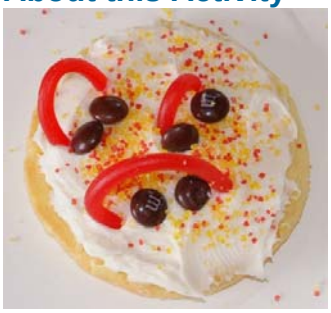
Public Outreach
- Make and Take Activities

Edible Model of the Sun

About this Activity



The Sun is a dynamic and active star. If you look at it with a telescope, or even with a pin-hole camera or special eclipse-glasses, you can see features on the sun that are moving and changing. *(Remember you should never look directly at the sun!)* Participants will make an edible model of the Sun's outer layers using cookies and toppings.

Left: Example of a finished "solar cookie".

Below Right: Participant adding licorice prominences to his model of the Sun's surface.

What You'll Need

- round plain cookies (most generic brand sugar cookies would work.)
- white frosting
- yellow and red sprinkles (found with baking decorations and food colorings in grocery stores.)
- chocolate chips or M&M's (We found that mini ones work best.)
- pull-n-peel licorice candy such as Twizzlers
- plastic knives
- small paper plates or napkins
- images of the Sun

Preparation

Cut licorice candy into short pieces and separate the strands. This activity can be messy, so we recommend table coverings and have a garbage bag nearby. We also like to divide the ingredients into a few smaller containers so multiple participants can use them at the same time.

To Do and Notice

1) Begin the activity by finding out what participants already know about the Sun. What does the Sun look like? Is it the same all over? Is it the same all the time? It might be helpful to have a few telescope images of the Sun on hand to serve as examples. Many participants might not have seen such an image before or have not looked at one closely. You'll find links below for some good sources of images.

2) Give each participant a plain cookie and ask them to spread white frosting on top.

3) Shake some yellow and red sprinkles on the frosting. These form the granular appearance of the photosphere.

4) Place a few chocolate chips on the cookie to serve as sunspots. You might want to mention that sunspots appear in pairs and suggest them to put two chips close to each other.

5) Place a few pieces of licorice on the cookie, forming small arches. They can stand straight up as in the example above or lie flat to protrude off the edge of the cookie. These are prominences. You might want to mention that prominences are generally found near sunspots, where the area is active and has a stronger magnetic field.

Activity Notes

Please note that the features we model with the cookie and toppings are only those of the surface layers of the Sun, which are the photosphere, the chromosphere, and the corona. These are features that we can see without any aids (sunlight), with simple pinhole projectors (sunspots), with eclipse-glasses (sunspots and some prominences), and with telescopes (all of the above plus granulation of the photosphere). To find out more about these layers and features, please refer to the links below.

Related Websites

From Core to Corona: Introduction and definitions to the Sun's layers and features
http://fusedweb.pppl.gov/CPEP/Chart_pages/5.Plasmas/SunLayers.html

Sun-Earth Viewer: live solar images from multiple observatories
(Click "Download Full-Size Image" on the bottom right for printable versions.)
http://ds9.ssl.berkeley.edu/viewer/flash/