We are fourth and fifth graders from St. Agnes’ energy team. We have worked to accomplish several goals this year. Our first goal was to teach our school about the uses of energy and nonrenewable versus renewable sources. Our second goal was to become Energy Inspectors. We divided into small groups and went through the building to measure the temperature in each room, check if lights were left on, windows were open or closed, if the heat was turned on and if smart boards or other technology was on without it being used. We invited our Maintenance Director to speak with us about the energy usage of our building and take us on a tour to show us things they are doing to reduce our carbon footprint in our building and to see what the boiler room looks like and how our heat and air conditioning systems work. Our third goal was to build energy efficient houses and see whose house was the better insulated. Our fourth and final goal was to host an Energy Carnival for the whole school and include our community. For this goal, we decided to do it on Earth Day which is after the deadline for our project. We will include our plans for the games we will be doing. We will have booths where students, teachers, and parents will participate in energy games and learn about energy in fun ways.
Our first goal was to teach grades pre-k-third about different types of energy. We taught each grade about a different type of energy that was appropriate for their grade level. We taught about recycling, solar energy, wind energy, geothermal energy, hydropower energy and biomass. We also taught them the differences between renewable and nonrenewable energy. We did a fun game of bingo with the second graders and other groups read books, played games and made slideshows to teach the students. Energy club members worked in small groups to plan lessons for different grades.
Students teaching students
GOAL #2  BUILDING ASSESSMENT

Our second goal was to survey our school’s energy usage. Our energy club became student inspectors. We surveyed the different rooms throughout the month of March. Our advisor, Mrs. Schleg, taught us about the different measuring tools. We used different measuring tools such as a light meter, a kill a watt meter, and thermometers. We went into various classrooms and offices and measured things such as the outdoor temperature, indoor temperature, number of windows, who is in the room, are the lights on, are the blinds closed, are the doors to classrooms open or closed, and were electronics left on when not in use.
Facility Manager Talk
School Building Survey

General Information
1. What was the school built? 1948
   2. Since the school was built, what changes have been made?
   3. What things are done on the ground floor? (L): (R): (O): (T): (A)
   4. What kind of lighting is used in the school? (F): (H): (C): (O): (N)
   5. How much energy does the school pay each year for utilities? (A)
   6. How many students are there in the school? (A)
   7. How many hours does the school stay open? (A)
   8. Do other groups use the school for their meetings? (A)
   9. Who is in charge of controlling energy use in the school? (A)

Building Envelope
1. What is the building made of? (M) (C) (O) (R) (N)
2. In which direction does the building face? (E) (S) (W) (N)
3. How many windows are on each side of the building? (A)
4. Are the windows single or double pane? (S) (D) (B) (O)
5. Are the windows closed double? (S) (D) (B) (O)
6. Are there windows in the doors? (A)
7. Are there any mechanical systems? (A)
8. Are there any windows or doors on the building to provide shade in the summertime? (A)
9. Are there awnings or overhangs over the windows to shade windows from the overhead direct sun in the warm weather? (A)

Heating/Cooling Systems
1. What kind of heating system is used in the school? (S) (E) (W) (C) (H)
2. How old is the heating system? (A)
3. Does the heating system have a programmable thermostat to control temperature? (A)
4. What kind of cooling system is used in the school? (S) (E) (W) (C) (H)
5. How old is the cooling system? (A)
6. Does the cooling system have a programmable thermostat to control temperature? (A)
7. Is there an air exchange system to provide fresh air to the building? (A)
8. Are the boilers, pipes, and ducts sealed and insulated? (A)
9. Are there any ventilation systems maintained on a regular basis? (A)

Water Heating
1. What fuel is used to heat water in the school? (G) (W) (O) (R) (N)
2. Is there more than one water heater? (A)
3. How much is the tank? (A)
4. Do the water heaters have timers? (A)
5. What temperatures are the water heaters set? (A)
6. Are the water heaters and water pipes insulated? (A)
7. Are there leaks in the hot water system? (A)
8. Are there any restrictions on hot water use? (A)

Lighting
1. What kind of lighting is used in the school? (S) (E) (W) (C) (H)
2. Can the lighting be controlled with dimmer switches? (A)
3. Does the school have any skylights or natural lighting? (A)
4. Are there timers for the outside lights so they go off automatically? (A)
5. Are there automatic times for any of the indoor lights? (A)
GOAL #3 BUILDING ENERGY HOUSES

Our third goal this year was to build fun energy houses! We competed to see who could build the most energy efficient house. This was a very effective way to learn about conserving energy and to see what insulating materials were the most successful. We met during our club meeting days to build our houses and then on the 4th date we put our houses to the test. We put the houses outside, then measured the temperature for 1 minute and wrote it down. Next, we put a baggie of ice cubes in our houses and closed the doors. After 15 minutes, we went back out and measured the temperature of our houses. We found that some houses were better insulated and cooled the house better than others!
## Energy House Results

