



# My Eclipse Lapbook & More!



**IAHE**

Indiana  
Association of  
Home Educators

**Educational Resource**



## How to use this ebook

Unlike other IAHE educational materials, this lapbook is designed to not only give you learning content within the ebook, including videos, book suggestions, and some content from NASA, but also to give you several pieces to build your own unique lapbook! There is more here than you will likely be able to place into one lapbook, but this will give you the option to design a unique experience for your children in your homeschool.

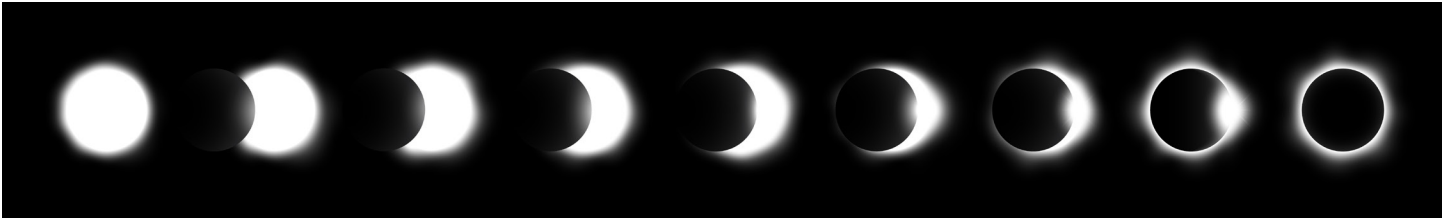
Also included are suggested snacks and crafts that you could do on your own as part of an eclipse party with others. Have fun!

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# Eclipse FACTS



According to NASA.gov, there are four different types of solar eclipses.

## Total Solar Eclipse

A total solar eclipse happens when the Moon passes between the Sun and Earth, completely blocking the face of the Sun. People located in the center of the Moon's shadow when it hits Earth will experience a total eclipse. The sky will darken, as if it were dawn or dusk. Weather permitting, people in the path of a total solar eclipse can see the Sun's corona, the outer atmosphere, which is otherwise usually obscured by the bright face of the Sun. A total solar eclipse is the only type of solar eclipse where viewers can momentarily remove their eclipse glasses (which are not the same as regular sunglasses) for the brief period of time when the Moon is completely blocking the Sun.

## Annular Solar Eclipse

An annular solar eclipse happens when the Moon passes between the Sun and Earth, but when it is at or near its farthest point from Earth. Because the Moon is farther away from Earth, it appears smaller than the Sun and does not completely cover the Sun. As a result, the Moon appears as a dark disk on top of a larger, bright disk, creating what looks like a ring around the Moon.

## Partial Solar Eclipse

A partial solar eclipse happens when the Moon passes between the Sun and Earth but the Sun, Moon, and Earth are not perfectly lined up. Only a part of the Sun will appear to be covered, giving it a crescent shape. During a total or annular solar eclipse, people outside the area covered by the Moon's inner shadow see a partial solar eclipse.

## Hybrid Solar Eclipse

Because Earth's surface is curved, sometimes an eclipse can shift between annular and total as the Moon's shadow moves across the globe. This is called a hybrid solar eclipse.

## Path of an Eclipse

As the earth spins and the moon continues its orbit, the path of a solar eclipse will appear to move along the face of the earth. Different states will see an eclipse at different times of the day.

## Viewing an Eclipse

It is extremely important to NEVER look directly at the sun. Always use a special device such as NASA approved eclipse glasses, a special solar protector for an item such as a telescope (getting advice from an astronomer on the type of protector is a must!), or you can make your own pinhole projector.

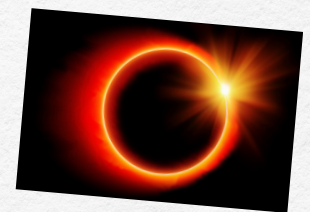
Eclipse glasses are specially designed to be extremely dark, allowing no more than 0.00032% of sunlight to penetrate the dark lenses.

Never use regular sunglasses, and be careful to make sure that the eclipse glasses purchased have been rated as safe - there are many scammers selling their phoney eclipse glasses! A list of approved vendors can be found on the NASA website.

## Make Your Own Pinhole Projector

Items Needed:

- Cardboard box
- White sheet of paper
- Tape
- Scissors
- Piece of aluminum foil



### Directions

**Step 1:** Punch a pinhole into the aluminium foil.

**Step 2:** Tape it over one side of the box.

**Step 3:** Tape the white sheet of paper to the inside of the other side of the box.

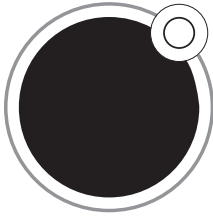
**Step 4:** Stand with the sun behind you.

