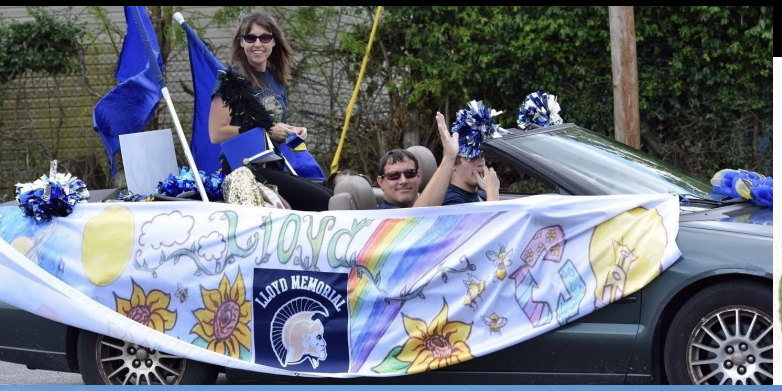
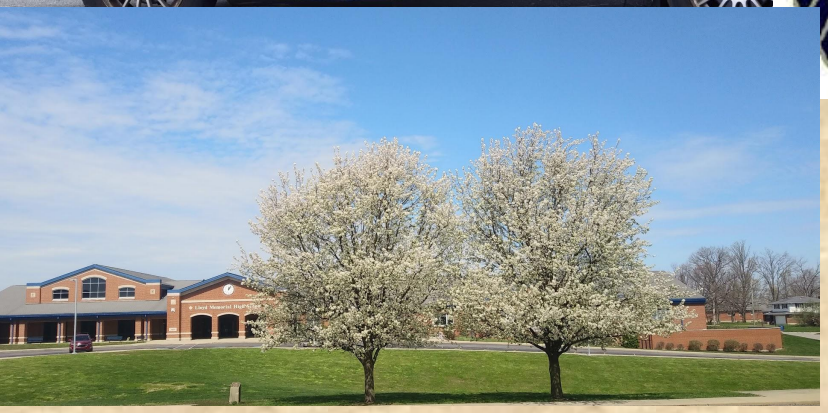
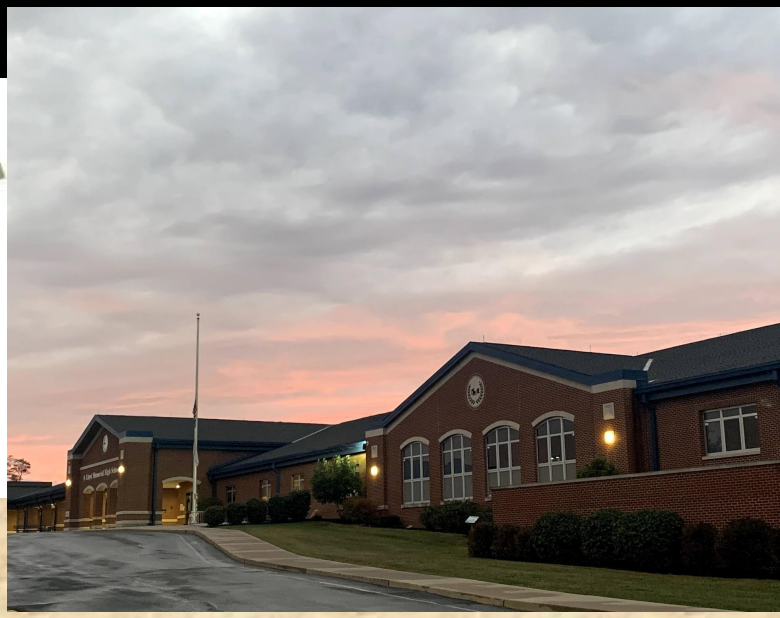






Lloyd Memorial High School

Energy Conservation Project 2020-2021

Can I Get A Watt Watt? – The Year of the Pandemic

Melissa Stolz

In our first (and hopefully last) year spent attempting to do great things during a terrible pandemic, we focused on being a community who cares for and appreciates the planet in the midst of being apart. We continued working in our community garden, partnered with the middle school energy club for a school-wide family STEM Outreach prior to the shutdown, provided socially distanced energy information and gifts for staff and families for Earth Day, as well as hosted an Earth Day scavenger hunt for students to complete with their families at home and on our campus during NTI. We continued our district-wide initiative to collect plastic caps to build "Buddy Benches" for each of our schools. In our building, we implemented a Blue Jeans recycling program, built a picnic table for outdoor learning, and added murals to our garden space

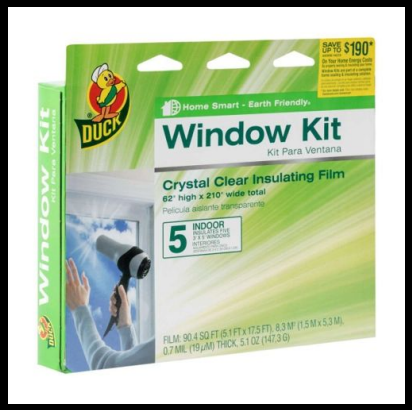
Our 5 Goals

1. Reduce the amount of energy used at Lloyd.
2. Partner with middle school students to educate others about conserving energy.
3. Reduce energy waste when producing raw materials by promoting recycling.
4. Increase energy awareness and conservation practices in our own community.
5. Provide energy conservation mentoring to elementary schools.

Goal 1 – Reduce the amount of energy used at Lloyd

Activity: Prior to the shutdown, we continued to improve energy conservation of heated/cool air by putting insulated film on the inside of the windows of the oldest part of our building.

Energy Content & Resources: District Energy Manager visited and shared information, consulted with our administrators and district facilities managers prior to our shutdown, NEED Energy Info books, Duke Energy kit ideas for potential solutions



Click here for our Energy Loss Post Survey

Leadership: Student Prior to the shutdown tudents were placed into groups to inventory, interview, and research solutions for individual teacher classrooms, then placed in teams to clean windows and install the film..

Evaluation:

We found a significant amount of thermal energy transfer because of old windows in classrooms, which has now been reduced. Teachers felt this loss of energy impacted student learning capability and are seeing positive impact.. Staff and students report positive feedback regarding changes as a result of our recommendations.

Goal 1 - Reduce the amount of energy used at Lloyd

Click here for Faculty Energy Survey!

Activities: Energy Superstars Patrol Contest was promoted, and monitored.

