APW JR SR HIGH SCHOOL

Science Club

CARNIVAL OF ENERGY

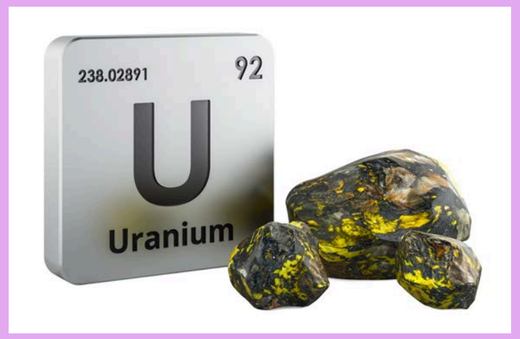
Nick Vanpatten, Joe Steele, Lillian Horning, Kristyn Klaisle, Levi Balcom, McKenna McEwen.

Advisor: Miss Halsey

GOALS

Carnival Goals

1) We want to help students and kids learn about energy and science with a hands-on, fun experience.

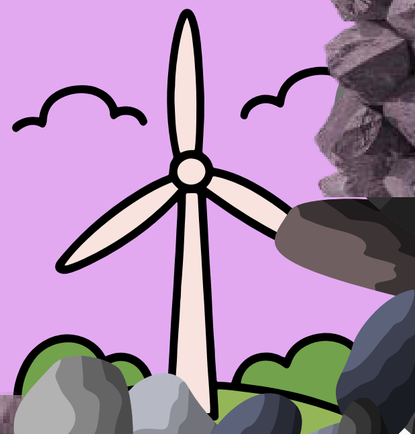


Uranium Goals

1) Our plan is to prove how useful uranium is. Even though uranium is radioactive, it's one of the safest forms of energy, and it is used for power plants, powering many more useful things.

Wind Energy Goals

1)Our team's goal is to show that wind energy is a useful and non-harming way to provide energy to farms and cities.

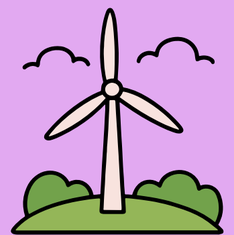


WHY WE WANNA HAVE THE CARNIVAL

WE WANNA HELP KIDS AND STUDENTS FIND SCIENCE AND ENERGY MORE FUN AND ENTERTAINING. WE KNOW THAT ENERGY CAN BE CONFUSING AND APPEAR BORING, BUT WHEN YOU DEEP DIVE INTO IT, YOU CAN SEE HOW FUN AND INTERESTING ENERGY IS. THE WAY WE WANNA SHOW THIS IS BY GIVING PEOPLE A HANDS-ON EXPERIENCE SO THEY'RE NOT JUST STUDYING TO LEARN THINGS. WE HOPE TO GIVE POSITIVE REINFORCEMENT WHEN THEY BEAT GAMES WE HOPE TO SET UP BY GIVING THEM ENERGY BUCKS RANGING FROM A ONE DOLLAR ENERGY BUCK TO A FIVE DOLLAR ENERGY BUCK BASED ON HOW WELL THEY DO ON THESE GAMES.

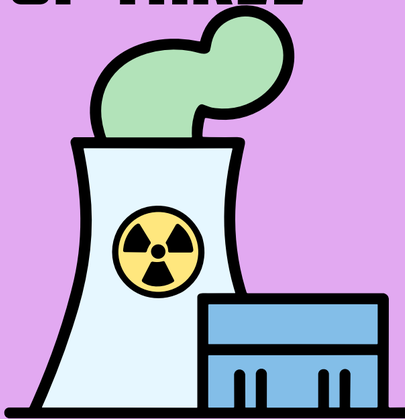
WHY WIND ENERGY IS SO IMPORTANT

Wind energy is one of the safest and most useful ways to get energy. Wind energy doesn't cause pollution since it is clean and renewable, unlike a lot of other ways to get power/energy. The reason it is so important is because lots of farms and cities rely on wind energy, having wind turbines all over. Also, if you are ever traveling to the Adirondacks, a nice wind farm you can visit is the Lowville Wind Farm, which powers over 160,000 homes!



