



# Solar Eclipse Safety

**MONDAY**  
**APRIL 8TH, 2024**  
**2PM-3:30PM**



**INROADS**  
TO  
**OPPORTUNITIES**

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Dear Inroads Program Participants,

On April 8, North America will experience a **total solar eclipse**, stretching across parts of Mexico, the U.S. and Canada, which will be visible to approximately 31.6 million people.

A total solar eclipse is when the moon completely blocks the sun, temporarily darkening the sky. Looking directly at the sun can cause damage to the retina due to the strong amount of UV light.

***What time will this happen in New Jersey?***

The eclipse will start at 2:10 p.m. local time and peak at 3:24 p.m. The sun will return to its full brightness at 4:36 p.m. The sun will appear as a crescent shape and daylight will be dimmed as the moon partially blocks the sun.

**It is really important that we protect our eyes and skin during this time.**

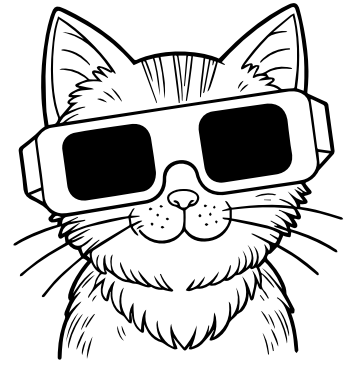
**Here are some safety tips for viewing the solar eclipse:**

- Do not stare directly into the eclipse. You can damage your eyes!
- Wear sunscreen with a high SPF and broad-spectrum protection. Reapply it every two hours if you are outside.
- Wear a hat that covers your head, face, ears and neck. A wide-brimmed hat is ideal, as it can also shield your eyes from the sun.
- Wear protective clothing that covers your arms and legs. Choose light-colored, loose-fitting and breathable fabrics that can keep you cool and comfortable.
- Seek shade whenever possible, especially during the peak hours of the sun's intensity (between 10 a.m. and 4 p.m.)
- Drink plenty of water to stay hydrated, and avoid heat exhaustion or heatstroke.

# How to make your own Solar Eclipse Glasses

## Materials Needed:

- A large piece of poster board or card stock.
- A template for your glasses
- A solar filter.
- A roll of blue painter's tape.
- Scissors.
- A pen.



## Prep Your Frames

If you're making your own frames from scratch, start by laying out poster board or card stock on a flat surface.

Next, draw your outline or place your printed template on top. Once your paper is prepped, use your scissors to cut out the frames. You should have one rectangular piece with cutouts for your nose and eyes, as well as two separate handles for your ears.

Next, measure and cut the solar film so that it completely covers the eye holes of your glasses. Make sure not to puncture or scratch the film while handling it because any deformity can diminish its protective quality. Also, be sure not to cut the film too close to size; you want there to be a decent overlap so that no light can leak through the edges of the eye holes.

**Secure With Tape** Once your solar film is in place, secure it to your frames of choice with your roll of blue painter's tape. If you're making your solar eclipse glasses out of poster board or card stock, it's time to tape the earpieces in place as well.

