



JONES VALLEY TEACHING FARM

AT-HOME ACTIVITIES

Solar Oven

3rd Grade – 5th Grade

DESCRIPTION and OBJECTIVE:

Can we, as humans, harness the power of the sun? The answer is yes! We can use the sun to our benefit in a variety of ways. Use this activity to explore the idea of leveraging the sun's energy to design and construct a solar oven.

MATERIALS NEEDED:

- ⇒ Cardboard box (preferably with an attached lid)
 - Pizza box, shoe box, donut box or cake box
- ⇒ Scissors
- ⇒ Notebook paper
- ⇒ Tape
- ⇒ Large Ziploc bag
- ⇒ Aluminum foil
- ⇒ Kale
- ⇒ Olive oil
- ⇒ Seasonings (to taste)
 - Salt, pepper, garlic powder, onion powder, cayenne pepper, etc.

LESSON / ACTIVITY:

- ⇒ Gather the materials listed above. Before beginning the activity, ask your student to close their eyes and imagine running errands or going to an event on a hot, sunny day.
 - Ask your student, “When you get in the car on one of these days, what does the inside of the car feel like?” Your student should be able to recall or describe how the car can sometimes feel even hotter than outside.



- Explain to your student that the light from the sun gets trapped inside the car and absorbed by the surfaces, being converted to heat energy and causing the temperature inside the car to rise.
 - This scientific concept is called *the greenhouse effect*. Watch the videos linked below if you'd like to dive into this topic further.
- ⇒ Using this same concept, it's time to create your own solar oven!
 - Follow the steps listed in the instructional video on our Instagram (@jonesvalleyteachingfarm) and blog.
 - Once your student has created their own solar oven, prepare the kale using the instructions in the video as well.
 - While the kale chips are baking in the solar oven, have your student complete the following writing prompts: "How do solar ovens work? What does a solar oven need to cook food successfully? Can solar ovens be used for anything else besides cooking food?"
- ⇒ REMEMBER: this activity is likely to be most successful on a warm, sunny day!
 - If your student's solar oven does not work properly, use this moment as a learning opportunity as well!
 - Ask your student, "What might impact the success of our solar oven? How could we enhance our design to successfully bake kale chips?"
 - Reimagine the design and try again!

ADDITIONAL INFORMATION:

- ⇒ Check out the links below to learn more about topics related to this activity!
 - [Heat Transfer](#)
 - [Greenhouse Effect](#)