- Energy Superstars Breakfast was planned for faculty who have demonstrated shut-down practices regularly - this was modified to provide pre-packaged treats in mailboxes during pandemic
- We created a checklist for staff members for the entire district to direct them into how to properly shutdown their classrooms for long breaks in order to conserve energy and distributed them just before long breaks.
- We created announcements for students and staff to provide them with Energy Saving tips at the beginning of the day.

Energy Content and Resources: We got our chart from Saving Energy at home and school teacher guide and online energy inventories

Student Leadership: Completed monthly after school patrols to provide feedback and track compliance in all rooms. Read announcements, provided pre-packaged treats and thank you notes in mailboxes to the Superstar teachers

Evaluation: We will continue monitoring light usage around the building. Teachers are continuing shutting their classrooms down completely at 93% compliance. We will survey teachers again at the end of the year, Last year's similar efforts indicated increased awareness and positive feedback.

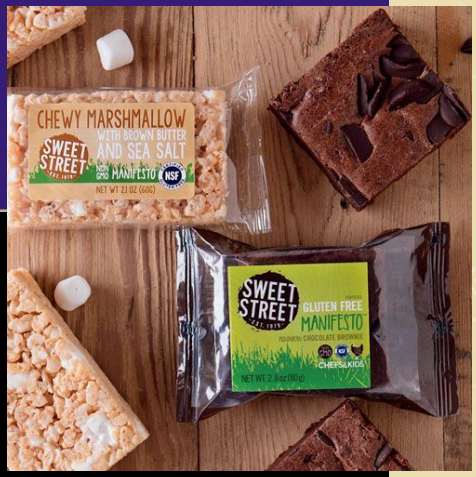
Classroom Checklist BEFORE Leaving for Break!

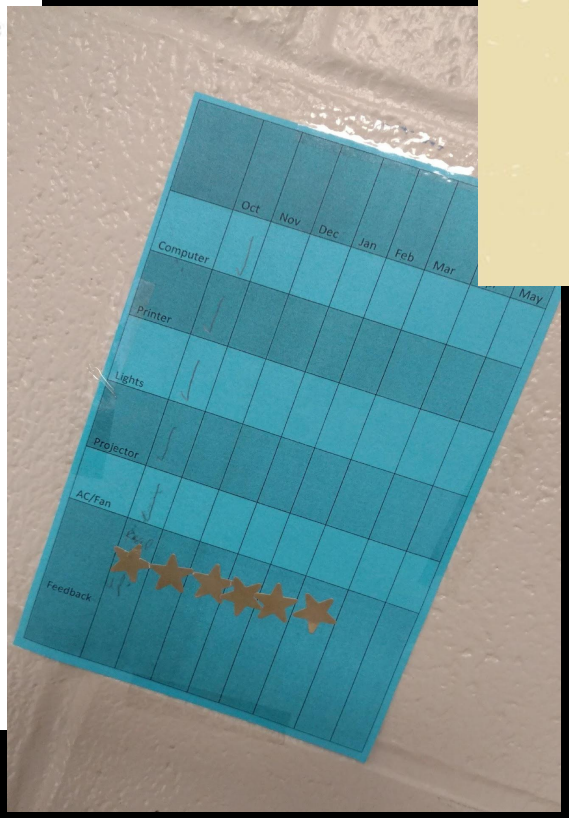
Brought to you by the LMHS Energy Club

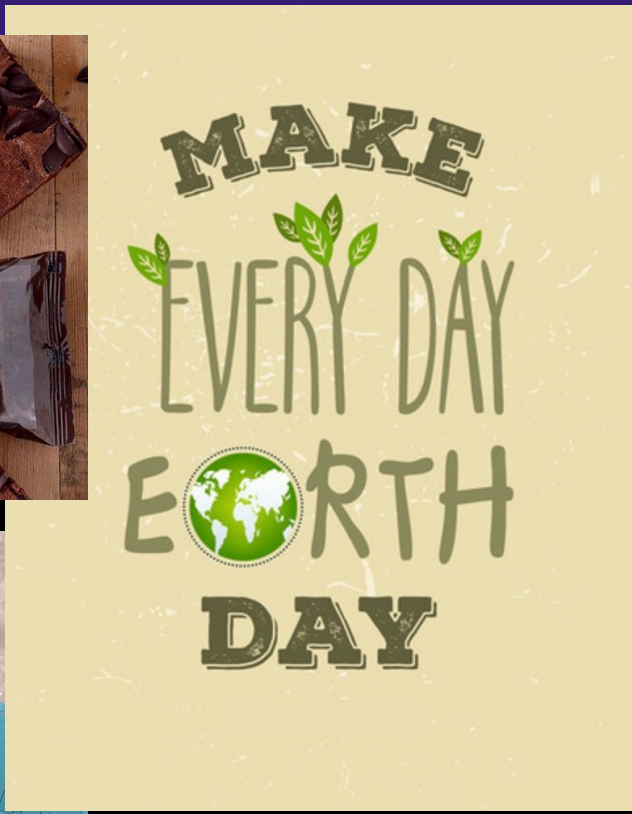
- ✓ Unplug all small appliances – microwaves, mini-fridges, coffee makers, etc. Please take these home over the break, per Dr. Burkhardt's emailed instructions! Don't forget to unplug your electric pencil sharpeners & Glade plug-ins as well.
- ✓ Unplug ALL computers, monitors, and projectors, as well as tvs – just turning them off still leaves a phantom plug-load.
- ✓ Make sure all windows are closed and locked and alert Ms. Stolz if there are significant drafts.
- ✓ Ensure all lights are turned off – closets, under cupboards, desk lamps, etc.
- ✓ Turn off all fans/heaters and any radios.

On a side note, don't forget to take your class pets home, too! ☺

Be a Jugg, Please Unplug!!!







