



WE CU VOLUNTEER



The goal of State 4-H Congress – a five-day personal development conference - is to motivate teens to expand their 4-H knowledge and leadership skills while celebrating and recognizing teens who "make the best better." For a detailed

conference agenda, please visit www.clemson.edu/4h. If you have any questions or concerns, please contact Katie Shaw at berry7@clemson.edu.

Register NOW!

Upcoming Statewide Programs:



State 4-H Congress
July 6-10, 2020
A 5-day personal development conference (Senior age youth)

Register today!



4-H Pinckney Leadership Roundup
July 14-16, 2020
High-school youth invited to join a virtual online leadership series

Register by July 12



Horse Camp at Home
July 27-31, 2020
A free virtual camp experience for any youth

Register by July 25



Wildlife Food Plot Project
Runs Sept. 2020 – Jan. 2021
Support local wildlife habitat by planting a food plot! (ages 5-18)

Register by August 7



Journey to Mars @ Home
At your own pace
Before the 2020 Mars Rover launches, learn more online!

Click for First Lesson



Volunteer Leaders Symposium
August 15, 2020
Join us for a free online symposium with a variety of workshops.

Registration Coming Soon!



New 4-H Youth Development Agents

Freddricka Pressley

Marion County 4-H Youth Development Agent

Ms. Freddricka Pressley is a proud native of Gresham, SC. She obtained her Bachelor of General Studies Degree with an emphasis in Educational Studies, a minor in History and a collateral in English Literature from Francis Marion University. She is currently pursuing her Master of Education Degree in Teaching and Learning. At an early age in her community, she discovered her passion for educating and inspiring youth. She volunteered not only in her church, but in her community, being able to utilize her educational background to assist youth academically. She is looking forward to working with the 4-H Youth Development Program to empower the youth of Marion County to be dynamic citizens in society. Freddricka can be contacted at fpresl@clemson.edu or 843-423-8285



Elizabeth Snipes

Dillon/Marlboro County 4-H Youth Development Agent

Mrs. Elizabeth Snipes, Marlboro/Dillon 4-H agent, comes to us with an education degree from St. Andrews University and a master's degree from Walden University. With seven years of classroom experience, she is excited to have the opportunity to blend her background in education with her passion for all things 4-H. She lives on a farm in Dillon County with her husband and two small children. In her spare time, she enjoys horseback riding and spending time outdoors with her family. Elizabeth can be contacted at esnipe2@clemson.edu or in the Marlboro Office at (843) 479-6851.



Kyla Szemplinski

Darlington County 4-H Youth Development Agent

Ms. Kyla Szemplinski is a native of Geneva, IL. She was involved in two local 4-H clubs where her projects were horses and she was elected Vice President of her club. She obtained her BS degree in Animal Science from the University of Missouri-Columbia in 2016 and stayed involved in 4-H as a member of Mizzou Collegiate 4-H. She earned her Master's degree at Tarleton State University in Stephenville, TX, in December 2018 where her thesis research was Transporting and Exercising Horses: Effects on Fiber Digestibility and Microflora Population. Kyla is very excited about joining the Clemson Extension team and is looking forward to working with the local 4-H community. Kyla can be contacted at kszempl@clemson.edu or at the Darlington County Extension Office at 843-393-0484.



Monthly 4-H Club Activity Idea

By Abigail Greer, Clemson UPIC Intern



Save the Ice

Objective: To demonstrate properties of heat transfer to youth as well as show how to conduct an experiment using the scientific method

Age Range: All ages.

Hands-on Activity: Creating a shelter for ice that insulates it for as long as possible, contrasting different insulating materials

Life Skills: HEAD = critical thinking, problem solving, decision making;
HEART = communication, cooperation;
HANDS = leadership, contribution to group effort, teamwork;
HEALTH = self-esteem, character, healthy lifestyle choices, personal safety.