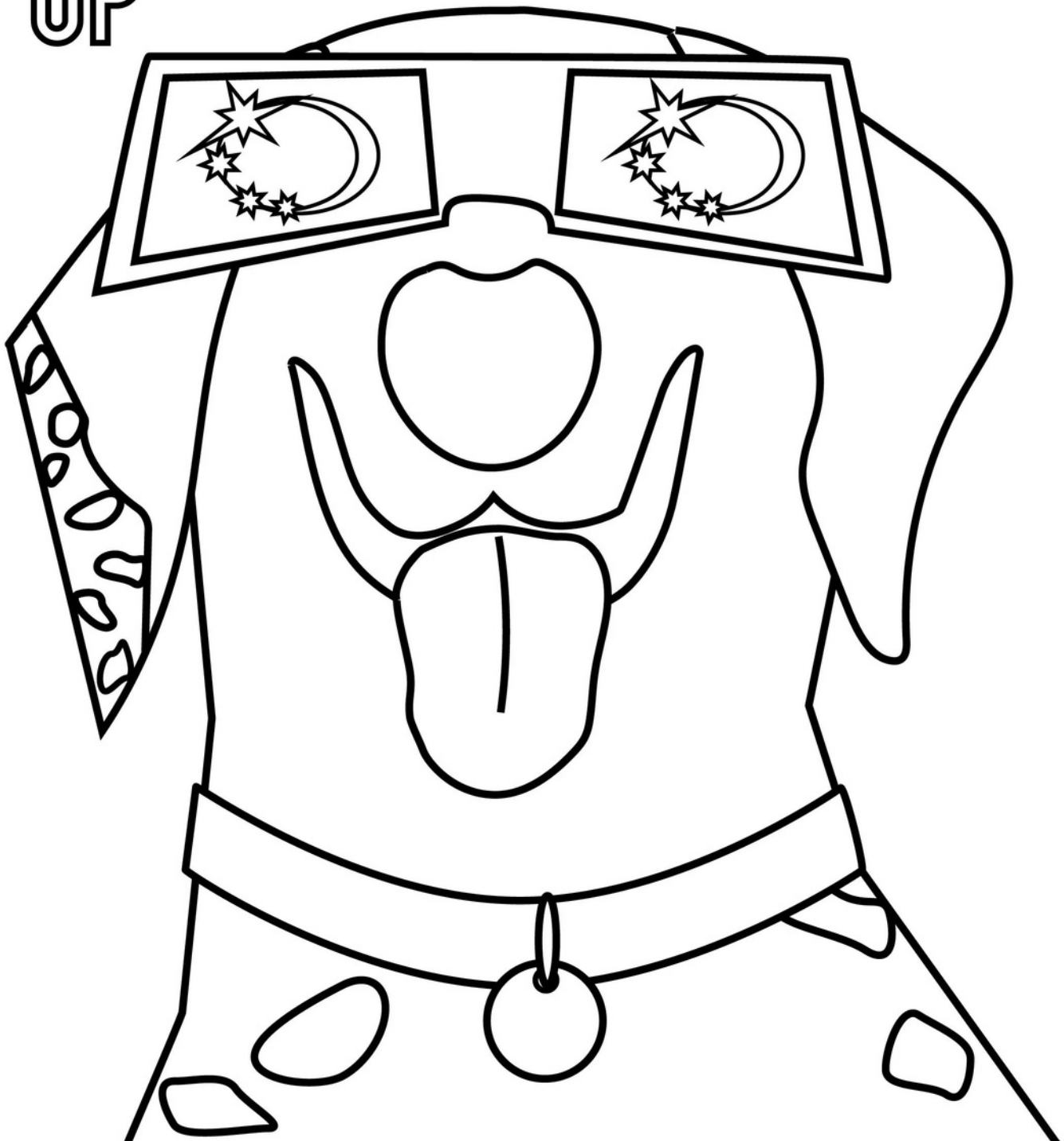
**Test your frames** To determine the safety of your glasses, it's time for a test run! Go into a dark room, put the glasses on, and have a friend shine a flashlight in your direction. If any of the bright light comes through (without the yellow/orange hue), you need to try again!





TOTAL SOLAR ECLIPSE 4.8.24

KEEP  
LOOKING  
UP





# SHADOWS AND ECLIPSES

**A SHADOW IS FORMED WHEN AN OBJECT OBSTRUCTS THE PATH OF LIGHT.**

Shadows refer to the areas where one celestial body casts its shadow on another. There are two primary types of shadows involved in eclipses: umbra and penumbra.

**01**

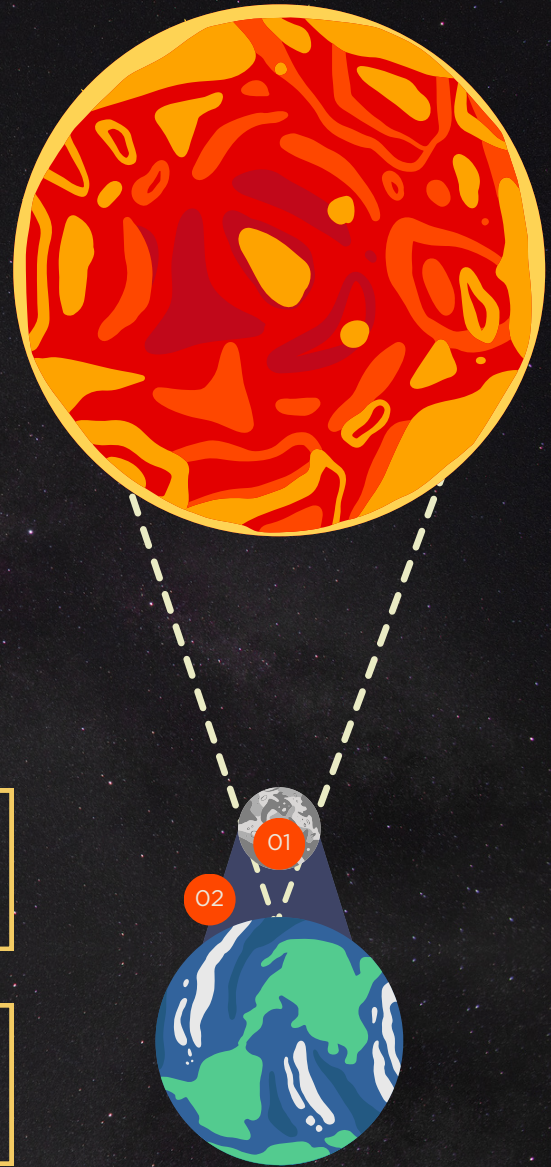
## **UMBRA**

The darkest part of a shadow where the light source is completely blocked.

