Shady Structures At Home Science Project

Dear Families,

As a final topic for this school year, we will investigate the effect the sun has on different materials. Students will take on the role of an engineer and design a structure to slow the melting of ice. Below is a summary of the project. I hope that you enjoy exploring together!

Project Overview

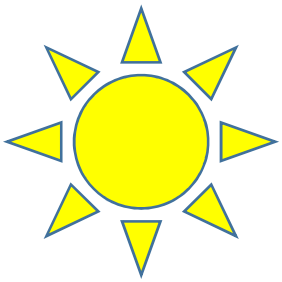
Step 1: On a sunny day (mid-late afternoon), go on a scavenger hunt. You are looking for things that feel warm and things that do not feel warm outside. Draw/write your discoveries on the handout. Have your child try to explain why some things are warmer than others – help them out.

*****To prepare for the next lessons, make ice cubes. Try to get them to all be about the same size.**

Step 2: On a sunny day, see how long it takes the sun to melt an ice cube. Put an ice cube in a Ziploc baggie or see-through cup and find a sunny spot to place it outside. Time how long it takes (in minutes) for the ice cube to completely melt. Find some shade and repeat the experiment. Discuss the results. We want students to know two things: 1) ice melts more quickly in the sun than in the shade and 2) shade happens when something blocks the sun.

Step 3: On a sunny day, design a structure that makes shade for an ice cube. You can use any materials you have readily available. Students will design, build and test out their structure to see if it can make the ice cube melt more slowly than the one that was in the sun from day 2.

OUTDOOR SCAVENGER HUNT

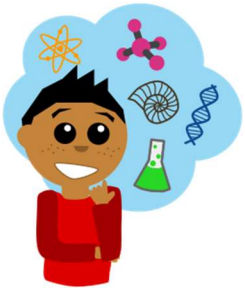


Wow, it is hot outside today. I wonder if everything outside feels hot?

Let's explore! Draw or write what you find out.

Things that feel warm	Things that do not feel warm

BE A SCIENTIST



Have you ever watched ice melt?

Do you know why ice melts?

I wonder if ice always takes the same amount of time to melt?

Let's do an experiment to find out!

Part 1

1. Put one ice cube in a sealed baggie or a clear plastic cup.
2. Place the baggie/cup in a **sunny** area outside.
3. Use a clock or timer to keep track of how long it takes (in minutes) to completely melt.
4. Watch the ice cube melt. To keep kids interest, have them draw what they see every few minutes or take pictures.
5. How long did it take? _____

Part 2

1. Put one ice cube in a sealed baggie or a clear plastic cup.
2. Place the baggie/cup in a **shady** area outside.
3. Use a clock or timer to keep track of how long it takes (in minutes) to completely melt.
4. Watch the ice cube melt. To keep kids interest, have them draw what they see every few minutes or take pictures.
5. How long did it take? _____

Discuss together. What makes ice melt? How did the ice melt differently in the sun and in the shade? What is shade?

GREAT JOB SCIENTIST!

BE AN ENGINEER

An engineer is someone who solves problems using science and math.

The Problem: Your teacher loves to have cold lemonade on a hot day but his/her ice melts too fast and the lemonade does not stay cold.

Discuss together: What are some ways you could help your teacher with this problem?

Let's try this idea: Design and build a structure that will make shade.

Try your best to make a structure that:

- Fits a cup underneath it
- Is made from 3 different materials
- Makes shade for the cup

Draw an idea below.

Gather three (3) materials and build your structure.

*Parents - any materials you have are fine, but here are some ideas:

- Use nature/things you can find outside like sticks, leaves, mud ☺
- Blocks, legos
- Playdough
- Straws
- Popsicle sticks
- Paper
- Tupperware
- Tape/glue

Opps, did something not work? That's okay, try a new idea!

Keep trying…

Don't give up!

You did it! Great job. Now test it out. Put an ice cube in your cup and put your cup under the structure you made. Put another ice cube in a different cup and leave it in a sunny spot. See which ice cube melts first?

Circle one: Which ice cube melted first?

The ice cube in the sun. The ice cube in the shade.

****If possible, take a photo of you and the structure you made to share with your teacher.**

GREAT JOB ENGINEER!