EPIC ECLIPSE RESOURCES

08 APRIL

Parent Resources

FUN

- Build curiosity about the eclipse by using simple language to talk about it
- Discuss the steps to help eliminate fear in younger children
- Emphasize safe viewing habits
- Watch the eclipse together as a family

DATA

- Collect data during the eclipse using an app for GLOBE Observer
- Citizen CATE and NASA's WB-57s (Telescopes and planes collect data during eclipse)

Tips for a Positive Experience Viewing the Eclipse

PAGE 2 • Safety tips from Ohio.org

PAGE 3 • Suggestions for the best viewing experience in a natural setting (time frames included) from the EECO-Environmental Education Council of Ohio

PAGE 4 • Notable Changes to wildlife behaviors during the eclipse from the EECO

ACTIVITIES

PREDICT

- Exploratorium Hands On Activities
- Download the Big Kid Science App to see the path and info
- NASA's Eclipse Art Projects

OBSERVE

- YouTube Video of Path Over World Map w/speed and width
- Map of path of the eclipse

DISCUSS

- NASA and Eclipses What you need to know!
- NASA's Neurodiversity Planning Guide

HOW TO VIEW A SOLAR ECLIPSE SAFELY

A total solar eclipse occurs when the moon completely blocks the sun's bright face, also known as totality, and day momentarily turns into night.

The only safe way to look directly at the sun during an eclipse is through special-purpose solar filters, like eclipse glasses or handheld solar viewers.

The only safe time to look at the sun without solar filters is during the 2-4 minutes of total eclipse. It is never safe to look at the sun without solar filters during any other phases of the eclipse.

TOTAL ECLIPSE OF THE HEART OF IT ALL

Center line of total eclipse

Outer boundaries of the path of totality viewing area

HERE ARE SOME TIPS FOR SAFELY VIEWING THE ECLIPSE:

- Only look at the eclipse through a special-purpose solar filter. Safe eclipse glasses should comply with ISO 12312-2 international standard.
- Homemade filters or ordinary sunglasses, even very dark ones, are unsafe. They transmit too much sunlight and could damage the eyes.
- Inspect your solar filter; discard if scratched or damaged. Follow any instructions for the filter.
- Always supervise children using solar filters.
- Stand still, cover your eyes with your eclipse glasses or solar viewer before looking at the sun. Afterward, turn away before removing your filter — never remove it while looking at the sun.
- Do not look at the uneclipsed or partially eclipsed sun through an unfiltered camera, telescope, binoculars, or other optical device.
  - Similarly, do not look at the sun through a camera, a telescope, binoculars, or any other optical device while using your eclipse glasses or hand-held solar viewer — the concentrated solar rays will damage the filter and enter your eye(s), causing serious injury.
  - Seek expert advice before using a solar filter with a camera, a telescope, binoculars, or any other optical device. Note that solar filters must be attached to the front of any telescope, binoculars, camera lens, or other optics.

Experience the solar eclipse with your senses!

Focus specifically on your sight, touch, and hearing. Enjoy the magic!

By Annika Moore, math specialist, Ohio Dept of Education and Workforce

Plan time for the experience.

USE SPECIAL ECLIPSE GLASSES TO PROTECT YOUR EYES!

Start around 1:30p.m. on April 8, 2024 and plan to stay until around 4:30p.m..

Find a space where you have nature around you, a field with trees and bushes around the perimeter, a yard with some trees and bushes or by a lake, all these places will be perfect. Make sure you can see the sun from where you are.

Bring a blanket or a chair to sit on. Make sure you have water to drink if it is a hot day. Bring some snacks as well. Make it an Eclipse Picnic.

Make sure that the people you are with will be fine with you asking them to be silent at certain times.

Around 1:30-1:45

Feel the temperature in the air.

What does it feel like? Try really describing the warmth on your body, don't forget about describing the humidity, the wind and anything else you experience.

Listen to the sounds around you. This is when you want to listen to nature, not the people you are with. Ask them to be silent and listen with you. Talk about what you hear. Are there birds making sounds, are there other animals making sounds, does the wind make any sounds going through the trees and bushes?

Wearing your special, protective glasses – what does the sun look like? Are there clouds (I hope not) covering the sun? Will there be a risk for clouds to cover the sun in the next hour or so?

