

CAP Solar Eclipse Classroom Astronomy Educator Guide

On April 8, 2024 a solar eclipse will be crossing North America. To take advantage of this unique astronomic event, NASA has invited members of the public to help collect eclipse data.

To help as many students as possible have the opportunity to become solar eclipse citizen scientists, the Civil Air Patrol created this classroom activity that supports the GLOBE Eclipse project. The scientific measurements that teachers and their students make and submit will become part of a NASA dataset.



Mission Materials:

- CAP Solar Eclipse Classroom Astronomy Educator Guide
- Smartphone or Tablet loaded with the GLOBE Observer App
- Solar Eclipse Astronomy Student Data Books
- Thermometer (*with decimals*)
- Solar Glasses (*or other tool of safely observing the eclipse such as a pinhole projector*)
- Optional: Solar Eclipse Astronomy Parent Guide

Before the Eclipse:

To be ready for the Solar Eclipse, tackle the following steps at least 72 hours before April 8.

- **Register as a CAP Solar Eclipse Classroom** at <http://tinyurl.com/CAP-Eclipse-Classroom>
- **Gather Mission Materials** (*aka print out data books, locate a thermometer, download the GLOBE Observer App from <https://observer.globe.gov/about/get-the-app>, etc.*)
- **Complete the GLOBE Eclipse Training.** This training is located in the GLOBE Observer App, will take less than 15 minutes to complete, and will be available March 18th.
- **Look up the local times for the Start of the Eclipse, Solar Eclipse Maximum, and the End of the Eclipse** using this link <https://eclipsesoundscapes.org/eclipse-lookup-tool/>
- **Provide Students with a Solar Eclipse Briefing.** Registered CAP Solar Eclipse Classrooms will have the option to download briefing slides, access a video, or request a Civil Air Patrol volunteer to provide an in person or virtual eclipse briefing for their class/school.

Astronomy Educator Guide Cont.

During the Eclipse:

- **Break students into groups of 3 to 5 students.**
- **Pass out the Solar Eclipse Astronomy Student Data Books.**
- **At the Beginning of the Eclipse** (*referred to as 1st Contact*) - Have the students make their first direct and indirect observations in their data books.
- **1 Hour Before Solar Eclipse Maximum** - Have students make their second direct and indirect observations. Begin logging air temperature measurements in student data books and the GLOBE Observer App every 10 minutes.
- **30 Minutes Before Solar Eclipse Maximum** - Have students make their third direct and indirect observations. Begin logging air temperature measurements in student data books and the GLOBE Observer App every 5 minutes.
- **Solar Eclipse Maximum** - Give students time to experience the peak of the solar eclipse at your location. Then have them make their fourth direct and indirect observations in their data book. Continue to log air temperature measurements every 5 minutes.
- **30 Minutes After Solar Eclipse Maximum** - Have students make their fifth direct and indirect observations. Log air temperatures measurements in student data books and the GLOBE Observer App every 10 minutes.
- **1 Hour After Solar Eclipse Maximum** - Have students make their sixth direct and indirect observations. Stop logging air temperatures.
- **At the End of the Solar Eclipse** (*referred to as 4th Contact*) - Have students make their final solar eclipse observations in their student data books.

After The Eclipse:

- **Graph and Discuss Your Results.** After the eclipse work together as a class to process the data you collected and discuss any trends you noticed.
- **Submit Your Data.** Make sure to upload any data that your class collected via the GLOBE Observer app to NASA. If for any reason the App does not work the day of the Eclipse, track your temperature readings on paper. We have a backup method to collect the data.
- **Request A Citizen Science Certificate For Your Classroom.** Within 24 hours of the end of the Eclipse, CAP Solar Eclipse Classroom educators will receive a survey. Complete the 5-minute survey to receive an official Solar Eclipse Citizen Science Certificate for your classroom.
- **Watch For The Results.** In the coming months, we will be working with the GLOBE Observer Team to share the discoveries made during the 2024 Solar Eclipse with your classroom.
- **Find Your Classroom's Next Aerospace Education Adventure at:**

<https://www.gocivilairpatrol.com/programs/aerospace-education>