Week Seven: June 1st-5th

Hello Dye Scientists and Engineers!

I hope you are well and enjoyed last week's activities. This week, you will learn about solar energy. Before you begin the activities, remember to first **watch the video** in the provided link. As you complete these two investigations, **have fun**!

If you are interested or have extra time, each link also includes **reading material, vocabulary, discussion questions and an online quiz** that correlate to the lesson. Please remember, these are simply for **enrichment** and are **not required**. These are great opportunities to learn something new and test your knowledge without worrying about a grade.

If you send me something you learned I will send you back a Science Joke!
Contact Information: Class Dojo-STEM Teacher Mrs. Thomas, email clthomas@carmanainsworth.org, or text 810-412-8829 or visit my website dyeelementarystem.weebly.com.

I hope your family is healthy and safe. Have fun with S.T.E.M. this week, and let me know how it goes!
Adios amigos,
Mrs. Thomas

Activity 1

https://www.generationgenius.com/?share=D4C9A

GENERATIONGENIUS
ALWAYS QUESTION. ALWAYS WONDER.

DIY ACTIVITY

ICE MELTING RACE

SUMMARY

- Compare how fast ice cubes melt in the sun vs. in the shade.
- Time Required: 45 minutes
- Difficulty: Easy
- Cost: $0-5

MATERIALS NEEDED

- 2 Plastic containers or ice cube trays
- 2 Small plastic toys
- 1 Cardboard box
- 2 Paper plates
- 1 Freezer

PROCEDURE

1. Fill up two containers with equal amounts of water.
2. Place a small plastic toy in each container.
3. Ask an adult to help you freeze the container overnight.
4. Place the frozen blocks on paper plates.
5. Place one plate in the sun, and another inside the shade of a cardboard box.
6. Observe for a few hours.

WHAT IS GOING ON HERE?

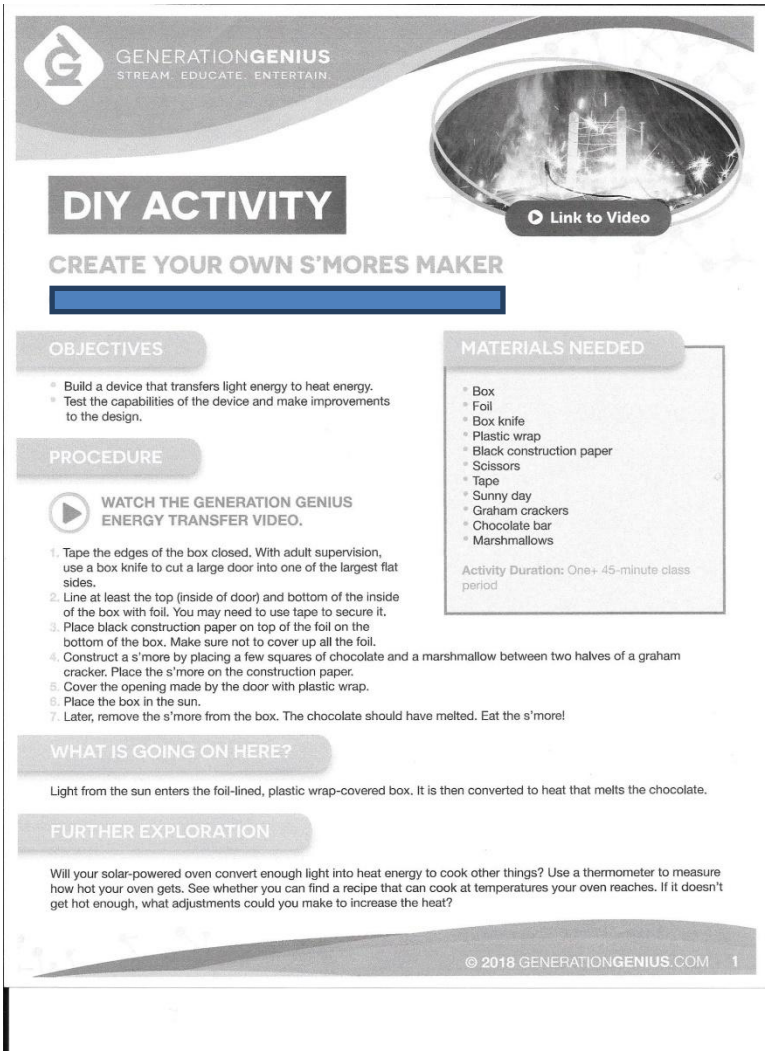
Sunlight warms the blocks of ice which results in the ice melting. Melting is when something turns from a solid to a liquid. The blocks of ice that were shaded from the sun melted more slowly than the block of ice that was in direct sunlight. This is because sunlight warms things up.

Suggestions:

- **If you do not have a cardboard box, use a cupboard, under your bed or couch, or any other dark place.**
- **Take the investigation a step further: Place one container outside on a sunny day and another outside on a cloudy day and time how long it takes each to melt.**

Activity 2

https://www.generationgenius.com/?share=4B02A



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DIY ACTIVITY

Link to Video

CREATE YOUR OWN S'MORES MAKER

OBJECTIVES

- Build a device that transfers light energy to heat energy.
- Test the capabilities of the device and make improvements to the design.

MATERIALS NEEDED

- Box
- Foil
- Box knife
- Plastic wrap
- Black construction paper
- Scissors
- Tape
- Sunny day
- Graham crackers
- Chocolate bar
- Marshmallows

Activity Duration: One+ 45-minute class period

PROCEDURE

WATCH THE GENERATION GENIUS ENERGY TRANSFER VIDEO.

1. Tape the edges of the box closed. With adult supervision, use a box knife to cut a large door into one of the largest flat sides.
2. Line at least the top (inside of door) and bottom of the inside of the box with foil. You may need to use tape to secure it.
3. Place black construction paper on top of the foil on the bottom of the box. Make sure not to cover up all the foil.
4. Construct a s'more by placing a few squares of chocolate and a marshmallow between two halves of a graham cracker. Place the s'more on the construction paper.
5. Cover the opening made by the door with plastic wrap.
6. Place the box in the sun.
7. Later, remove the s'more from the box. The chocolate should have melted. Eat the s'more!

WHAT IS GOING ON HERE?

Light from the sun enters the foil-lined, plastic wrap-covered box. It is then converted to heat that melts the chocolate.

FURTHER EXPLORATION

Will your solar-powered oven convert enough light into heat energy to cook other things? Use a thermometer to measure how hot your oven gets. See whether you can find a recipe that can cook at temperatures your oven reaches. If it doesn't get hot enough, what adjustments could you make to increase the heat?

Suggestions:

- **Be sure to first watch the video, so you can see their example.**
- **If you do not have a box, try using an old pizza box.**
- **If you do not have black construction paper, try doing the project without it.**
- **If you do not have ingredients for S'mores, use something else. The possibilities are endless!**
    - **A slice of cheese on a cracker or piece of bread**
    - **Cheese, sauce, and/or pepperoni on a piece of bread, cracker or tortilla**
    - **A marshmallow (You might want to put it on a stick, so you can more easily eat it once it cooks. ☺)**