Goal 2 - Partner with middle school energy club to educate others about conserving energy

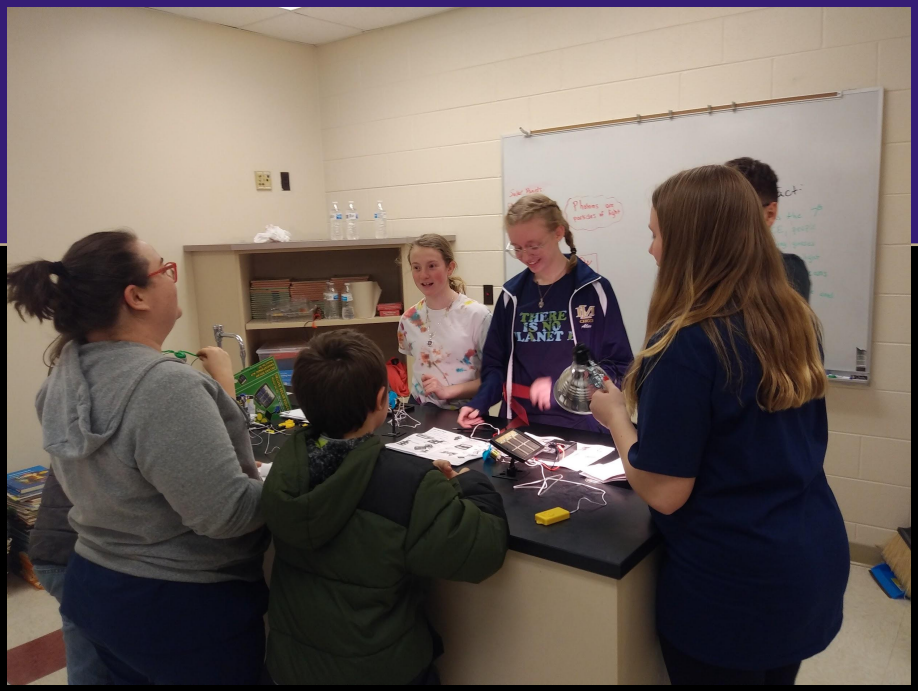
Activities:

- Prior to the shutdown, we shared solar energy information through games, crafts with solar beads, and solar kits with small toys while demonstrating the use of solar energy for powering devices. We did this by partnering with our middle school to participate in a school-wide family STEM Night.

Energy Content and Resources: NEED Energy Carnival Curriculum & Science of Energy

Student Leadership: We gathered supplies, created the games, ran the demonstrations and taught the younger kids about energy conservation and usage. We also cheered them on and encouraged them!

Evaluation: We had families complete Duke Energy Kit requests for their conservation packages. In addition, we had families complete a survey when leaving for the evening in order to assess their learning and overall experience from the evening.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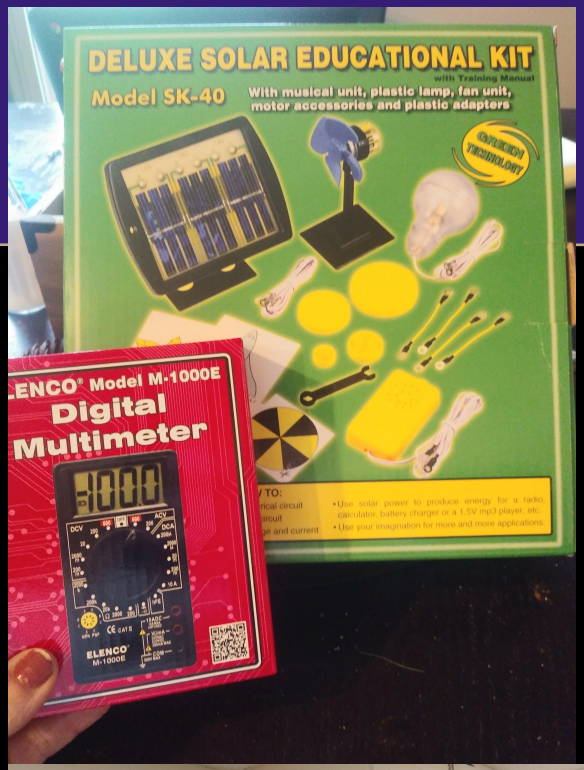
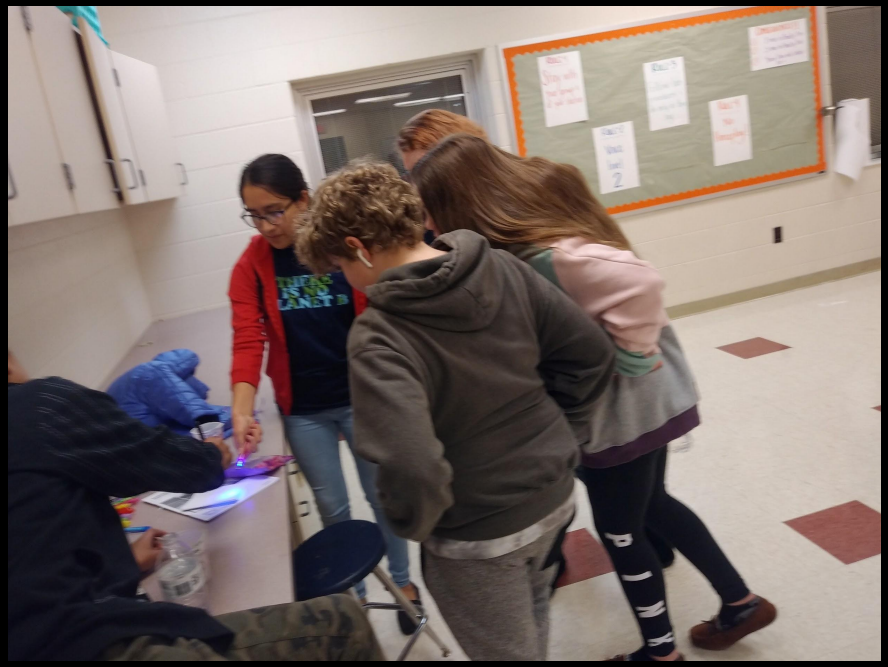

DELUXE SOLAR EDUCATIONAL KIT
with Training Manual
Model SK-40
With musical unit, plastic lamp, fan unit, motor accessories and plastic adapters
GREEN TECHNOLOGY
ELENCO® Model M-1000E
Digital Multimeter
ELENCO
M-1000E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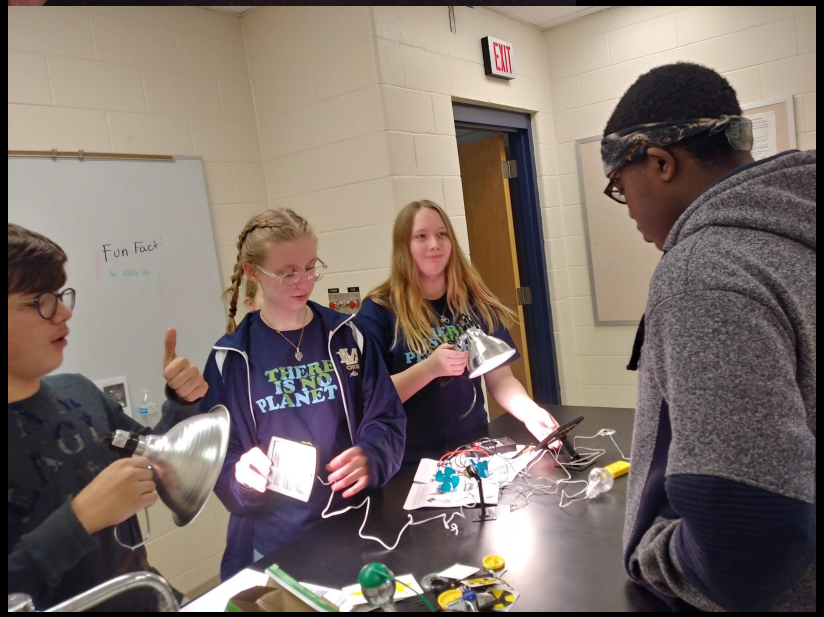

EXIT
Fun Fact:
THERE IS NO PLANET B

Goal 3 - Reduce energy use when producing raw materials by promoting recycling.

