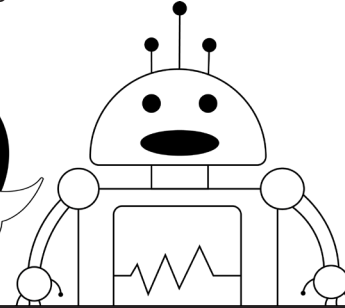


How to Build a Solar Oven

This activity was created by Brenna.

Scientists and engineers have developed many different ways to generate electricity. Some electricity is renewable, meaning that it comes from a source that occurs naturally and won't run out. Turbines generate electricity from wind and moving water, and solar panels convert energy from the sun into electricity. Let's build a solar oven to cook marshmallows and demonstrate how much energy sunlight has!

Reading instructions and completing steps in a certain order is how computers read code! Following step by step instructions to complete a task is called an **algorithm**.

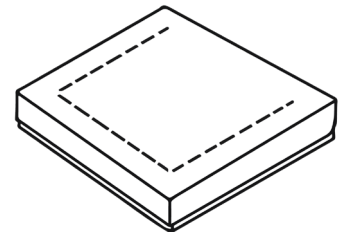


Materials

- Scissors or Box Cutters
- Aluminum Foil
- Cardboard Box (pizza boxes work best)
- Newspaper or Scrap Paper
- Pie Plate or Clear Glass Dish
- Black Paper
- Tape
- Plastic Wrap or a Clear Plastic Bag
- Oven Mitts
- Marshmallows

STEP 1

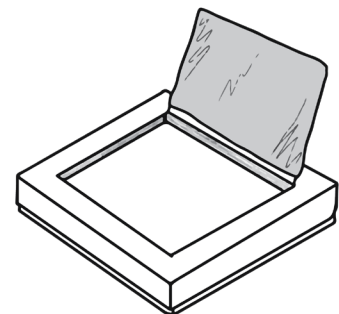
Carefully cut a flap open in the top of the box. Cut along 3 sides, and fold upwards to create a flap. Be sure to leave a border of cardboard from the sides of the box



STEP 2

Cover the inner portion of the flap with aluminum foil, securing it with tape.

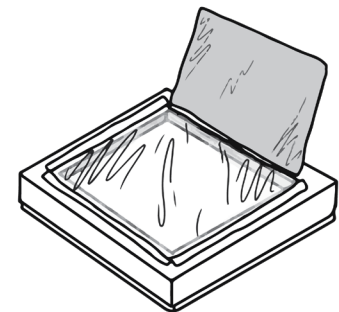
Why? This will reflect the sunlight into the box, and works best if the foil is smooth with no wrinkles.



STEP 3

Use plastic wrap or a clear plastic bag to seal the cut opening and create a 'window'. Seal the edges with tape to make it air tight.

Why? This window will let sunlight into the oven, while also trapping the heat inside.



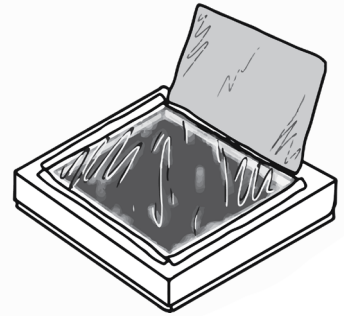
Date: _____

Name: _____

STEP 4

Line the bottom interior of the cardboard box with black paper.

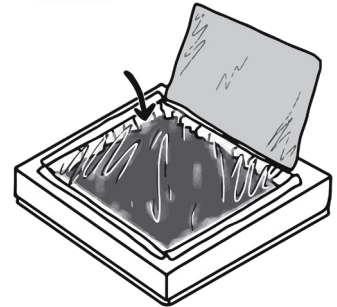
Why? Black absorbs light the most of any colour, so this will help the oven heat up faster. We will be placing your marshmallow on this black surface to cook.



STEP 5

Place rolled up newspaper or scrap paper inside the box, forming a border around the cooking area. Tape down to hold everything in place.

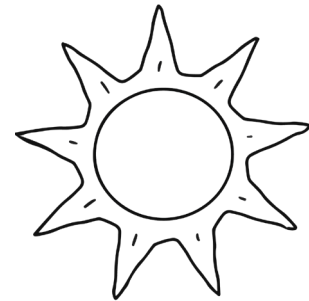
Why? This helps to insulate the oven by creating a seal inside the box where the lid closes. The hot air inside cannot easily escape, so it will trap heat well.



STEP 6

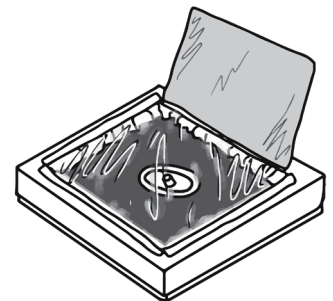
Place your finished solar oven in a sunny spot, and adjust the aluminum covered flap so that as much sunlight as possible is entering the box through the window.

*You may want to use additional materials to hold the flap in place.
Your solar oven will work best when the sun is high overhead, from around 11am to 3pm.*



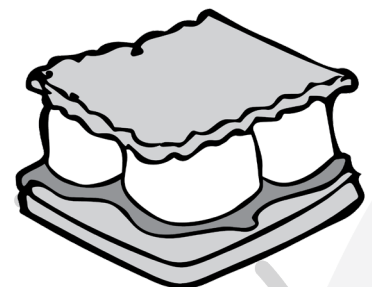
STEP 7

Now it's time to roast some marshmallows! Place your food on a clear glass dish or metal pie plate, so that the oven doesn't get dirty. Set the dish on the black paper.



STEP 8

Once your marshmallows are done, use oven mitts to remove them from the solar oven. Careful, the inside of the oven and the dish will be hot!



STEP 9

Enjoy your delicious, solar powered treat! You could even make s'mores with some graham crackers and chocolate too!