



Column: Elementary Explorations Earth & Space Science

Kristen Poindexter

Abstract

This article provides several suggestions for implementing Earth and Space science activities into the K-5 classroom ahead of the 2024 solar eclipse. Additionally, several resources, including children's literature, downloads, and websites are provided with specific K-5 eclipse activities so that teachers can incorporate them into their classrooms.

With the Great American Eclipse approaching in 2024, I have started to compile activities that I can share with my Kindergarten students so that they can begin to understand simple eclipse concepts and also learn about earth and space science. It can be a struggle with how to teach younger children about earth & space science when many of the concepts are so abstract.

Kindergarten Science standard K-ESS2-1 asks teachers to help students document daily weather changes and note patterns over time. This standard is easy to include in a daily calendar routine in any grade level. We use the Weather Graph from Math Their Way (see resources below for link) to chart the weather daily. We post these in our classroom at the end of each month and discuss any changes we see in the weather. For example, from August to October, we noticed an increase in cloudy and rainy days, indicating a shift in the seasonal weather patterns.

First grade Science standard 1-ESS1-1, states: Use observations of the sun, moon, and stars to describe patterns that can be predicted. They can keep the moon or sun journals to track the movement of the sun and moon in the sky and learn the basics of moon phases and how there is a pattern to the phases. Fifth graders expand on the work of this idea to meet standard 5-ESS1-2; represent data in graphical displays to reveal

patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. They also begin to learn about the distance of the sun and stars from Earth and how their brightness is partially dependent upon that distance. Mystery Science has a fantastic lesson about the distance of the Sun and planets from each other determines how much light reaches each planet. Students explore which fictitious plants would be able to grow in each planet zone based on the amount of light that reaches them.

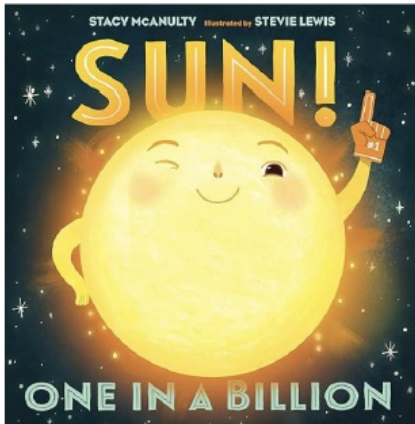
Third graders take weather mapping to a new level when they learn about typical weather conditions in each season and how those are cyclical (3-EES2-1). It is also an opportunity for teachers to introduce the effects of climate change on what we have known as our typical weather patterns. They also begin to learn about climates in other parts of the world, laying the groundwork for discussions about how we can all work together to slow down climate change as weather patterns are changing world-wide. An example of this would be to examine the recent uptick in severity of hurricanes. Students could investigate how there are more major hurricanes that seem to be developing more quickly and cause more damage. Students could research the hurricanes (and other natural disasters that are affected by weather) to determine how weather patterns are changing over time.

Full listing of authors and contacts can be found at the end of this article.



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I use a wonderful series of children's literature that helps to share some background information about the Moon and Sun with children. *Moon! Earth's best friend* and *Sun! One in a billion* both authored by Stacy McAulty, give a child friendly glimpse into how scientists think they were created, what understandings we have about both planetary bodies, and how we interact with and need both of them! These books are wonderful for use at any grade level through fifth grade, as teachers can keep returning to them over the grade levels to revisit ideas as students understand more concepts.

Eclipse Resources

There are so many activities to teach elementary children about eclipses and although they may not fully understand what is happening during an eclipse, over time, they can put all their experiences and learning together. HASTI has created a page on our website where we are curating eclipse activities that have been vetted for accuracy from science teachers across the state. Check back often as we are constantly adding new resources. [HASTI Eclipse page](#)

Here are a few of my favorite solar eclipse activities that are appropriate for elementary students:

Generation Genius helps you create a simple model to demonstrate solar and lunar eclipses for children. Using a meter stick, some binder clips, toothpicks, and playdough, teachers and students can explore how the sun, moon and earth interact during a solar or lunar eclipse. A full lesson plan with video is included on the website.



Scholastic compiled a list of activities for the 2017 eclipse that are still relevant today. This list includes activities that can be done before or after an eclipse to help explain the phenomena that is happening.

Finally, the **NASA Jet Propulsion Laboratory** has created a huge list of activities, videos, and scenarios that help teachers and students better understand solar and lunar eclipses. In 2017 I used many of the K-5 activities and adapted them for different grade levels and they helped my students understand so much more. In addition, many of the activities tie into math standards, so there is practical application of math concepts as well!

Resources

- Baratta-Lorton, M., & Baratta-Lorton, B. (2011). [Math Their Way Summary Newsletter](#). Center for Innovation in Education. (click on *Blackline Masters to download*)
- Mystery Science. (2023). [Could there be life on other planets?](#)
- McAulty S. & Lewis S. (2019). [Moon!: Earth's best friend](#). (First Grade). Henry Holt and Company.
- McAulty S. & Lewis S. (2018). [Sun!: One in a billion](#). (First Grade). Henry Holt and Company.
- Generation Genius. (2023). [Solar eclipse model DIY](#).
- Heinecke, L. (2017, August 12). [7 activities to get kids excited for the solar eclipse](#). Scholastic.
- NASA/JLP-Caltech (2023). [STEM lessons for educators](#).
- HASTI. (2023). [Total solar eclipse](#).

Author

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