

# Make It Yourself: Sun S'mores

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With a solar oven, you can make a delicious s'more using the heat of the sun. Photo from: Wikimedia Commons. Illustrations: NASA Climate Kids, [climatekids.nasa.gov](https://climatekids.nasa.gov).

A solar oven is a box that traps the sun's heat. It works like a greenhouse. It holds in the heat from the sun, which makes the air inside the box much warmer than the air outside.

With a solar oven, you can use the sun's heat to make a treat: s'mores!

## What You Will Need To Make The Solar Oven

A cardboard box with a lid. The lid should have flaps. You want to be able to close the box securely. The box should be at least 3 inches deep and it should be big enough to put a pie tin inside.

Aluminum foil

Clear plastic wrap

Glue stick

Tape. You can use any kind of tape you have. Clear tape, duct tape and masking tape will all work.

A stick to prop open the oven lid. The stick should be 1 foot long. You can use a knitting needle or a ruler.

Ruler

Box cutter or knife. Only use these tools with adult assistance, please!

## What You Will Need To Make The S'mores

Graham crackers

Large marshmallows

Plain, thin chocolate bars

Aluminum pie pan

Napkins!

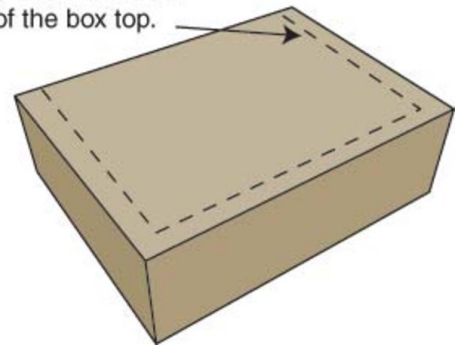
## How To Make It

1. Ask an adult to help you with the first step. Using the ruler as a guide, cut a three-sided flap out of the top of the box. Leave a 1-inch border around the three sides.

2. Spread glue from the glue stick onto the bottom of the flap. Cover it with aluminum foil, making the foil as smooth as possible.

3. Spread glue inside the box. Then line the inside of the box with aluminum foil. Again, flatten the foil down and make it as smooth as possible.

Cut here, 1 inch from the edge of the box top.



4. Tape two layers of plastic wrap across the opening in the lid. Put one layer on the top. Then put the second layer on the bottom side of the opening.

5. Test the stick you will use to keep the lid up. You may have to use tape to make the stick stay put.

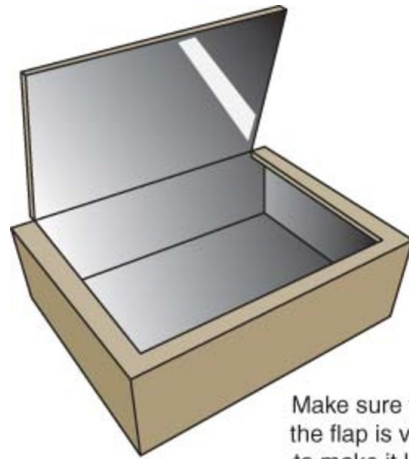
6. Set the oven in the direct sun and prop the lid open with the stick. Make sure light is reflecting into the box. Let the oven sit in the sun. Keep it there for at least 30 minutes to warm it up.

7. Break graham crackers in half to make squares. Place four squares in the pie pan. Then place a marshmallow on each square.

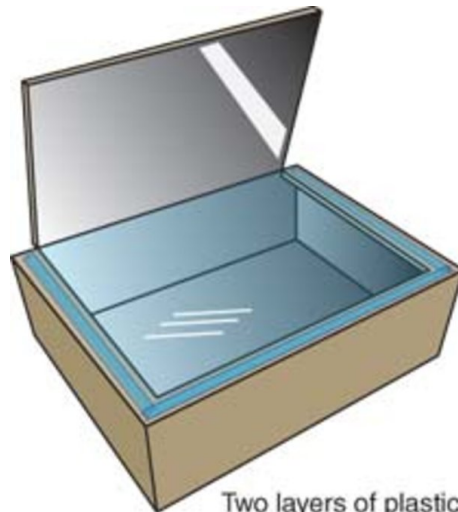
8. Place the pan in the solar oven.

9. Close the oven lid tightly. Open the flap so sunlight will reflect off the foil and into the box. The marshmallows will take 30 to 60 minutes to get squishy. You can poke them to check. How much time needed will depend on how hot the day is. It also depends on if the sun is shining directly on the oven.

10. Now, add the chocolate. Take a piece of chocolate about half the size of the graham cracker square. Open the oven lid and put a piece of chocolate on top of each marshmallow. Place another graham cracker square on top of the chocolate. Press down gently to squash the marshmallow.



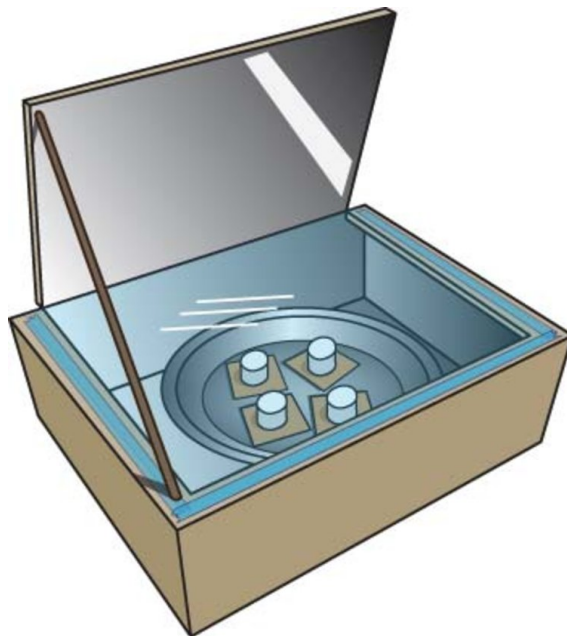
Make sure the foil inside the flap is very smooth, to make it like a mirror.



Two layers of plastic wrap over the opening will help keep heat in, while still letting all the light shine through.

11. Close the lid of the solar oven. Let the sun heat it up for a few minutes more. This will melt the chocolate a bit.

12. Finally, take out your s'mores. Enjoy!



## Quiz

- 1 Which selection from the article suggests that another person will be needed for this project?
  - (A) Using the ruler as a guide, cut a three-sided flap out of the top of the box.
  - (B) Spread glue inside the box. Then line the inside of the box with aluminum foil.
  - (C) Test the stick you will use to keep the lid up. You may have to use tape to make the stick stay put.
  - (D) Take a piece of chocolate about half the size of the graham cracker square.
  
- 2 Based on the section “What You Will Need To Make The Solar Oven,” which of the following is TRUE?
  - (A) You need a cardboard box that fits a pie tin inside.
  - (B) You will need a glue stick to prop the oven lid open.
  - (C) You have to use clear tape to make the solar oven.
  - (D) You must have an adult help you with all of the steps.
  
- 3 Which of the following answer choices BEST describes the structure of the introduction [paragraphs 1-2]?
  - (A) description
  - (B) cause and effect
  - (C) chronology
  - (D) problem and solution
  
- 4 According to the authors, how will a stick help make the solar oven work?
  - (A) It will make the aluminum foil as smooth as possible.
  - (B) It will help measure the 1-inch border around the box.
  - (C) It will hold the lid open so the sun can shine in the box.
  - (D) It will flip the s'mores over so they can cook on both sides.