



“No Child Left Inside”

**Convincing administrators to have school-based eclipse viewing
and
Connecting solar eclipses to national education standards.**

Dennis Schatz (Institute for Learning Innovation)
Charles Fulco (Brooklyn Friends School)



The Problem from 2017

Our Curriculum Department prepared the teachers and shared very informative resources. They advertised to campuses which type of glasses to purchase and shared links on where to purchase.

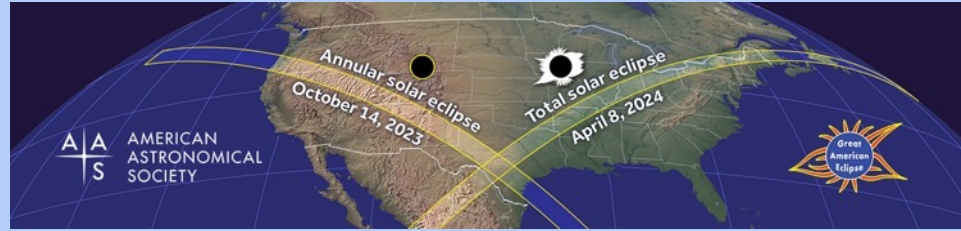
All came to a crashing end when our district leadership (superintendent) determined that the risk would be too great for our students.



The Problem from 2017

At the last minute, the district released a statement that we could watch it online, but we could not take our children out due to safety concerns and issues.

We had one principal who was supposed to walk their students a couple of blocks to a nearby park and have a program there. They were to receive their glasses when they arrived. The principal refused to let the students come unless they were given their glasses ahead of time so kids could wear them to walk to the park. We needed to explain to her more than once how that was not a good idea because the students would be able to see nothing on their walk and I could guarantee there would be more injuries if the kids tried walking to the park with the glasses on.



The Solution for 2023/2024
NSTA Dedicated Webpage to the eclipses
<https://www.nsta.org/eclipse>



NSTA has Administrator's Guide

Solar Eclipse Observer's Guides and Handouts



Guide for Educators



Guide for Administrators



Handouts for Family and Friends



Key Points in Administrator's Guide

It is important to inform school administrators EARLY and OFTEN regarding any plans related to the eclipses. Share the NSTA Administrators Guide and emphasize three things:

- Eclipses are a wonderful learning experience
- Eclipses are safe to view
- Safe eclipse-viewing techniques are easy to find and use

**Totality 2024:
No Child Left Inside!**



**SEC Albuquerque
June 2023**

**Charles Fulco
NASA-JPL Solar System Ambassador
The Brooklyn Friends School, NYC**

- **Scientific literacy is reading for understanding and forming conclusions based on evidence; it is knowledge of science, as well as the scientific framework by which people make decisions based on facts, research and knowledge, not on opinion or hearsay (Lodl, 2019)**
- **Scientific literacy emphasizes scientific ways of knowing and the process of thinking critically and creatively about the natural world (Maienschein, 1998).**
- **Scientific literacy implies the capacity to argue from evidence and to apply conclusions from such arguments appropriately (NRC, 1996)**



North Adams Community Schools

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Decatur, IN 46733



Excellence: Teach it, Model it, Inspire it, Achieve it!

August 18, 2017

Dear Parents:

An exciting learning opportunity will take place on Monday, August 21st. The Great American Total Solar Eclipse will cover our part of the country that afternoon with varying degrees of impact. Our school district is not in the direct path of the total eclipse, but we will experience a substantial darkening. This is a wonderful teaching moment brought directly to us by nature. There is no textbook required.

While this is a wonderful opportunity, it is our desire that all students understand the safety precautions that must be taken during an eclipse. As educators, we are emphasizing to all students the critical message that you do not look directly at an eclipse. It is our hope that you will reinforce this message at home.

Here at school we will follow these guidelines:

- Staff will monitor students during any outdoor activity on Monday afternoon.
- The school will operate a regular dismissal time for students.
- After school practices will be held at the regular times.
- Students have been instructed and will be reminded not to look directly at the eclipse.
- Students can indirectly observe the eclipse through a projected image or shadow.

As for reporting absences on Monday: The state is not qualifying this event as an “extraordinary circumstance” to miss school and therefore absences will be marked Absent and Unexcused.

We are excited about this event and many teachers will use this opportunity to provide a quality educational experience for students during the school day.