THE IMPORTANCE OF URANIUM

URANIUM CAN BE USED FOR SO MANY THINGS, LIKE POWER PLANTS GIVING OUR CITIES POWER. THE REASON WE NEED URANIUM IS BECAUSE WITHOUT IT SO MANY PEOPLE WOULDN'T HAVE POWER. IF YOU'RE EVER IN OSWEGO, YOU CAN GO SEE THE NINE MILE POINT POWER PLANT. THIS POWER PLANT POWERS OVER 1 MILLION HOMES! ALSO, NINE MILE IS CONSIDERED A LOW-CARBON / EMISSIONS-FREE ELECTRICITY SOURCE. IN NEW YORK,URANIUM IS ALSO ONE OF THE TOP THREE ELECTRICITY GENERATORS.



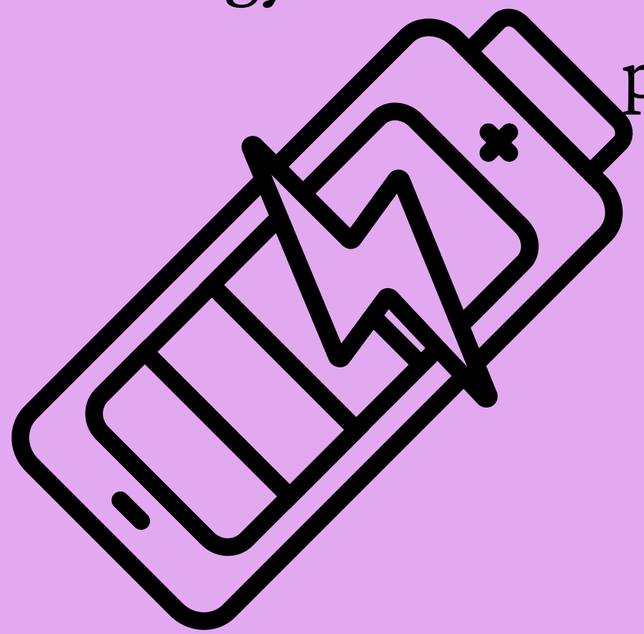
ENERGY CARNIVAL

Info about the Events

1. LIGHTS OUT

McKenna's Activity

To play said activity, your team needs to solve energy words before a battery runs out of power



2. TOP FIVE

Nick V's Activity

On the board, there will be a category where the students will have to guess the top five answers.

ENERGY CARNIVAL

3. Wheel of Energy
Lillian/Levi's Activity

This activity is like the game show "Wheel of Fortune." A member of your team spins the wheel. If it stops on one of the 5 categories, you get asked an energy question, and if you answer correctly, you get some energy bucks!

4. Throwey Questiony
Kristyn's Activity

Students have to throw a ball at a wall and then answer questions based on the target they hit.

ENERGY CARNIVAL

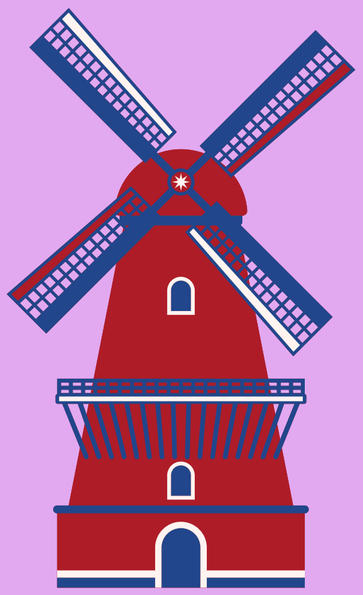
5. Source Separation

Joe's Activity

People throw recyclables into a bin. The goal is to get the recyclable in the right spot. If they do, they get to answer a question. If they get the question right, they get energy bucks.