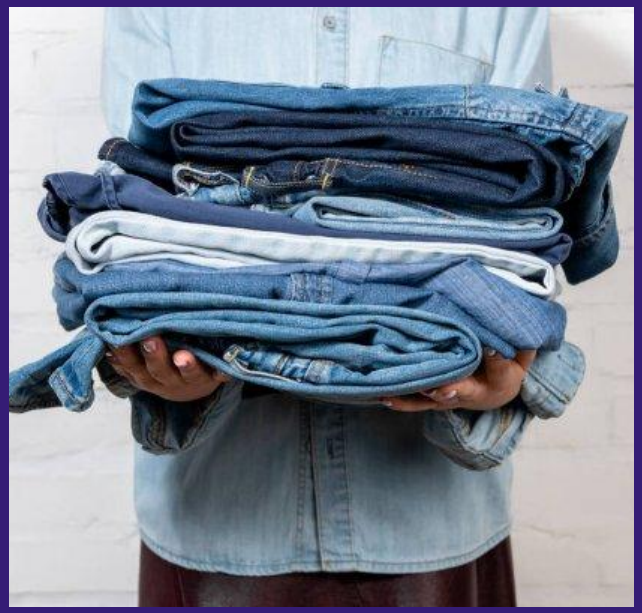
Activity

- Continued the classroom recycling program for non-paper recycling with weekly collection of plastics, metals, glasses, and cardboard.
- Held a district-wide collection of plastic lids to create four new Buddy Benches for our district schools.
- Calculated and published our contribution to reducing energy consumption by recycling as a school.
- Organized and conducted a Blue Jeans, Go Green Drive for denim recycling through Cotton and Zappos.

Energy content and Resources: https://www.epa.gov/learn-issues/learn-about-waste, http://homeguides.sfgate.com/much-energy-recycling-save-79720.html, https://bluejeansgogreen.org/

Student Leadership: We collected the recyclables weekly, calculated how much was being saved by not going into a landfill, then determined how much energy was saved by not having to produce that plastic, aluminum, and glass. Promoted and educated recycling practices for elementary kids by working to gather materials for the bench. Promoted the upcycling of denim and collection for the Blue Jeans, Go Green drive.

Evaluation: We have collected 3 extra large bags a week for 10 weeks, which means we saved approximately 720 kWh of energy from being used to produce the raw materials from scratch! In addition, we collected over 2000 lbs of plastic lids for the buddy bench project, which we calculated to be the equivalent of saving 2000 gallons of gasoline! And we collected 150 pairs of old jeans!



BLUE JEANS GO GREEN
DENIM RECYCLING

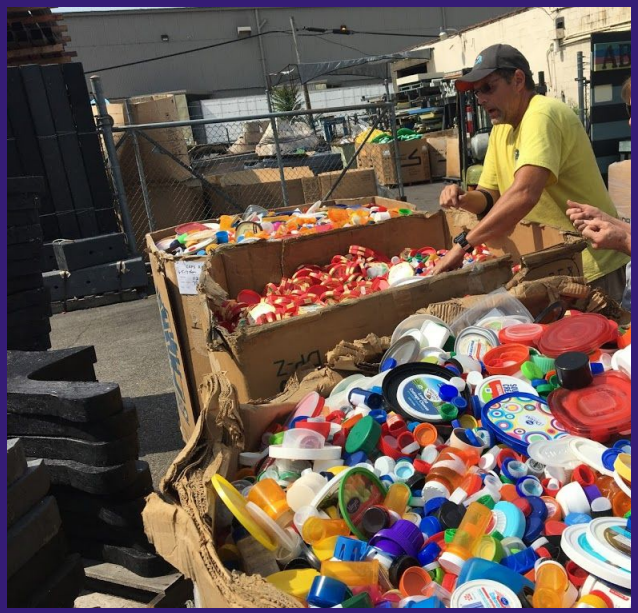
Donate your old jeans to an organization that goes around the world making it possible for people to have insulation in their homes

Requirements

- NO stains
- Must be washed and clean
- NO big holes
- Jean jackets are allowed

Donate Here!

Cotton's Blue Jeans Go Green™ program helps to close the loop on cotton sustainability by diverting denim waste from landfills and helping in building efforts across the U.S.



PLASTIC WANTED!

Dear Parents/Guardians,

Lloyd is excited to partner with Miles Elementary and Tichenor Middle to collect recyclable plastics for the creation of a Buddy Bench for the younger students in our district.

WE NEED YOUR HELP TO COLLECT PLASTIC! Please see the attached list of acceptable and non-acceptable plastic that can be collected for our project.

Please rinse lids before sending them to school. You may send the plastic in with your student to be deposited in our collection as you save it daily or weekly.

Thank you for your continued support and partnership with our Erlanger Elsmere students!

Did you know that an estimated eight million metric tons of our plastic waste enter the ocean from land each year?

