Early Childhood STEM
Mushy Marshmallow

Description

Let's discover how sun rays can change food. Build a sun oven to catch those rays and put them to work on marshmallows.

- Age:2-6
- Time: 10 minutes to prepare, 15-30 minutes for results

Objectives

- Children will understand that the sun provides heat for the planet and how heat affects objects.

Vocabulary

- Reflect: to bend or throw back
- Sun rays: a ray of light from the sun

Materials

- Round-bottom thin plastic bowl or paper bowl
- Foil
- Twist Tie
- Clear plastic wrap or bag
- Drinking Straw
- Marshmallows
- Towel

Safety Precaution

- Make sure that none of the children participating are allergic to the food(s) being tested.

Implementation

Introduction

Ask your child(dren) what the sun does for us. Have them stretch their arms as wide as they can. Explain the Sun's arms are called "rays" and when the Sun stretches its arms, which are very hot, the things it touches or comes close to becomes very hot.

Procedure

1. Line the bowl with foil. Smooth out the wrinkles and fold the foil over the edges so it sticks against the sides.
2. Skewer the marshmallow with the straw. Cut the straw and set in the bowl so that the marshmallow doesn't touch the foil.
3. Cover the bowl with clear plastic held on with a twist tie beneath the bowl.
4. Set the bowl facing the sun so the sun entirely shines inside. Use a towel or pebbles to prop it up. Depending on how sunny it is, check back every 15–30 minutes. When the marshmallow feels soft or mushy, it's ready to eat. Compare the taste and texture of a marshmallow right out of the bag with one right out of your sun oven.

Questions to Prompt Inquiry

1. What changed the marshmallow?
2. What do you think would happen if we did this on a cloudy day?
3. What would happen if we just put the marshmallow on the grass and not in the special bowl?

Conclusion

Rays of sun pass through the plastic wrap and become trapped inside the oven. The shiny foil bounces, or "reflects," the rays at the marshmallow. The marshmallow makes a delicious change when it is hit by sun rays. It becomes warm and mushy. "What did you learn? What were you surprised about?"

Tips and Suggestions

Activity Extensions

- Let the sun's rays do more magic on these foods: a large tortilla chip covered with shredded cheese; a plain cookie covered with chocolate chips; a pat of butter on a small piece of bread.
- Park your car in the sun on a pleasant day. Come back in a few hours and, if you left the windows rolled up, it can feel as hot as an oven inside! Why?

Adapting to Home/Classroom/Public space

This project needs access to an outside area that has sunlight and can be closed off to other people or animals as to not disrupt the experiment.

Learn More!

a. Links to learn more: https://redtri.com/sun-science-experiments/ https://www.brighthubeducation.com/preschool-crafts-activities/120650-solar-energy-activities/
b. Reading recommendations: This experiment came from the book Science Play! Beginning Discoveries for 2-6 year-olds by Jill Frankel Hauser. Check out this book from your local library for more fun science projects to do at home or school.