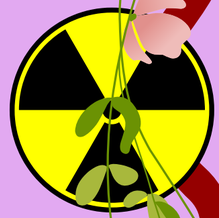
WINDMILL CHALLANGE

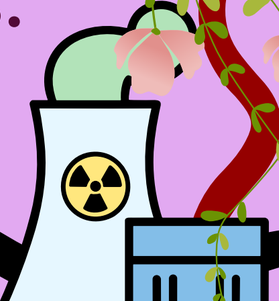
THE PLAYER WILL HAVE TO BUILD A MODEL WINDMILL AND CHOOSE A BLADE FOR THE WINDMILL THAT THEY THINK WILL PICK UP THE MOST PAPER CLIPS IN THE AIR. WE ARE GOING TO SIMULATE WIND BY USING A FAN. WE WILL THEN USE AN ANEMOMETER TO CALCULATE THE SPEED.



NUCLEAR POWER PLANT SIMULATION

The operation of a nuclear power plant can be quite difficult to visualize with all of its systems, gauges, valves, backup systems, and alarms. However, the basic process is pretty simple. This simulation allows students to walk through the process. In that simulation, students will represent the critical parts of a nuclear power plant: control rods, fuel rods, circulating water, and generation and transmission lines. Energy is represented using “energy chips.”





ENERGY CARNIVAL RESULTS

Testimonials

Liked “Everything”

“Learning while playing games”

“Getting to learn about energy trivia and get prizes”

“The kids did such a great job. I learned a lot.”

RESULTS OF WINDMILL CHALLANGE TESTIMONIALS

“It was fun”

“I loved this activity because even with such simple things its amazing we can create wind energy”

“I liked because

1. group effort
2. I made a good windmill
3. Fun activity we all got to share together”

“I liked this because it was about wind”

“It involved our brains”

RESULTS OF THE NUCLEAR POWER PLANT SIMULATION

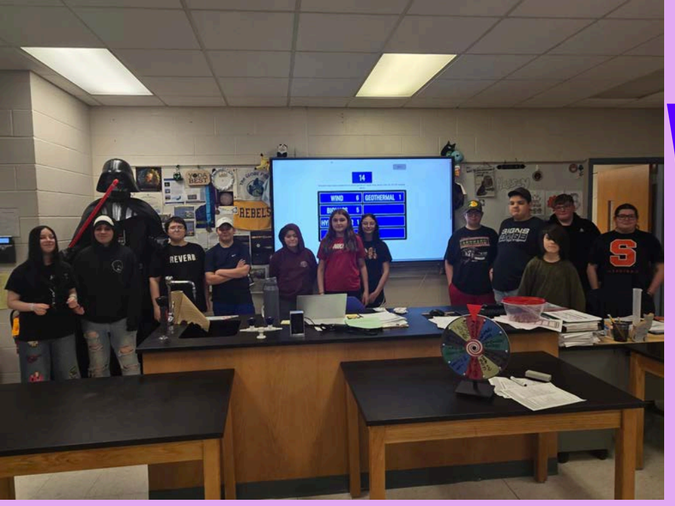
TESTIMONIALS

‘It was both easy yet complicated.”

“Maybe find out what kind of nuclear plant Nine Mile is and simulate that” One Loop vs Two

“I liked seeing how the water moves in the power plant”

We forgot to take pictures! Sorry



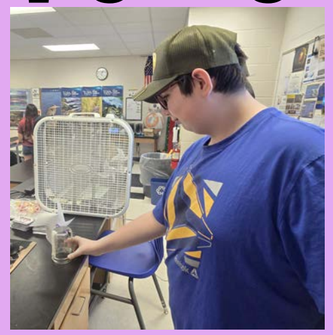
WHAT WE LEARNED

Nuclear energy is a powerful way to generate electricity for homes.

Wind energy uses a free natural resource.

It’s harder than it looks. It was fun.

Sometimes things don’t go how you want them to, but you’ve got to keep going forward.



FUTURE PLANS

- To expand on our energy types by including hydropower. Hydropower is one of NY's top three electricity generators.
- Have a monthly energy carnival.We will do diferent facts every month.
- We want to do our activities at the elementary school STEM night.