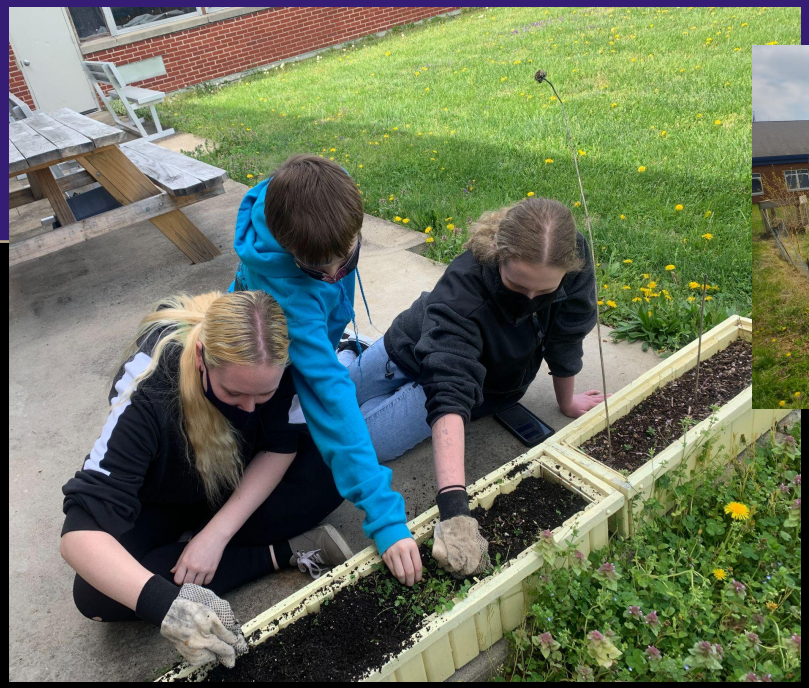
Goal 4 - Increase energy awareness in the community

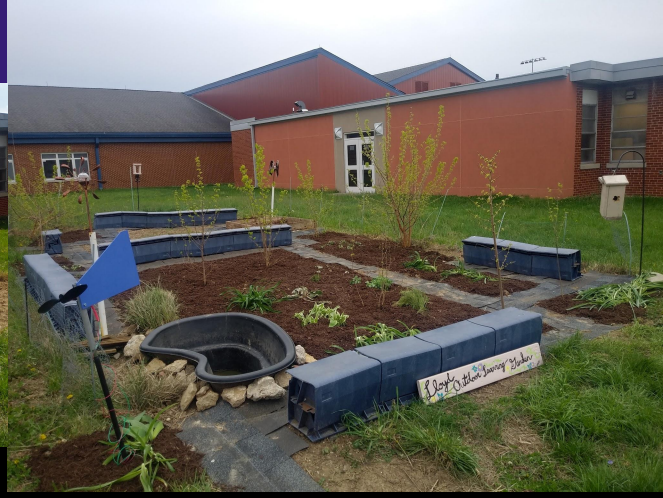
Activity: We revamped our vegetable garden in the courtyard to become more of a pollinator garden and common space for all classes while also incorporating energy use and conservation through wind sculptures, wind turbine charging stations, and solar powered fountains. During the shutdown, our energy team students took turns coming to maintain the space and weed. Once we were back in the building as students, we hosted the space for classes to come in and use it as a place to unmask and relax while drawing, reading, and learning.

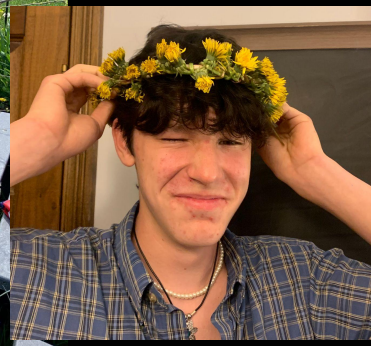
Energy content and Resources: Disney Youth Service Grant for materials for the garden, Forestry Agency for trees to be planted, Home Depot for excess lumber for picnic table

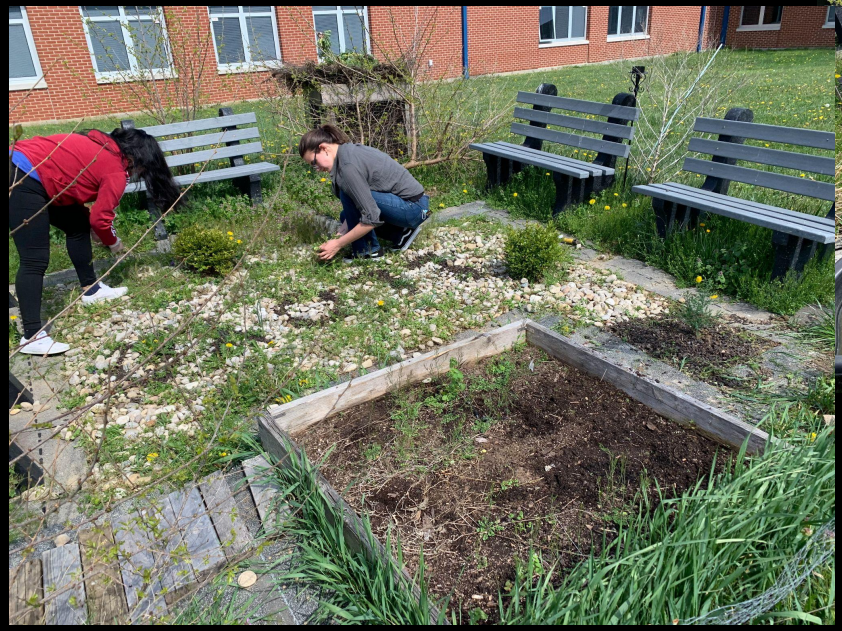
Student Leadership: We created the garden, planted the seeds, weeded, harvested, and shared the crops. Built a picnic table for the learning space. Built a square foot raised garden bed for vegetables.

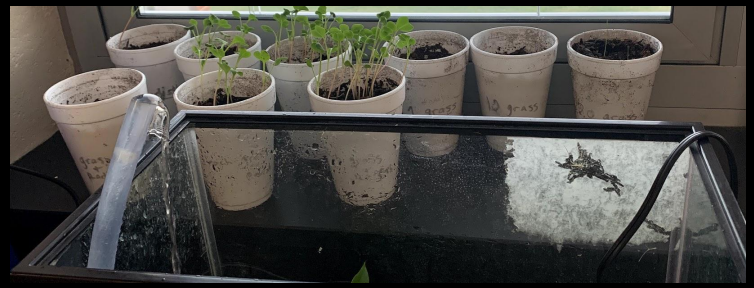
Evaluation: We have created great partnerships with organizations and with our neighbors so that they can look to us for help with conservation practices regarding things like energy! We have hosted more than 40 classes for use in our garden space including for art, reading, English, and science classes.











