DIY SUN SCIENCE

Sun Cookies

Can you make a model of the Sun that's good enough to eat?

Description

Use candy pieces and a cookie to make an accurate model of the Sun that you can eat!

Age Level: 7 and up

Materials

- One round, plain cookie (a sugar cookie works well)
- White frosting
- Red and yellow sprinkles
- Small chocolate pieces (such as mini M&Ms® or Tic Tacs®)
- Thin red licorice rope (such as Twizzlers®)
- Plastic knife
- Plate

You can first try baking plain sugar cookies in a Solar Oven! Get ideas for where to place the "sunspots" on your cookie from the Spot the Sunspots activity.

Time

Preparation: 5 minutes
Activity: 15 minutes
Cleanup: 10 minutes

Step 1

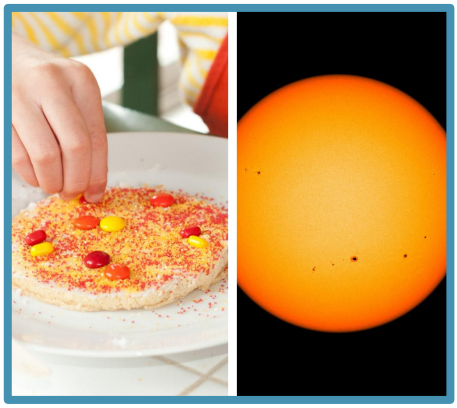
You will use candy on your cookie to show the Sun's different features. First, spread a layer of frosting on your cookie.

Step 2

The image on the far right shows Solar granules, which are huge regions of hot gas welling up from the Sun's core. Add yellow and red sprinkles to your cookie to look like these Solar granules. Each real granule on the Sun is about as big as Texas!

Step 3

Add small chocolate pieces to the cookie to show sunspots. Sunspots typically appear in pairs. One spot has a north magnetic pole and the other has a south magnetic pole. So add the chocolate pieces two at a time!



Step 4

Cut the licorice into 7-cm-long pieces and separate the strands. These pieces will represent Solar prominences, which are hot gases that appear as arcs (rainbow-shaped curves) above the Sun's surface. Place a few strands of licorice on your cookie to form arcs.

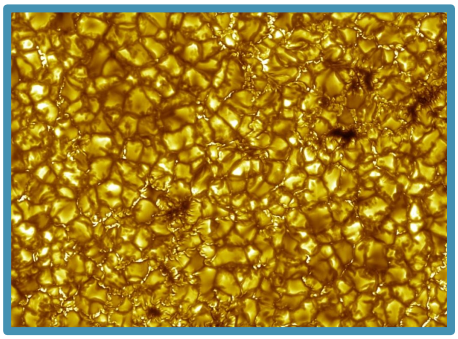
Step 5

Eat and enjoy your Sun cookie!

What's Going On?

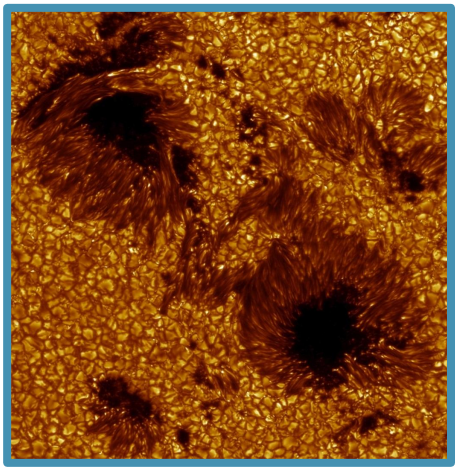
"You used three kinds of candy to show three different features on our Sun—sprinkles for granules, round candies for sunspots, and licorice strands for prominences. All three of these features on the Sun are constantly changing.

Solar granules are areas that carry up hot plasma (a gas that has either a positive or negative charge) from deep inside the Sun. The centers of each granule are very hot and look yellow or white, but the edges are cooler and look orange. The cooler areas sink back down into the Sun, where they are reheated and rise again to the surface. The granules constantly change shape, and most are about the size of Texas!"



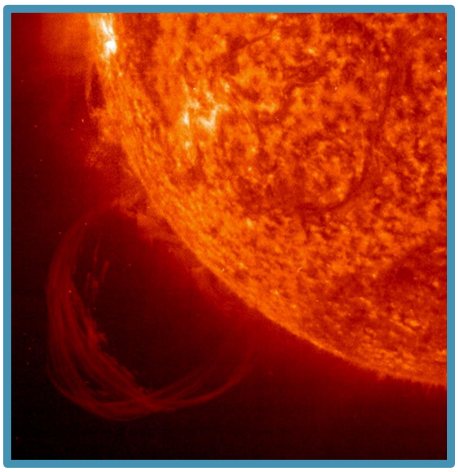
What are sunspots?

Sunspots appear on the Sun's surface as dark spots, usually in pairs. Sunspots are areas with a lot of magnetic activity. Since magnets always have a north pole and a south pole, two sunspots usually appear together, where one sunspot is the north end and the other is the south end. Both sunspots are a little cooler than the gas surrounding them, which is why sunspots appear darker than the rest of the Sun's surface.

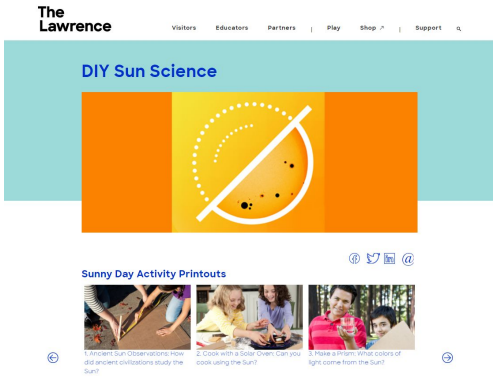


What is a Solar prominence?

Solar prominences are large arcs of gas that reach beyond the Sun's surface. Sometimes these prominences break apart and erupt away from the Sun. Solar prominences are constantly changing and most are tens of thousands of kilometers long!



Learn More



For more info and other activities, visit:

LawrenceHallofScience.org/do_science_now/diy_sun_science

Credits

The Lawrence Hall of Science
UNIVERSITY OF CALIFORNIA, BERKELEY

The DIY Sun Science app allows families and educators to investigate and learn about the Sun at home, at school, or anywhere you go! The app provides 15 hands-on investigations, images, and videos.

Activity inspired by “Edible Model of the Sun,” NASA/Sun-Earth Day. Slide 4, Right Slide: Vasco Henriques, Swedish 1-m Solar Telescope, Institute for Solar Physics. Slide 5, Right Slide: NASA/SDO. Slide 6, Right Slide: NASA/SDO. Slide 8, Vasco Henriques, Swedish 1-m Solar Telescope, Institute for Solar Physics. Slide 9, Göran Scharmer and Kai Langhans, Swedish 1-m Solar Telescope, Institute for Solar Physics. Slide 10, NASA/SDO.

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