Introduction

How do things stay cold when the area around them is hot? How does your cooler keep ice from melting for so long even when you take it out on a sunny beach? What do you do to stay cool when the weather starts getting hotter? (i.e., wear different clothes, go different places, change when you go outside) What is insulation? How does insulation play a role in our daily lives? Insulation is a type of material that prevents or reduces the transfer or loss of heat between two items or environment. Insulation keeps temperature more constant within an environment by keeping heat from transferring from outside to inside or vice versa. It is important to note that “heat” can be transferred but “cold” cannot. Heat can be lost, but cold is not gained, in other words.

Types of Heat Transfer/How heat can be lost or gained:

Conduction: heat that is transferred by objects being in direct contact (solids). Metals are good conductors, meaning they transfer heat throughout very well. For example, pots and pans are made of metal because they conduct heat efficiently and evenly.

Convection: heat that is transferred by the circulation or movement of particles in liquid or gaseous matter. How warm a liquid or gas is can dictate how it moves in an environment. Warm air rises, as does warm water. This is why pools feel colder the deeper down you swim, and the kiddie pool may feel much warmer than the 3 foot pool you swim in.

Radiation: heat transferred by waves, where no direct contact occurs between two surfaces. Heat waves from a hot object can be felt indirectly, such as when you warm your hands near a bonfire. You don't have to get too close to feel the heat because it radiates off in waves. This is incredibly important to all life on Earth because our world is warmed by the radiation of heat from the Sun!

Evaporation: heat that is lost when liquids evaporate. Liquid converting into gas removes energy from a system which is why sweating causes you to cool down on a hot day. Similarly, when alcohol from hand sanitizer dries or evaporates off of your hands you feel a cooling sensation.

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Materials (Items in bold font are insulator materials and will be referred to as such below)

- **Styrofoam cup or bowl**
- **Brown paper bag**
- **White paper bag**
- **Cardboard from pantry item** (thin cardboard, not corrugated)
- **Aluminum foil**
- **Plastic grocery bag**
- Similar-sized ice cubes
- Stopwatch or timer

Activity Instructions

1. Before going outside, make predictions about which insulator materials will do the best/worst job of keeping your ice cubes from melting. Why do you hypothesize some will do better than others? Do they have similar traits, such as being smooth or rough, thick or thin?
 - a. Have 4-H'ers identify the dependent and independent variables of this experiment, and ask them to come up with a "control" group on their own.
2. Shape each of the insulator materials into a structure that can cover or house your ice cubes. Make sure to pay attention to if air can move in and out of your shelters because this may affect the rate at which the ice melts!
 - a. Based on group experience level, you may suggest that covering size can affect the speed of melting. This is another chance to emphasize the importance of a standardized experiment.
3. Head outside and choose a site that is warm. This activity can be repeated using two sites with differing temperatures if your group wants to examine additional independent variables.
4. Test each insulator material individually to begin with by setting one ice cube under each, timing how long it takes the ice to melt. Try and limit the number of times you lift the insulator material and check at regular intervals to keep the experiment standardized.
 - a. If conducting this activity with a higher experience level group, emphasize the importance of standardization and bias within experiments like this.
5. After recording data in a data table for each material type, 4-H'ers make predictions about which materials can be combined to most efficiently keep ice from melting and which could melt ice the fastest.
 - a. You can use this as an opportunity to discuss materials that are insulators versus conductors.



Figure 1. Example of assorted materials youth can use to insulate ice: clear plastic container, aluminum can, aluminum foil, black plastic container, newspaper, clay pot, glass bowl, etc.



Figure 2. Ensure initial pieces of ice are uniform in size, and even consider recording the mass of ice cubes with more advanced groups.



Figure 3. Difference in the amount of melting after one minute of observation.

Material	Ice Cube Mass (g)					
	0 min	1 min	2 min	3 min	4 min	5 min

Figure 4. Example of a data table layout that could be used to record information.