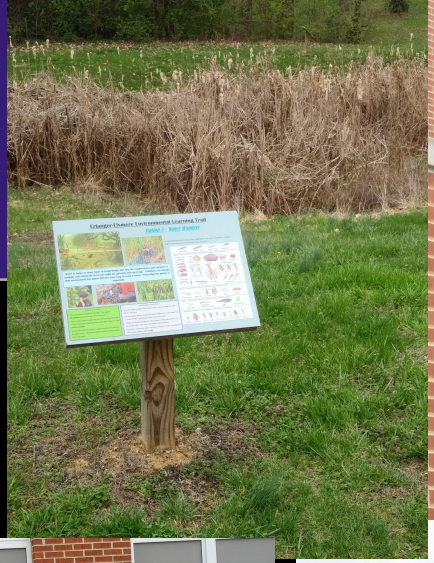
Goal 4 - Increase energy awareness in the community

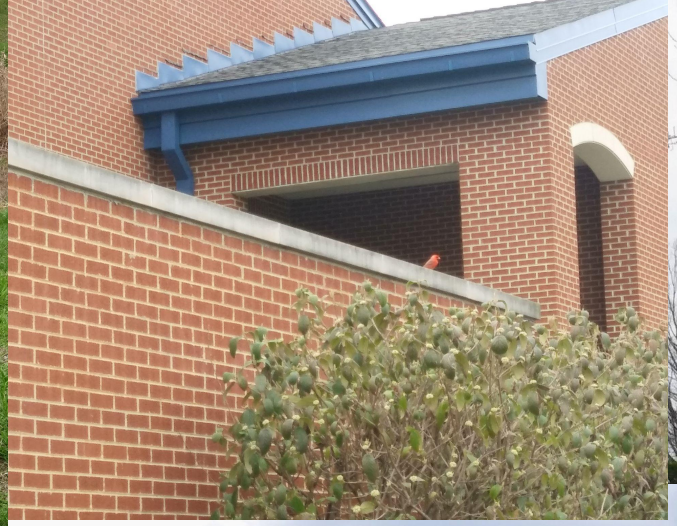
Click here for the presentation on our Environmental Learning Trail

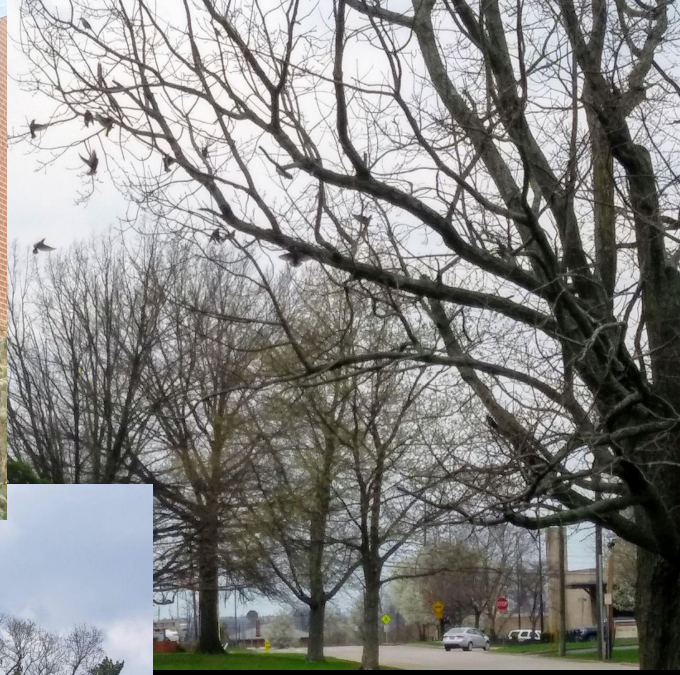
Activity: We modified our plans to share the learning trail we installed with the community during our pandemic time. This trail is designed for preschool and elementary school families to walk through at any time. We have created activities to be done at each of five stations and purchased materials to be used in a kit with each station. One of the stations is all about energy use and conservation - we use solar panels and wind turbines for this area. During the pandemic, families could email one of our team members to check out the kit, which was left outside of the building for the family to use on a scavenger along the trail.
Energy content and Resources: Project Learning Tree, KUPEE Environmental Education Grant for materials for the trail, Boyscout troop for installation of signs on wooden posts

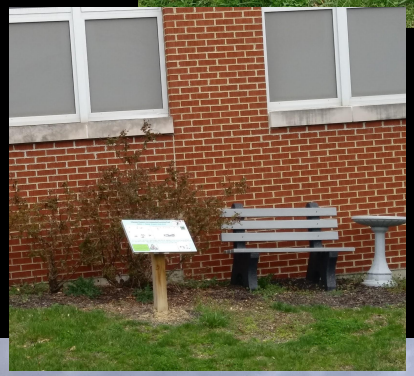
Student Leadership: We researched the information we wanted to include in each of the five stations. For data, we had classes at Lloyd run experiments and test to gather information. Then we created the signs, selected our materials for purchase, and presented the ideas to the preschool teachers and county librarians for feedback. We created fun activities for our preschool students to complete at each of the stations. When we take students and their families on the nature trail, we present the information to them.

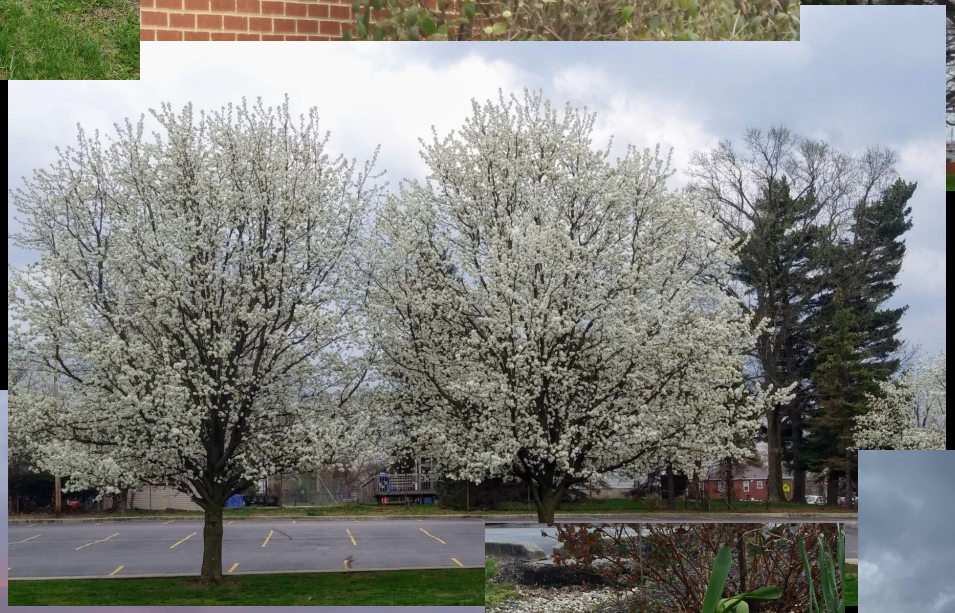
Evaluation: kids are surveyed before and after and show knowledge increased while also sharing the pictures they took with their families of things on our scavenger hunt - like cloud formations, flowering trees, special birds, sunsets, and wetland areas!