**Step 5:** Light will stream through the pinhole and project a crescent sun onto the white sheet of paper in the box.

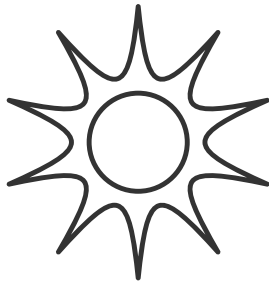
**Step 6:** Look into the box through another hole you cut into the box to see the projected image.

**Step 7:** Do **NOT** look at the sun through the pinhole.

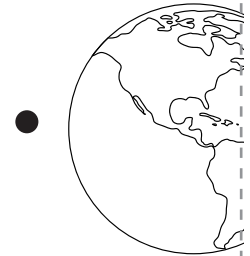
# My Solar Eclipse Lapbook



\_\_\_\_\_ (Date)



An \_\_\_\_\_ is what happens when the moon passes in between the earth and the sun.



Use a brad to connect the dots on your moon piece (bottom left) and the piece above. Then you spin your moon in front of the face of the sun.

Cut along the dotted lines and fold on the solid lines. Glue the flaps into your lapbook to make a pocket for your glasses.

**Solar Eclipse  
Safety Glasses**



Cut out these pieces on this page and the next and fill them out. After completing them, stack them and attach them to your lapbook.

# My Solar Eclipse Journal

\_\_\_\_\_

(Name)

Where did you watch the eclipse? \_\_\_\_\_

\_\_\_\_\_

How far did you travel? \_\_\_\_\_

\_\_\_\_\_

How did you view the eclipse? \_\_\_\_\_

\_\_\_\_\_

Who watched it with you? \_\_\_\_\_

\_\_\_\_\_

Describe the eclipse: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

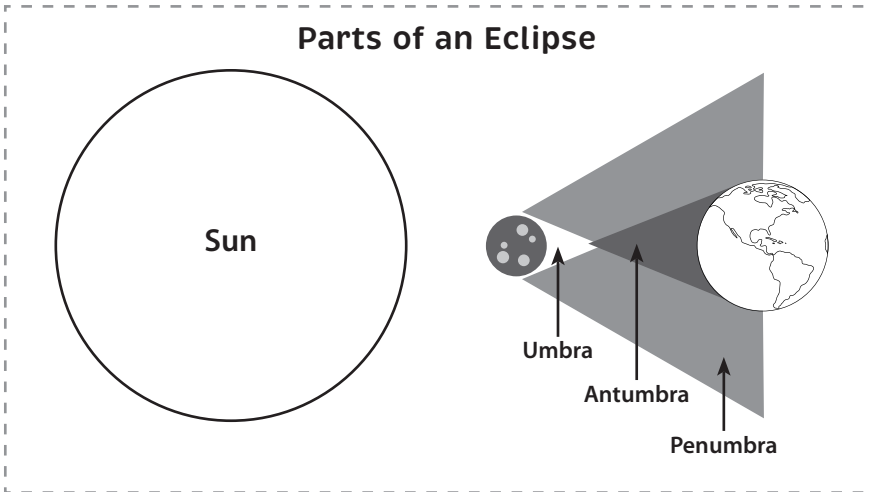
\_\_\_\_\_



Cut and stack these pieces, gluing the left side so that it opens like a book.  
Cut the dotted lines so that you can lift each word to see the definition below.

All definitions are from the American Heritage Dictionary, 5th edition.

<b>Vocabulary</b>	<b>Umbra</b>	The completely dark central portion of the shadow cast by the earth, moon, or other body during an eclipse.
	<b>Penumbra</b>	A partial shadow, as in an eclipse, between regions of complete shadow and complete illumination.
	<b>Antumbra</b>	The antumbra is the lighter part of a shadow that forms at a certain distance from the object casting the shadow.
	<b>Eclipse</b>	The partial or complete obscuring, relative to a designated observer, of one celestial body by another.
	<b>Totality</b>	The phase of an eclipse when it is total.



### Types of Solar Eclipses

Total

Annular

Partial

We saw a \_\_\_\_\_ eclipse.

