National 4-H Volunteer e-Forum is coming to a Clemson University Cooperative Extension office near you!!! Visit: Clemson.edu/4h/4h_volunteer for more information. Thursday evenings this fall from 6:30 – 8:30pm will provide national networking opportunities in the comfort of a local office!

- October 5, 2017 - Cultivating an Environment for Growing True Leaders
- November 2, 2017 - “STEM”ming into Animal Science, Growing True Leaders
- December 7, 2017 - Helping 4-H’ers Grow in Life & Work

We look forward to seeing you at these upcoming events:

**Volunteer Conference of Southern States**

Sept. 28 – Oct. 1, 2017
@ Rock Eagle 4-H Center, Eatonton, Georgia

Cost increases to $25 from July 8 to July 28th (final deadline).

*Cost: $15.00*

*To receive the early-bird price, register by July 7*.

Clemson University Cooperative Extension Service offers its programs to people of all ages, regardless of race, color, gender, religion, national origin, disability, political beliefs, sexual orientation, gender identity, marital or family status and is an equal opportunity employer.
Monthly 4-H Club Activity Idea  

Pinhole Projection  

Objective: To understand how to safely view a solar eclipse  

Age Range: All ages  

Hands-on Activity: Create a pinhole projection board to safely view the 2017 solar eclipse.  

Life Skills: HEAD = learning to learn, planning; HEALTH = personal safety, healthy lifestyle choices.  

Introduction  

With the August 21, 2017, solar eclipse fast approaching, we want to make sure everyone knows how to safely view this event! For more information and recommendations from NASA, especially about what glasses to use, visit [https://eclipse2017.nasa.gov/safety](https://eclipse2017.nasa.gov/safety).  

ALWAYS FOLLOW SAFE SOLAR VIEWING PROCEDURES. LOOKING DIRECTLY AT THE SUN DURING A SOLAR ECLIPSE WITHOUT SPECIAL PURPOSE PROTECTIVE SOLAR FILTER GLASSES (“ECLIPSE GLASSES”) CAN RESULT IN SERIOUS EYE INJURY INCLUDING BLINDNESS.  

Only using eclipse glasses that meet the following criteria:  

- Have certification information with a designated ISO 12312-2 international standard, and have the manufacturer’s name and address printed on the product.  
- DO NOT use if they are older than three years, or have scratched or wrinkled lenses.  
- DO NOT use homemade filters.  
- DO NOT use ordinary sunglasses — even very dark ones.  
- DO NOT look at the uneclipsed or partially eclipsed sun through camera, telescope, binoculars, or other optical device.  

TOTALITY: The only time you do not need to wear the eclipse glasses when viewing the sun is the brief period when the moon completely covers the bright parts of the sun, known as totality. On the main campus in Clemson, SC, totality lasts from 2:37:11 to 2:39:46 p.m. EDT. (For information about the eclipse relative to where you live, visit [https://eclipse2017.nasa.gov/sites/default/files/interactive_map/index.html](https://eclipse2017.nasa.gov/sites/default/files/interactive_map/index.html).) If you can see any part of the sun through the eclipse glasses, it is not safe to take them off. IT IS YOUR RESPONSIBILITY TO DETERMINE WHEN IT IS SAFE TO REMOVE ECLIPSE GLASSES GIVEN YOUR VIEWING LOCATION. Clemson University assumes no responsibility for any people causing harm to themselves or others by following unsafe solar-viewing procedures. By viewing the solar eclipse, you assume the risk of any possible injury, and you agree to hold Clemson University harmless for any harm caused by following unsafe solar viewing procedures. You are responsible for making sure you and, if applicable, your minor children follow safe solar viewing procedures.
So, what is an alternative to looking at the sun during the eclipse?! A pinhole projector!!! There are several versions of this basic concept that you can use to view the eclipse or other astrological events.

**Activity – Pinhole Projection**

Materials needed:
- 1 white sheet of paper or cardstock
- 2 pieces of cardboard (or a box)
- glue or tape
- something to punch a hole (a sharp pen/pencil, small box cutter)

Description:
Poke a hole in the center of one piece of cardboard. Make the edges of the hole as smooth as possible. Attach the white sheet to the second piece of cardboard. Hold the piece with the hole between the sun and the white board to show the projection. As the eclipse starts, the shape of the sun in the pinhole projection will change as the moon passes between the Earth and the sun.

**Reflective Questions**

What’s the safest way to watch the eclipse? *Don’t look at the sun!!!*

What’s the alternative to looking at the sun during an eclipse? *Using pinhole projection*

Talk about lots of aspects of the eclipse. Guiding questions will help youth interact with each other and reinforce the learning experience.

- What was easy, what was hard about this activity?
- What will happen if you make more than one hole for the sun to shine through?
- What other items (maybe things around the house) have holes that could be used for pinhole projection?
- Do you think pinhole projection occurs in nature?
- What are you looking forward to the most during the eclipse?

**Conclusion**

Enjoy the experience and let youth celebrate this momentous occasion with a learning experience that is sure to last a lifetime!

Pinhole projection used to view a solar eclipse safely diagramed (top) and displayed as a single hole using folders (middle) or with multiple holes (bottom). [https://astronomynow.com/2015/03/15/how-to-see-the-solar-eclipse-safely/](https://astronomynow.com/2015/03/15/how-to-see-the-solar-eclipse-safely/)