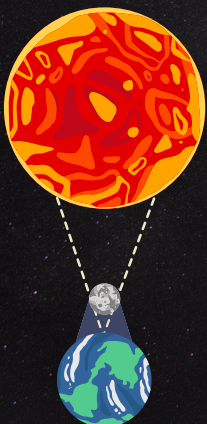
**02**

## **PENUMBRA**

The penumbra can be seen as the partially shaded area surrounding the umbra.



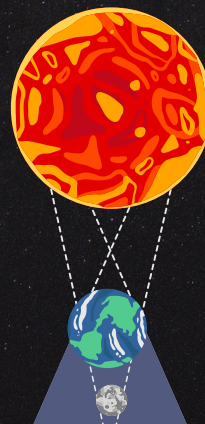
# TYPES OF ECLIPSE



## **SOLAR ECLIPSE**

A solar eclipse occurs when the Moon passes between the Sun and Earth, blocking or partially blocking the Sun's light.

This can result in a partial or total obscuration of the Sun.



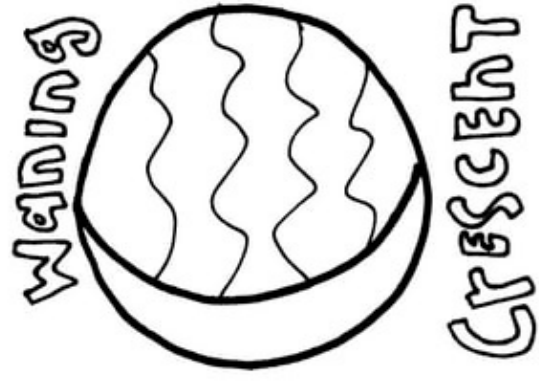
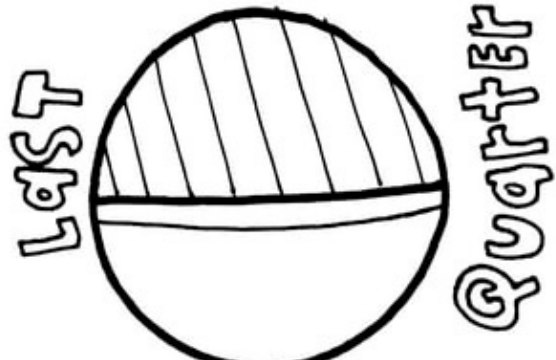
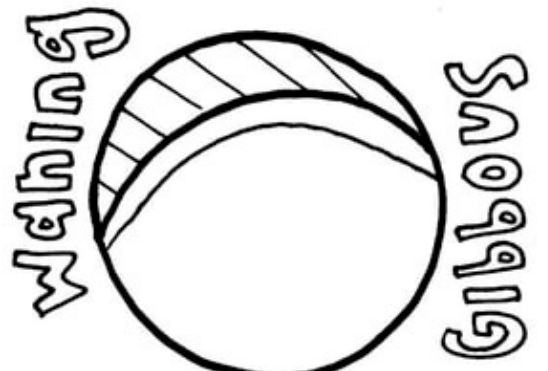
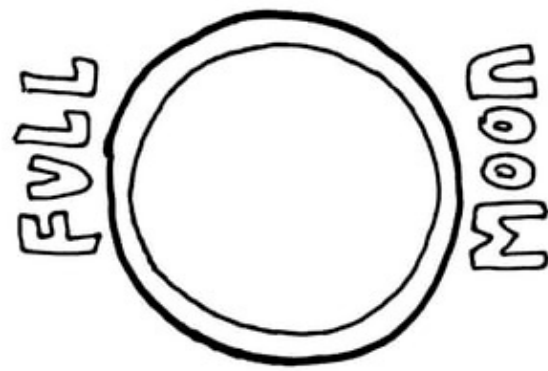
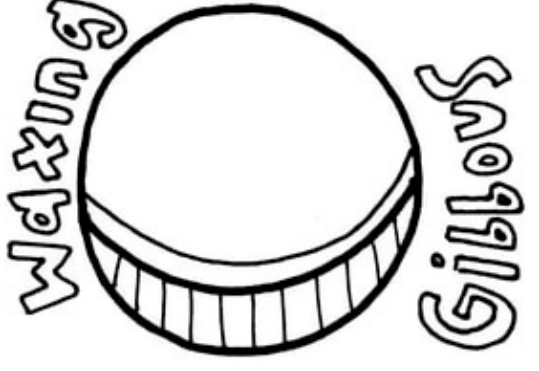
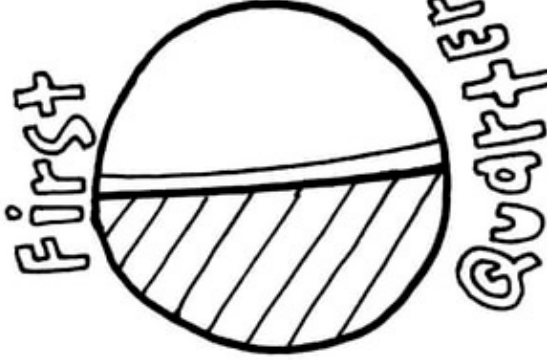
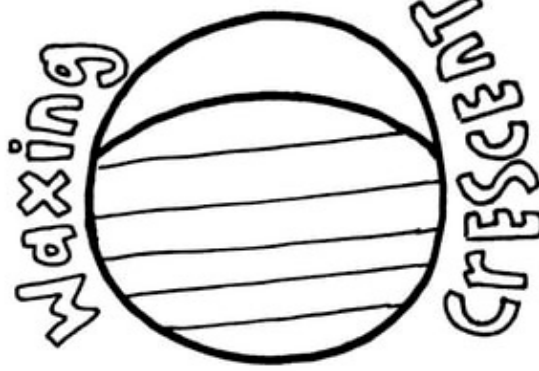
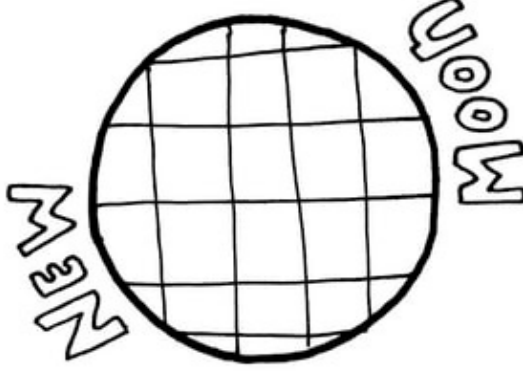
## **LUNAR ECLIPSE**