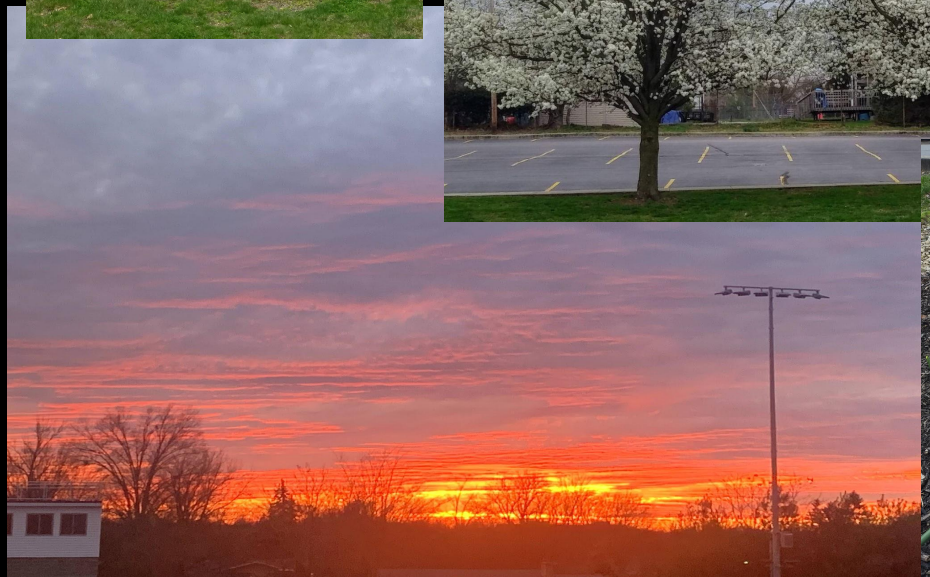

Erlanger-Elsmere Environmental Learning Trail

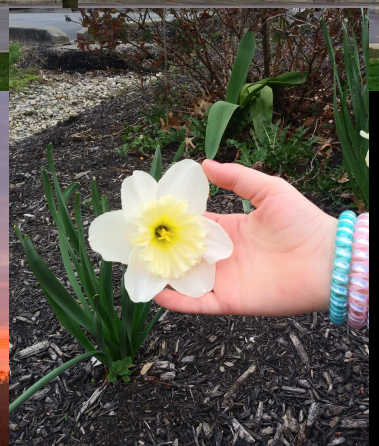


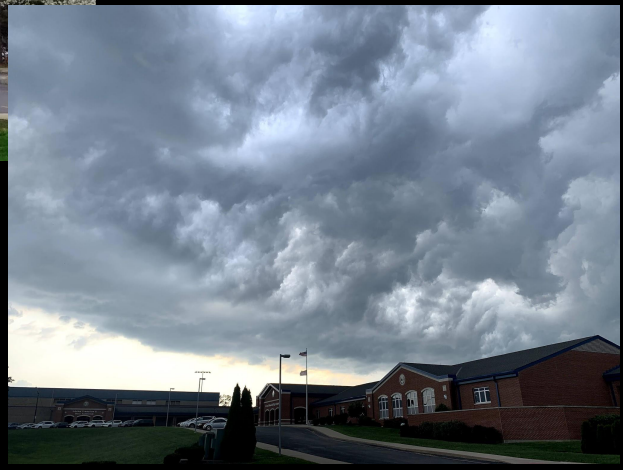












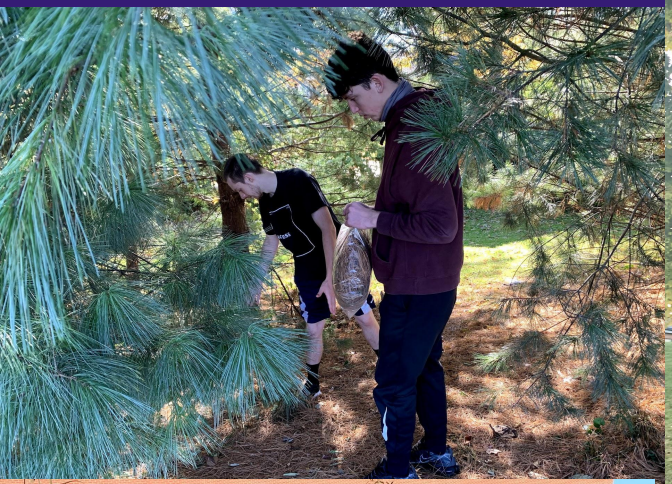
Goal 5 - Provide mentoring in the elementary schools

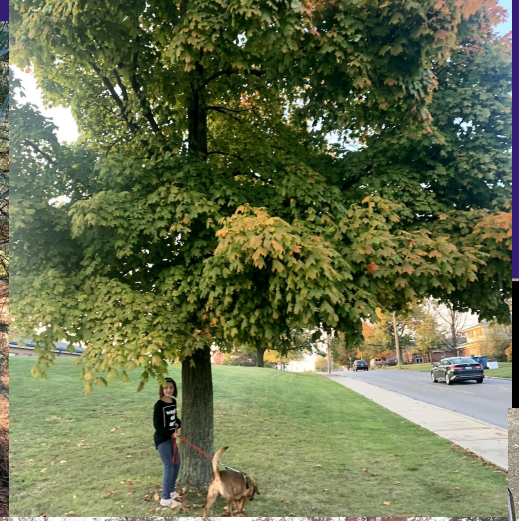
Activity: We planned and prepared to spend a day visiting our four district elementary schools to teach the 4th graders about energy transformations using demonstrations and hands on activities in our Energy Tour of Elementary Schools. This was cancelled because of the pandemic. Instead, we cleaned up the outdoor learning spaces, prepared potted plants with instructional materials and invited families to come and get them from outside of the schools.