### Phases of an Eclipse

**First Contact**  
At the start of the eclipse, the Moon first starts to cover the Sun.

**Second Contact**  
The Moon covers the disk of the Sun - this is when a Total Solar Eclipse begins.

**Totality**  
The Sun is completely covered, and only its corona (halo) may be seen.

**Third Contact**  
The Moon starts to move away and parts of the Sun will begin to reappear. Total Solar Eclipse ends.

**Fourth Contact**  
At the end of the eclipse, the Moon no longer covers the Sun.

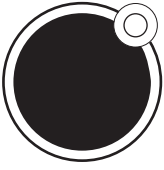
Cut along the dotted lines, and fold at the solid lines. Bend the flaps inward and over the title.

There are 2-5 solar eclipses per year.

The temperature drops up to 20 degrees during a total eclipse.

If the sun is not covered by the moon by 90% or more, a total solar eclipse is not noticeable.

**Eclipse Facts**



Light is affected and even at 99% covered, the sky is no darker than most twilight hours.

7 minutes and 30 seconds is the longest duration for a total solar eclipse.

A total eclipse happens somewhere across the globe every 1.5 years.

There is a story in **Korean** folklore that says a dog stealing the sun is what causes a solar eclipse.

**Egyptians** believed an eclipse foretold a large impending misfortune, such as an harvest failure or death of the king.

In **Greek** the word eclipse means "abandonment" or "downfall."

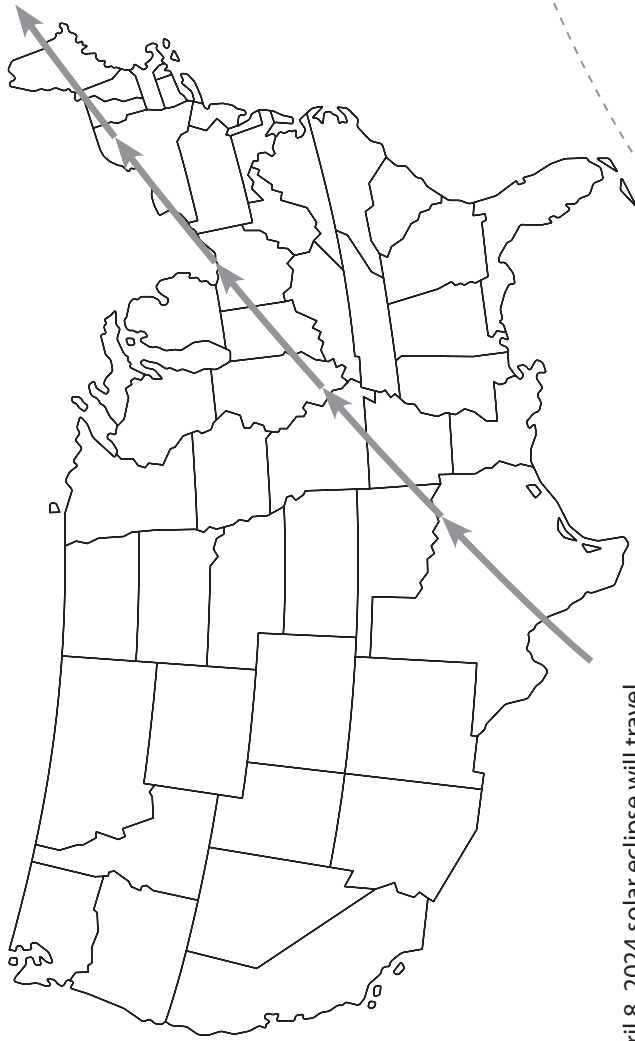
A solar eclipse in the science world is known as "occultation," from the **Latin** "to hide, conceal."

## Eclipses from History

Cut along the dotted lines, and fold at the solid lines. Bend the corners inward so that each letter matches. Glue the middle portion of the triangle into your lapbook so that it opens outward. Cut out the title and place next to the triangle in your lapbook.



# The path of the 2024 eclipse.



The April 8, 2024 solar eclipse will travel through a large portion of the United States - passing over twelve states. Texas, Oklahoma, Arkansas, Missouri, Illinois, Indiana, Ohio, Pennsylvania, New York, Vermont, New Hampshire, and Maine are all in the path of totality, while other states will be able to see a partial eclipse.

Cut out and place your sun on a popsicle stick and cut along the arched dotted lines on the map. Have your solar eclipse follow along from Texas through Maine!



# Party Time!

Organize a solar eclipse viewing party. You can do this with friends, family, your co-op, church group, or anyone else. On the next few pages are some snack ideas, a fun craft, an experiment, and suggested videos and books that you can do together.

