "Dickens on the Strand" , during the" Lone Star Bike Rally", The Grand Kids Festival
13 13. Recycling projects during "Mardi Gras" Help OC put the Green Back in Galveston's Mardi Gras
14. Recycling and community service projects during marathons and iron mans (Gritty Goddess)
15. Developed a reuse project and contest making non electric speakers for Cell phones
16. Set up Booth at Farmer's Market to share information on the Science behind plastic and Recycling
17. Set up Booth at Farmer's Market to make Speakers from Cans and bottles

Energy Content and Resources

1. NEED's Energy Info Books, Science of Energy, Energy Works, Fossil Fuels to Products, Talking Trash
2. Pamphlets from the Ocean Conservancy Society
3. Pepsicorecyling program curriculum
4. Energy Webs sites linked to WWW.NEED.org
5. Community Volunteer to help with Glass bottle cutting

“Beautify the Bucket” & “Save Our Oceans” Banner










We provided Informational displays and Hands On Demonstrations about the Science Behind Recycling and benefits of reuse at the Farmers Market, while providing recycling pick up and presented at Open House.

We continued to partner with our local food bank to participate as" Hunger Heroes" helping distribute food we helped collect along with fresh produce from our garden, to those of our community in need

Goal: To Improve and Expand our Outdoor Garden Classroom

Activities and Tasks:

1. Obtained permission from the Principal and board to conduct the activity.
2. Researched different types of Gardens and sought out the advice of area experts
3. Students put advertisement on Facebook and the website asking for donations
4. Spanish Teacher worked to help improve our garden and bring in new plants.
5. Worked with the Galveston farmers market. The farmers market takes food stamps and gives people double the face value in food to help get fresh locally sourced food on their tables.
6. Owner of Organic Dew Organics came out to advise
7. Worked with Spanish teacher to learn terms to help translate presentations for native Spanish speakers
8. Donations were made from a local nursery
9. Planted Seeds in classes , brought up to seedlings and planted
10. Students built the above ground garden structures to go along side the outdoor garden planter box classroom and added new types of gardening techniques around them.
11. Students worked with multi-generational volunteers. Some of the older members of our community, grandparents, past alumni came in to help lend their expertise and help in building the garden and planting more plants.
12. Shared what was learned with visiting teachers and students from other schools
13. Sent thank you notes to the people who helped with the garden.
14. Worked with the local food bank to collect food and distribute excess from our school garden along with the collected food to those in need in the community.
15. Worked with Farmer's Market and the Kitchen Chick to help teach cooking classes to kids using garden produce.
16. Certified School yard Habitat
17. Added a new Worm Farm

Energy Content and Resources

- NEED's Chemistry and Energy Efficiency Energy Works
- Textbooks
- Agriculture Extension Agency
- Jr. Master Gardener Curriculum
- Texas A&M Galveston
- Morning Dew Organics
- Internet resources
- Kitchen Chick

Outdoor Garden Classroom / Kids Cooking Classes with Vegetables donated from our Garden in conjunction with Farmer's Market and Kitchen Chick and Added a new Worm Farm.











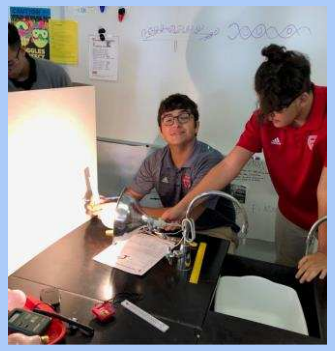




Career Day with the Offshore Energy Center at the Ocean Star Drilling Rig Museum Galveston Island Texas

OFFSHORE ENERGY CENTER

Learning Energy and Sharing what we learned with others!



Hours Spent working on the Projects

- 1500 collectively @ 700 for garden and cooking classes 500 Recycling 200 hours Food Bank Distribution 100 Farmers Market

- 11 coordinators 3 Seniors, 2 Juniors, 3 Sophomores, 3 Freshmen