Experience the Eclipse Together Without Missing School:

If you wish to enjoy and experience the exceptional learning opportunity before us with your child[ren], NASA has a wonderful website dedicated to providing education, safety tips to discuss with your student[s], the history of eclipses, and an interactive countdown to the expected first contact to occur in Oregon on Monday. The website is: <https://eclipse2017.nasa.gov/>. We encourage you to join in this unique learning experience with your student[s]. We are a part of a truly memorable moment in our scientific history.

Thank you for teaming with us to make this a safe and educational experience for all students. If you have questions, please contact the school your child attends.

Sincerely,

Brent Lehman

The Good...

...the Bad...

Students at Reno High School were not allowed to watch the Great American Eclipse

Should Arizona schools watch solar eclipse districts

eclipse fears prompt class, keep kids inside? Some

Middle School mother upset kids will not be allowed outside during eclipse

Is an eclipse harmful pregnancy



Aligning Eclipse Instruction to Next Generation Science Standards

MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, **eclipses of the Sun and Moon, and seasons.**

In keeping with aligning science instruction with Next Gen Science Standards, eclipse lessons can be an integral part of your curriculum →

...Similarly, the patterns of motion of the objects in the solar system can be described and predicted on the basis of observations and an understanding of gravity...

—National Academies of Sciences, Engineering, and Medicine. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas.

Disciplinary Core Ideas

ESS1.A: The Universe and Its Stars

- Patterns of the apparent motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models. (MS-ESS1-1)
- Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe. (MS-ESS1-2)

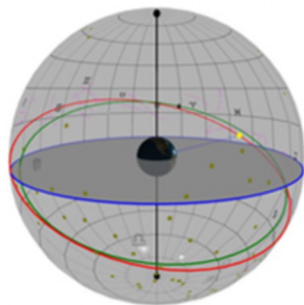
ESS1.B: Earth and the Solar System

- The solar system consists of the sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the sun by its gravitational pull on them. (MS-ESS1-2), (MS-ESS1-3)
- This model of the solar system can explain eclipses of the sun and the moon. Earth's spin axis is fixed in direction over the short-term but tilted relative to its orbit around the sun. The seasons are a result of that tilt and are caused by the differential intensity of sunlight on different areas of Earth across the year. (MS-ESS1-1)
- The solar system appears to have formed from a disk of dust and gas, drawn together by gravity. (MS-ESS1-2)

<https://eclipse2024.org/diagrams.html>

Check out Dan McGlaun's AstronomySimplified.org site for educational and fun interactive resources to augment and enhance your standards-based eclipse instruction

[Diagram 10:](#)




Combining the Motions of the Sun, Moon, and Nodes

We've brought it all together for you, and given you a tool for observing the relative motion of all the main players in the eclipse game!

[See the instructions for Diagram 10](#)

Why is it important for students and teachers to be outdoors during an eclipse?

- 
- A once in a lifetime opportunity for most; the average wait for a total eclipse to come to your doorstep is > 360 years
 - No technology on a screen can replicate the experience of being within the lunar shadow
 - Many scientific and educational opportunities will be wasted if students are not allowed to observe, record and share their results with other organizations and projects
 - STEAM learning is best done in an authentic environment
 - Large groups of students can immediately "turn and talk," and "share and compare" during and after the event
 - Outdoor event can be easily covered by local media outlets, thereby helping to promote eclipse outreach and interest

How can you convince your administration to do the right thing?

- **Educate** administrators & parents in advance
- **Reduce** the prospect of and fear of lawsuits
- **Demonstrate** that there are many safe ways to view a solar eclipse, even for elementary students
- **Reinforce** that this is a celestial event that won't be repeated in the U.S. until 2045!
- **Show** videos and images of students, even very young ones safely observing an eclipse (a little embarrassment can go a long way)

A Rare and Special Opportunity

With proper set-up, outreach, coordination, publicity and engagement, we, as science teachers, can overcome scientific illiteracy (even from our administrators)

Create large-scale hybrid engagement models:

- **Reach new audiences**
- **Build momentum in science literacy**
- **Sustain success and interest levels through continued activities well after the eclipse is over**
- **This is just the beginning...**



Thank you so much for your time and enthusiasm, and for wanting to be involved in this once-in-a-lifetime educational event!

Email:

totality2024@gmail.com

Facebook:

<https://www.facebook.com/totality24>

<https://www.facebook.com/totality2017>

NCLI website:

Coming Soon!

Remember—it's up to YOU to promote *real and authentic science* to your students...even when others don't