A lunar eclipse takes place when Earth comes between the Sun and the Moon, causing Earth's shadow to be cast on the lunar surface.

This results in a darkening or reddening of the Moon.



# PHASES OF THE MOON



# Solar Eclipse

L	A	A	T	I	O	C	O	R	R	I	I	I	Y
A	T	S	E	M	I	T	E	F	I	L	E	D	V
A	W	P	E	C	N	E	I	C	S	D	C	I	G
S	N	A	N	L	A	S	P	N	E	W	L	Y	S
T	L	C	I	O	P	S	A	A	H	R	I	E	Y
A	A	E	G	W	L	E	T	S	T	H	P	E	T
R	V	E	H	A	N	A	A	E	U	H	S	A	I
S	P	T	T	O	K	I	M	I	N	E	V	E	L
H	T	R	A	E	O	R	B	T	O	O	U	I	A
T	I	B	R	O	M	A	T	T	N	E	V	E	T
A	S	C	C	T	N	D	A	A	E	H	N	W	O
C	S	T	W	O	D	A	H	S	E	E	A	N	T
S	D	M	C	A	Y	A	D	V	Y	O	I	N	E
A	L	H	B	S	W	T	I	S	D	W	O	R	C

SPACE  
EVENT  
SUN  
ORBIT  
DAY  
DARKNESS  
STARS  
MOON  
PATH  
ECLIPSE  
CROWDS  
VIEW  
NIGHT  
TOTALITY  
SCIENCE  
SHADOW  
EARTH  
LIFETIME



# FUN FACTS


## ABOUT OUR SOLAR SYSTEM

The Sun is the center of our solar system, and all the planets orbit around it.

The largest planet in our solar system is Jupiter. It is so big that all the other planets in the solar system could fit inside it.

The smallest planet in our solar system is Mercury. It is also the closest planet to the Sun.

Saturn is known for its many rings, which are made up of ice particles and rocks.



The asteroid belt is a region of space between Mars and Jupiter where many small rocks and pieces of debris are found.