Around 2:00

The moon will start to slowly, slowly cover the sun. You probably won't notice it in the beginning.

Can you figure out which of the three astronomical bodies are moving, the sun, the moon, and/or Earth? If they are moving, in which direction are they moving?

Around 2:45 – 3:15

Focus on the eclipse and be silent.

WEAR YOUR PROTECTIVE GLASSES ALL THE TIME! If you in the band of totality, you can take the glasses off for totality, but only while the sun is completely eclipsed. Be sure to put them back on before the first speck of the sun reappears.

Watch how the sun gets more and more covered.

When the sun is totally covered – is it just a black spot in the sky? Try to remember what it looks like (because it will take another 400 years before you can see it again from the same spot!).

Watch as the sun slowly starts to appear again.

At the same time

Feel the temperature in the air. What does it feel like? Try really describing the warmth on your body, don't forget about describing the humidity, the wind and anything else you experience.

Listen to the sounds around you. This is when you want to listen to nature, not the people you are with. Ask them to be silent and listen with you. Talk about what you hear. Are there birds making sounds, are there other animals making sounds, does the wind make any sounds going through the trees and bushes? Is this different from what you heard earlier in the afternoon?

After totality ends

Watch as the moon slowly moves past the sun. What changes do you notice as things return to "normal". I hope you enjoy your eclipse experience.

2017 Solar Eclipse from Cleveland, Ohio. Photo by Nicholas Eckhart

Wildlife during the Total Solar Eclipse Join our Research Project!

By Abby Ditomassi, Wildlife Education Coordinator, Division of Wildlife

On April 8, 2024, a total solar eclipse will sweep over Ohio for the first time since 1806. There has been a lot of hype over this once-in-a-lifetime event since the next total solar eclipse in Ohio will be in 2099. While people all over the country may be looking up to the sky to experience the eclipse, I encourage you to look around and observe how wildlife reacts to this rare spectacle.

I experienced my first solar eclipse when I traveled to Tennessee with friends in August of 2017 to be in the path of totality. While I didn't think to observe wildlife during the eclipse, the noticeable temperature drop as the moon blocked the sun's light is hard to forget. During those few minutes of total darkness, swarms of mosquitoes came out to snack on me and my friends. This was quite unexpected! Thankfully, Ohio's 2024 eclipse will occur in early April when mosquitoes are less active.

Since total solar eclipses are rare, most of what we know about wildlife behavior during the eclipses is anecdotal, like my mosquito observation. These anecdotal observations have, however, been supported by a few studies. According to a study conducted in Nebraska during the 2017 eclipse, which lasted for a total of three hours with 2.5 minutes of totality, light levels dropped by 67%, leading to a temperature drop of 6.7 degrees Celsius and a 12% increase in humidity. In the order Orthoptera, which includes crickets and katydids, it is known that the call frequencies lower when temperature drops and increase when temperatures rise. Field and tree crickets, normally nocturnal callers, increased their calls during totality, whereas cicadas and ground crickets, which call during the day, became quiet at totality. Birds also reported lower levels of call volume during totality for four different prairie and woodland sites, since most species call during daylight hours. The volume of bird calls then resumed to pre-eclipse levels after totality. Although bats and owls have been observed anecdotally during total solar eclipses, this study found no evidence of activity from these nocturnal animals. Other species have also been observed by researchers in other countries, such as honeybees returning to their hive during totality and orb-weaving spiders taking down their webs during totality, only to rebuild after the sun returned.

A very limited amount of data is available on fish, reptiles, and frogs during the eclipse. This is not surprising given the difficulty of tracing around the world to research wildlife during these rare total eclipses. Perhaps we should assist scientists by making sound scientific observations for them since millions of people will gather in the path of totality. Even if you don't take your eyes off the eclipse, listen for animals that are (or aren't) singing, such as songbirds, insects, frogs, and owls. You can use the Merlin Bird app or iNaturalist to record audio clips before, during, and after totality to make the data official. A project has been created on iNaturalist to collect observations on eclipse day. If you are interested in contributing to citizen science data through photos or audio, you can join the Ohio Wildlife Observations: Solar Eclipse 2024 project here. I hope to observe frogs and hypothesize that spring peepers will increase call rates as totality approaches and decrease rates to pre-eclipse levels after totality passes since they are usually nocturnal singers. What type of animal will you observe during the 2024 solar eclipse?