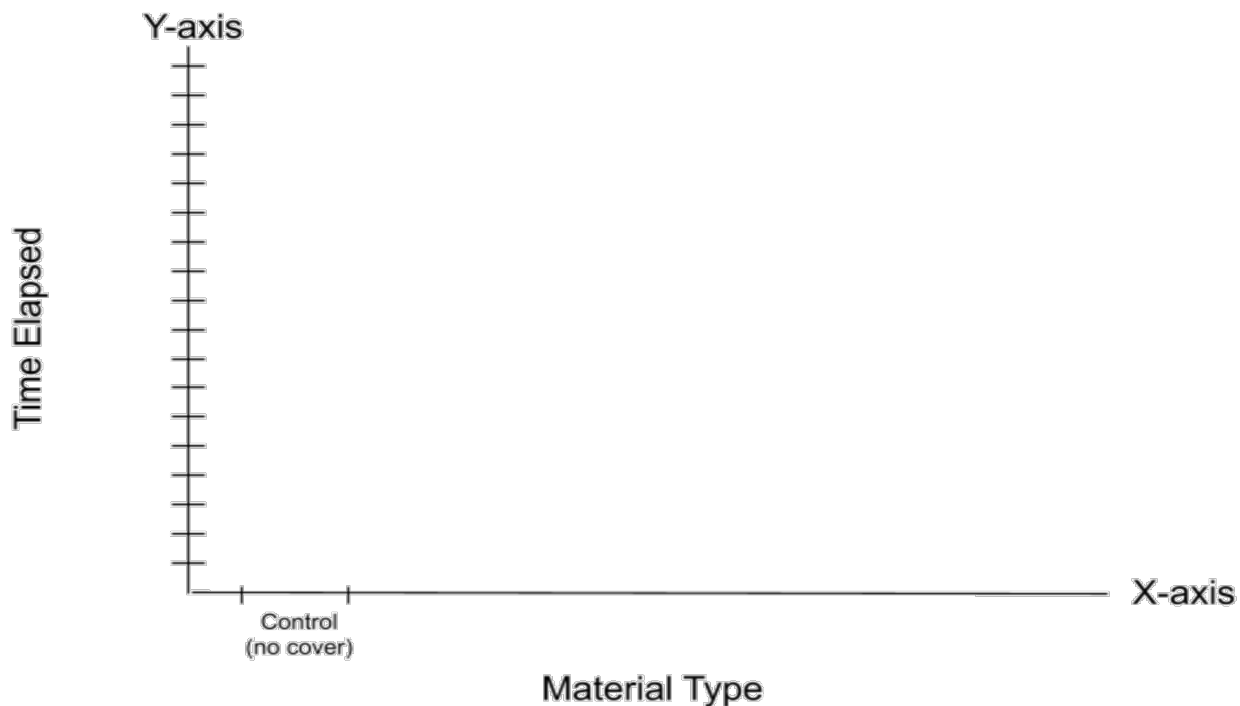
Reflection

Discuss the results! Display the data graphically if desired. Talk with 4-H'ers about additional materials that could be tested and identify common traits in those that are better insulators. As previously mentioned, to elevate the difficulty of this activity, students can be tasked with making their own data table. The time scale and materials will need to be filled in on this template and time should be in smallest increments possible so that the differences in melt times are illustrated more explicitly. Ensure that your experiment has a control group and add unit labels once your group has determined what unit of time they wish to observe using.

Conclusion

We rely on the insular properties of everyday items in our daily lives. From appliances, homes, and vehicles to our own bodies, we use insulation to trap heat in, as well as protect from excess heat. This activity is a great way to look at the efficiencies of different insulators in their ability to keep heat out.

Ice Melt Time with Different Materials as Insulators



Additional Resources:

Burns, T. A. 2016. We CU Volunteer: South Carolina 4-H Volunteers' Newsletter. Bag Mittens monthly activity. Editor/author. January 2016. 1:2(1).

Planetary and Lunar Institute. 2019. The Great Backwards Ice Cube Melting Race.

https://www.lpi.usra.edu/education/explore/ice/activities/investigations/melting_race/

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