

Northern Vermont will be in the final path of totality for a total solar eclipse on Monday, April 8, 2024. This means Vermonters will experience up to three and a half minutes of complete or partial darkness between 3:20 p.m. and 3:30 p.m.—the only total solar eclipse to travel across Mexico, the United States, and Canada during the 21st century! Find out if you're in the path of totality, how to view the solar eclipse safely, and access more educational resources at [vermontpublic.org/eclipse](https://vermontpublic.org/eclipse).

**FOR WHO? THE MOON, SUN, AND YOU!** This learning guide is made for families, teachers, and children from pre-kindergarten to Grade 2.

## HOW

**WATCH:** ECHO's Science and Stories on Vermont Public broadcast or YouTube. Elizabeth will read and help us learn about *Moon Bear's Shadow* by Frank Asch and *Someone is Eating the Sun* by Ruth Sonneborn.

**LISTEN:** To the *But Why* Podcast about eclipse events in April

**ASK:** Be curious! Ask our *But Why* team questions...

**THEN** join Vermont Public and the Fairbanks Museum for extensive coverage of this epic event, including live total solar eclipse coverage from *But Why* host and executive producer Jane Lindholm and astronomy expert Mark Breen from the Fairbanks Museum and Planetarium. Find all the ways to follow live coverage at [vermontpublic.org/eclipse](https://vermontpublic.org/eclipse).

## WHY

College, Careers, and Civics Life (C3): D2.His.6.K-2. Compare different accounts of the same historical event.

Next Generation Science Standards (NGSS):

1. Waves and Their Applications in Technologies for Information Transfer | 1-PS4-3: Plan and investigate to determine the effect of placing objects made with different materials in the path of a beam of light.
2. Earth's Place in the Universe | 1-ESS1-1: Use observations of the sun, moon, and stars to describe patterns that can be predicted.

Vermont Early Learning Standards (VELS PreK-Grade 2): Learning About Our World: Science; Element 3 Earth and Space Sciences: Children construct concepts about Earth's Systems, the impacts of human activity on these systems, the Earth's place in the universe through observations, exploration, and investigations.



Vermont Public has curated **PBS LearningMedia** resources for Vermont educators of all age bands at [vermontpublic.org/educators](https://vermontpublic.org/educators). And look for the **But Why: Adventures! Northeast Nature** series, made for monthly classroom use throughout the year.

## PLAY TO PREPARE with Vermont Public

Here are ways to play and learn about why the eclipse happens when the moon crosses between the Earth and the Sun, blocking the Sun's light and casting a moon shadow on the Earth.

**FIRST**, play a game of Eclipse Tag to build vocabulary!

### DIRECTIONS

The tagger is the **SUN** (holding a flashlight). Their free hand becomes the **MOON** when it is time to unfreeze runners.

**NEXT**, the **EARTH** (one or two people) should run around.

The person who is the **SUN** can **TAG** anyone who is running as the **EARTH** by using the light of their flashlight. Be careful not to shine the light in runners' eyes.

When the flashlight shines on the people playing **EARTH** they are **TAGGED** and should **FREEZE**.

**FINALLY**, to release the tagged players, the **SUN** should use their free hand (the **MOON**) to block the flashlight's light on the **EARTH**. The tagger should say, "**ECLIPSE!**" to let the **EARTH** players run free again.

### Materials:

A flashlight  
2 players: 1 runner (**EARTH**) and 1 tagger (**SUN/MOON**) who holds the flashlight

### Vocabulary:

**SUN**  
**MOON**  
**EARTH**  
**ECLIPSE**

Tip: Use directional vocabulary to describe their relationship

## OUR FEELINGS:

It is normal for people to have a strong reaction to a solar eclipse. Fear, excitement, and awe are the most common responses.



**Fear** is common if a child feels unprepared for the event and doesn't know why it is happening.



**Excitement** tends to be more of an individualistic feeling and causes high energy (yelling, jumping, screaming, play-hiding).