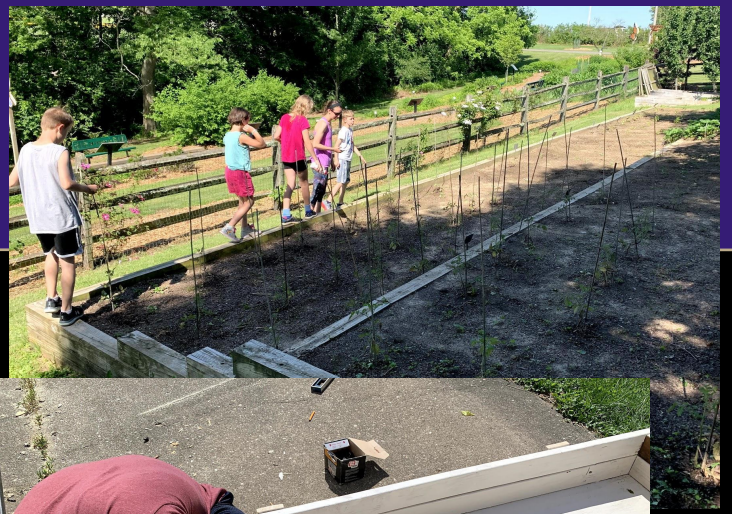
Energy content and Resources: NEED Science of Energy curriculum,

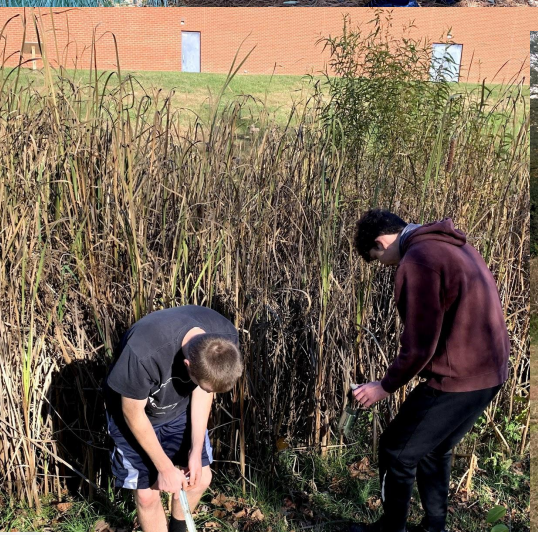
Student Leadership: We prepared to each take a group for the Energy Tour of Schools to present the booths of energy transformation and provide demonstrations. Instead, we socially distanced ourselves while digging up Hens & Chicks and other ornamental grasses and repotting them to be given with information to families.

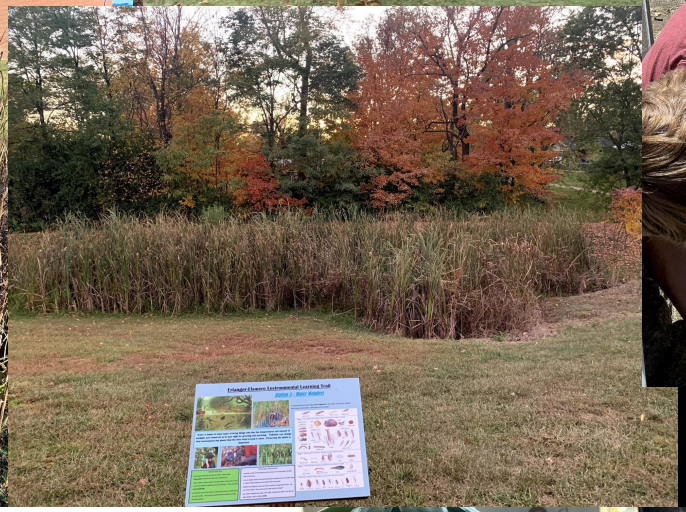
Evaluation: The fourth grade teachers would have assessed their students before and after our Tour of Schools. Instead, families were asked to respond to a questionnaire after they collected their plants and materials. Only a few responded but they reported that they learned a lot about energy and energy conservation!

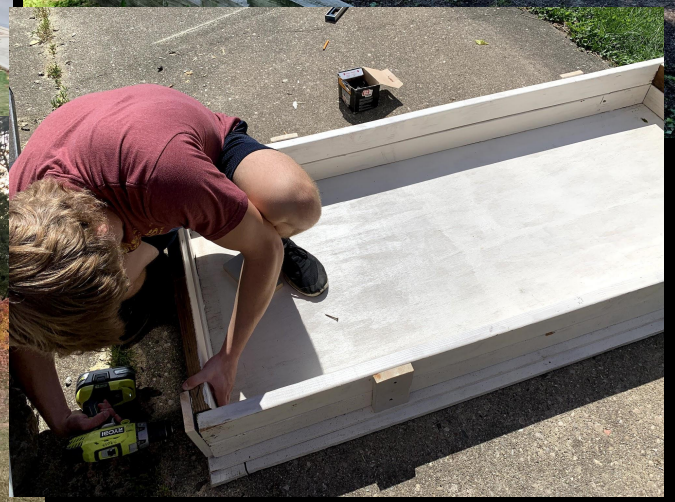


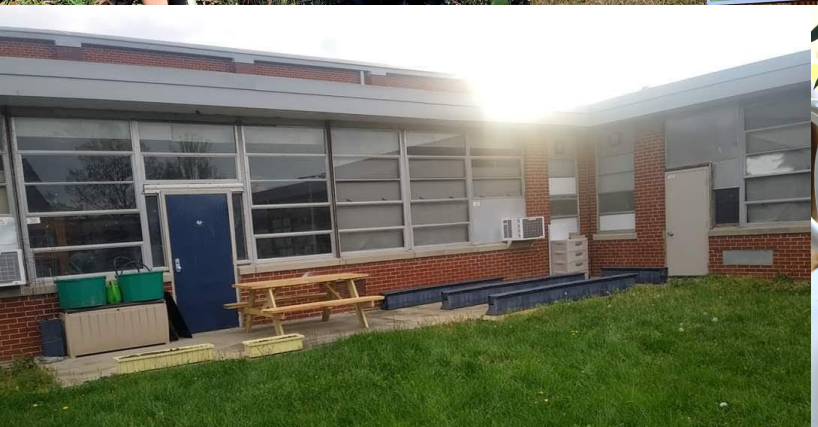


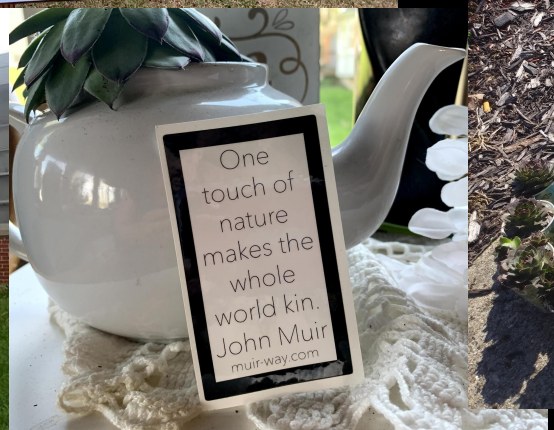











One touch of nature makes the whole world kin.
John Muir
muir-way.com