



2019 4-H Renewable Energy Camp

Audience

4-H Renewable Energy Camp was open to youth age 13 to 16 years old who had a basic knowledge of electricity and an interest in exploring the application, research and opportunities in solar energy. 13 youth had applied and were accepted for the camp, and 11 youth attended the camp. 8 male and 3 female youth representing 3 Michigan counties. All 11 youth were new to 4-H.

Objectives

The 4-H Renewable Energy Camp was designed that at the end of camp youth will:

- Be able to apply the process of science to collect and organize data.
- Apply principles of electrical circuitry to solve problems.
- Design a solar system that will meet the needs of Michigan residents.
- Strengthen collaborative and communication skills as youth work together to meet their designated solar challenge.

Funding

4-H Renewable Energy Camp was supported by HomeWorks / Tri County Electric Cooperative and by the Michigan Corn Marketing Group.

Description

4-H Renewable Energy Camp was a five day, pre-college, over-night camp. It took place July 29th through August 2nd, 2019, and was held at Michigan State University. Attendees were housed in Shaw Hall, one of the residence halls at Michigan State University.

During the 35 contact hours youth worked along-side with MSU Extension Educators, scientists and professionals from the field. Youth

experiences included visits to MSU solar research sites and labs, HomeWorks Tri County Electric Cooperative, the MSU solar race car, farms that use renewable energy to remain profitable and a family farm that has been off the grid for 30 years.

Youth explored the following:

- How solar radiation is converted to direct current and utilized by a load.
- How to minimize electricity use and understand an electric bill.
- To design and develop a solar array model for a variety of Michigan farm and business scenarios that will meet the need for increased profitability through prudent energy uses.

The camp culminated with teams of youth designing solutions for incorporating solar energy into real life applications and presenting their solutions.

Impact

Participating youth completed an evaluation at the end of the camp.

As a result of their experience at 4-H Renewable Energy Camp:

- 100% youth like experimenting and testing ideas.
- 100% youth can ask a question that can be answered by collecting data.
- 91% youth can communicate a scientific procedure to others.
- 100% youth look for information to help them understand the problem, think before they make a choice, think about all the information they have about different choices and think of past choices before making a new choice.

4-H Science asking questions and discovering the answers

- Ask a question (I wonder)
- Research (I think, know)
- Hypothesis (I predict)
- Experiment (I try, do)
- Collect data (I observe, measure)
- Explain data (I interpret, tell)
- Ask *new* questions (I wonder)

Participant Comments

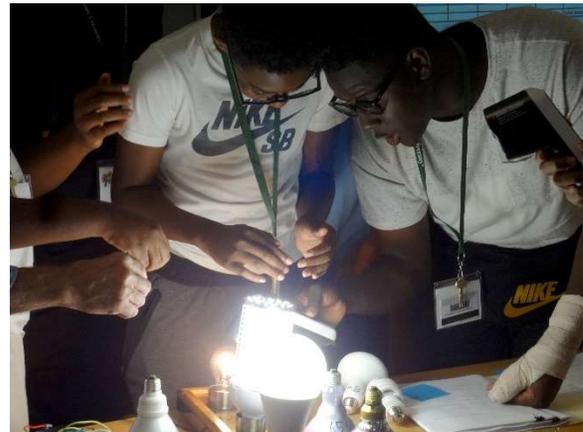
When asked if they will change their use of energy based on what they have learned at the Renewable Energy Camp, participants commented the following:

- *I will start to become more aware of how I use my energy and how much at a time.*
- *I'll be much more costly and aware.*
- *I see how important it is to conserve energy and the prices that come along with it.*
- *Unplug unused appliances and replace light with LEDs*

When asked if 4-H Renewable Energy Camp was beneficial, participants answered the following:

- *Yes, because it showed me how we can make money and save money using solar energy.*
- *4-H Renewable Energy Camp expanded my knowledge in renewable energy and helped me make new friends.*
- *Yes, because of the people we met while traveling.*
- *It was, because you learn lots of new things that help you plan for your future.*

Pictures



Contact Information

Tracy D'Augustino
Extension Educator, 4-H Science
4-H Science Education
Phone: 989-724-6478
E-mail: daugustt@msu.edu

Insa Raymond
Extension Educator
4-H Science Education
4-H Coordination – Hillsdale County
Phone: 517-439-9301
E-mail: raymon65@msu.edu

MICHIGAN STATE UNIVERSITY | **Extension**