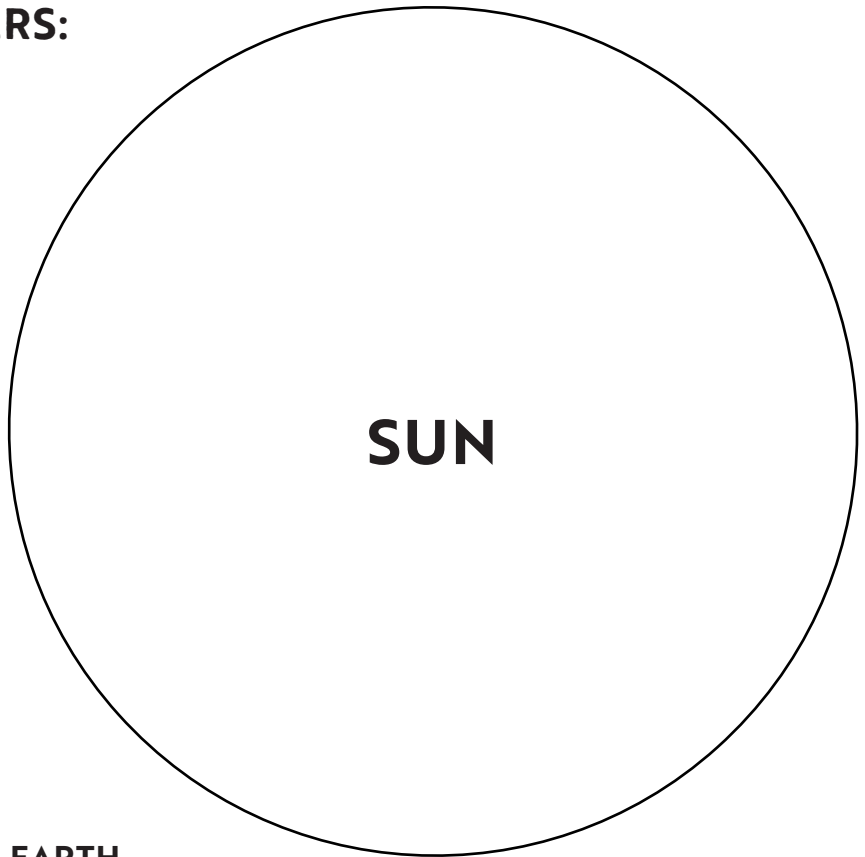


**Awe** inspires a quieter response and a feeling of connectedness with others. By focusing on empathy or meaning-making before the event, a child may be able to access a feeling of awe.

**SAFETY TIPS:** Remember we all need special eclipse glasses or a viewer (shadow camera) to watch the eclipse event safely. For kids who are sensitive to sensory stimuli, remember that many children and adults are loud during nature events. Headphones or a quiet environment away from crowds may help the child experience the event without being overwhelmed.

### CONVERSATION STARTERS:

How big is the Sun?  
How big is the Moon?  
How big is the Earth?



The Sun is around **109 times wider** than the Earth. That is a BIG difference!

Can you see the dot here? It represents the Earth. Look at how small it is when compared to the circle representing the Sun.

MOON ·

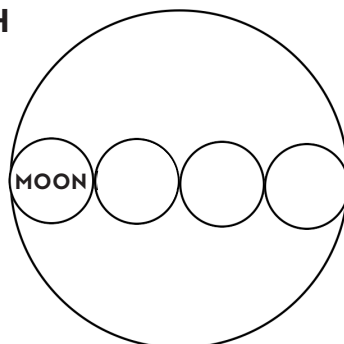
· EARTH

This dot represents the Moon. You can barely see it! The Moon is **EVEN** smaller than the Earth.

The Sun is **400 times wider** than the Moon.

### LET'S ZOOM IN ON THE EARTH AND THE MOON

EARTH



Now, we can see the Earth and Moon clearly. They are more similar in size.

The Earth is **4 times wider** than the Moon.