Be sure to take a photo of your group wearing your eclipse glasses, and include it in your lapbook!

## Suggested eclipse-themed snacks

- Moon Pies
- Sun chips
- Sun tea
- Eclipse gum
- Sunkist soda
- Caprisun
- Chocolate donut holes
- Yellow iced cupcakes with an oreo on top



## Phases of an Eclipse Oreos

Carefully take off the top layer of your Oreo, and shift it to represent the moon - the white layer left behind on the other half of the cookie represents the sun. Arrange on a plate to show the phases of an eclipse.





## Solar Eclipse Glow Shirt

### Items Needed:

- Black shirts
- Fabric Paint that glows (orange, yellow & white glow-in-the-dark paint, or "GITD")
- Regular fabric paint (red, orange, & yellow)
- Foam paint brushes
- Stiff paint brushes
- Paper plates
- Packing tape
- Cardboard

### Directions

**Step 1:** Working on a surface that is protected from the paint, place a piece of cardboard inside the shirt to keep the paint from soaking through to the back.

**Step 2:** Roll some tape so as to be sticky on both sides and place it on the eating-side of the paper plate. Stick this into the center of your shirt where your black circle will be for the eclipse.

**Step 3:** Dip your stiff brush in paint (glow-in-the-dark yellow is best!) and using your thumbnail, flick small dots around your shirt - these will be your stars. Repeat this step with GITD white paint. Allow this paint to dry.

**Step 4:** *Be sure to hold the plate down firmly for these next steps!*

Next, carefully with strokes radiating outward from the paper plate, use regular red paint. These strokes should extend about 2-3 inches out from the plate. Allow to dry briefly.

**Step 5:** Using regular orange paint, repeat the same method as with the red, but only extending out as far as about 1-1.5 inches from the plate. Let dry.

**Step 6:** Now using regular yellow paint, repeat the same method as with the red and orange, but only extending out as far as about 1/2 inch from the plate. Be sure to not cover the orange. Let dry.

**Step 7:** Finally, once all of the regular paint layers are dry, use orange GITD paint to go over the visible orange. Follow with yellow GITD paint over the yellow. (Don't worry about painting the red.) Finally, use the white GITD paint to paint along the inside rim of the black.

Let dry completely, and it's ready to wear!



# At-Home Experiment

Go into a room in your house that can be totally dark with a flashlight. Turn off all the lights and use only the flashlight to light the room. Have one person slowly cover the flashlight. Answer the following questions on the experiment log below to include your hypothesis in your lapbook. You can also include a photo of you and everyone conducting the experiment with you!



## Recreating an Eclipse Experiment

When do you really notice a difference in the light of the room?

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What does it look like when the flashlight is 90% covered?

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Do you think that is what it would be like in a solar eclipse or will it seem brighter outside? Why?

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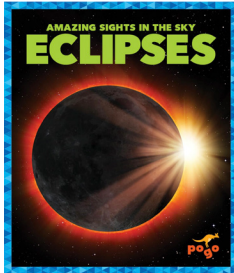
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# Learning More about Eclipses

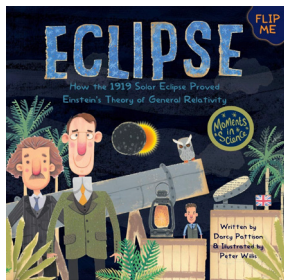
Check out some of these books to read during your party,  
or watch some videos.



**Eclipses (Amazing Sights in the Sky)**  
by Jane P. Gardner



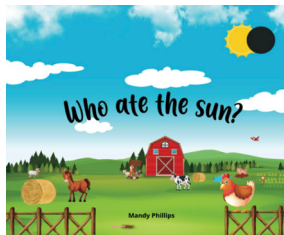
**Why Does the Eclipse Move  
from West to East?**



**Eclipse: How the 1919 Solar Eclipse Proved  
Einstein's Theory of General Relativity**  
by Darcy Pattison



**The Solar Eclipse Song**



**Who Ate the Sun?**  
by Mandy Phillips



**What is a Solar Eclipse?**  
NASA



Images (all images are from Depositphotos unless otherwise indicated):

Cover: #302209642

Earth: #178404180

Page 3: #158047308, #31325893, & #31764203

Page 4 (sun): #606440958

Page 9: #108219612

Page 10: #65228573 & #600844008; oreos - Amanda Runge

Page 11: Amanda Runge

Page 12: #3846803