<table>
<thead>
<tr>
<th>Team Number</th>
<th>Energy House Results</th>
<th>Winning Team</th>
<th>Energy House Results</th>
<th>Winning Team</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beginning Temp.</td>
<td></td>
<td>End Temperature</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>25 degrees Celsius</td>
<td></td>
<td>25 degrees Celsius</td>
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<tr>
<td>2</td>
<td>20 degrees celsius</td>
<td></td>
<td>20 degrees Celsius</td>
<td></td>
</tr>
<tr>
<td>3</td>
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<td>23 degrees celsius</td>
<td></td>
<td>21 degrees Celsius</td>
<td></td>
</tr>
<tr>
<td>5</td>
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<td></td>
<td>20 degrees Celsius</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>23 degrees celsius</td>
<td></td>
<td>24 degrees Celsius</td>
<td></td>
</tr>
</tbody>
</table>

**Difference**
- No difference
- No difference
- **-5 degrees difference**
- **-2 degrees difference**
- No difference
- positive 1 degree different
Energy House Competition
GOAL #4  EARTH DAY/GREEN APPLE DAY OF SERVICE!

We have helped to organize an all school Earth Day celebration. Our whole school will go outside so that we can reduce our energy usage in our building. All classes, grades Pre K through 8th grade, will participate in service projects to make our campus more green. We will have a trash pick up around the campus, we will be weeding around our flower beds, adding mulch to areas that have been washed out by rains, we will plant flowers and vegetables around our new natural playground that was just installed, and we will put in plants around the campus to reduce the heat island effect. We will participate in learning activities about our pollinator garden, we will learn about composting and vermiposting, we will learn about recycling and we will host our Energy Carnival using the resources from NEED. The games we will play are Energy Pictionary, Wheel of Energy, Energy Knockdown and Top 5.
# Green Apple Day of Service Schedule - April 22, 2022

All homerooms gather at the soccer field from 8:30-8:45 for a morning prayer service.

<table>
<thead>
<tr>
<th>Time</th>
<th>Station 1</th>
<th>Station 2</th>
<th>Station 3</th>
<th>Station 4</th>
<th>Station 5</th>
<th>Station 6</th>
<th>Station 7</th>
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<td>1P</td>
<td>3E</td>
<td>KC</td>
<td>2W</td>
<td>2R</td>
<td>1V</td>
<td>5H</td>
<td>8C</td>
<td>3D</td>
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<tr>
<td>9:00-9:15</td>
<td>1V</td>
<td>5H</td>
<td>KO</td>
<td>KC</td>
<td>2W</td>
<td>2R</td>
<td>3E</td>
<td>6M</td>
<td>3D</td>
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<td>4S</td>
<td>1P</td>
<td>KO</td>
<td>KC</td>
<td>2W</td>
<td>5M</td>
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<td>3E</td>
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<td>9:30-9:45</td>
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<td>1V</td>
<td>1P</td>
<td>KO</td>
<td>KC</td>
<td>4S</td>
<td>7G</td>
<td>3E</td>
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<tr>
<td>9:45-10:00</td>
<td>KC</td>
<td>3D</td>
<td>2R</td>
<td>1V</td>
<td>1P</td>
<td>KO</td>
<td>4W</td>
<td>7P</td>
<td>4S</td>
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<tr>
<td>10:00-10:15</td>
<td>KO</td>
<td>4W</td>
<td>2W</td>
<td>2R</td>
<td>1V</td>
<td>1P</td>
<td>3D</td>
<td>6L</td>
<td>4S</td>
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<th>Station 13</th>
<th>Station 14</th>
<th>Station 15</th>
<th>Station 16</th>
<th>Station 17</th>
<th>Station 18</th>
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</thead>
<tbody>
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<td>KO</td>
<td>4S</td>
<td>7G</td>
<td>8H</td>
<td>5M</td>
<td>6M</td>
<td>6L</td>
<td>7P</td>
</tr>
<tr>
<td>9:00-9:15</td>
<td>4W</td>
<td>1P</td>
<td>5M</td>
<td>8H</td>
<td>7G</td>
<td>4S</td>
<td>8C</td>
<td>6L</td>
<td>7P</td>
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<tr>
<td>9:15-9:30</td>
<td>5H</td>
<td>1V</td>
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<td>6L</td>
<td>7P</td>
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<td>7G</td>
<td>6M</td>
<td>8C</td>
</tr>
<tr>
<td>9:30-9:45</td>
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<td>7G</td>
<td>8H</td>
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Evaluation

- We educated grades Pre-K-3 about different types of energy using slideshows, skits, and games.
- We learned about ways to reduce our energy usage in our building.
- We became energy inspectors and checked classrooms to see how teachers and students were reducing their energy usage.
- We measured temperatures, checked windows and doors, measured light output and reported back to our leaders what the findings were and made recommendations.
- We had our Facilities Manager speak with us about the usage of energy on our campus and take us on a tour to explain energy saving measures taking place.
- We learned about ways to insulate our homes in order to conserve energy, then built Energy Homes and tested them to see which homes were insulated the best.
- We planned an Earth Day/Green Apple Day of Service event for the school community and led the Energy Carnival activities.