



Name: _____

Class: _____

Solar Eclipse 2024 Data Story Guided Exploration

In the Solar Eclipse 2024 Data Story, you can view what the April 8 eclipse will look like from any location. Speed up or slow down time and watch what happens as the Moon moves in front of the Sun. Catch the ethereal glow of the Sun's corona during totality, and learn why we do not usually see the corona. See what percent of the Sun will be eclipsed where you live.

Explore historical cloud cover data across the US. Where has it typically been cloudy or clear over the last 20 years? Can this data help you decide where to travel to on April 8, 2024?

Access the app at: <https://projects.cosmicds.cfa.harvard.edu/solar-eclipse-2024/>

(For the best experience, we recommend running the Data Story in a Chrome browser.)

The view from Nazas, Mexico

The Solar Eclipse 2024 Data Story begins in Nazas, Mexico. Explore the view of the eclipse from here.

1. Describe what is happening as time moves forward.
2. For Nazas, Mexico, at what time does the Moon first make "contact" and start moving in front of the Sun?
3. Describe what you see when the Sun is 100% eclipsed by the Moon.
4. Roughly, for how much time is the Sun 100% eclipsed by the Moon?
 - a. About 4 seconds
 - b. About 4 minutes
 - c. About 4 hours
 - d. The whole day

5. Roughly, how long does the eclipse last, from when the Moon first appears to touch the Sun until it moves past the Sun?
 - a. About 3 seconds
 - b. About 3 minutes
 - c. About 3 hours
 - d. The whole day

The view from your location

Select your location from the map. Explore what the April 8, 2024 eclipse will look like there.

6. If the eclipse will be visible from your location, at what time will the eclipse begin?

7. What is the maximum eclipse percentage that will be seen at your location? (Hint: You can manually move the yellow time slider back and forth and look at the "Percent Eclipsed" value at different times.)

8. How does the entire duration of the eclipse (from when the Moon first appears to touch the Sun until it moves past the Sun) at your location compare with Nazas, Mexico?
 - a. The duration of the eclipse is shorter at my location compared with Nazas, Mexico.
 - b. The duration of the eclipse is longer at my location compared with Nazas, Mexico.
 - c. The duration of the eclipse is the same at my location compared with Nazas, Mexico.

How far are you from the path of totality?

The red and gray path shown on the map shows the parts of North America that will experience a total solar eclipse on April 8, 2024. (Most of the rest of North America will see a partial solar eclipse).

9. Using the map in the Data Story, identify a town and state within the path of totality that you think is the closest to your location. (If you are lucky enough to be in the path of totality, you can use your own town!) Write the town and state name here.

10. If you wanted to go to the town and state that you identified within the path of totality, how long would it take for you to get there? (You can estimate the driving time using a program like Google maps or look up airline flight times). Note that there will likely be more traffic on the day of the eclipse!

What is the cloud cover there?

Click on the button with the Sun and Cloud icon (in the top panel with the map) to explore historical cloud cover data from the last ~20 years around April 8th. If you don't see the top panel with the map, click on the "Map & Weather" button at the top left of the screen.

For locations across the U.S., most of Mexico, and some of Canada, the median historical cloud cover is displayed. This value tells you that for half of the years, the cloud cover value was higher than the median, and for the other half, the cloud cover value was lower than the median.

11. What is the median historical cloud cover at the location within the path of totality that you chose in the previous section?
12. If you could travel anywhere to view the eclipse on April 8, 2024, where would you go and why?

More on eclipses

Click on the button with the open book icon (in the top panel with the map) to learn more about solar eclipses.

13. Share something new that you learned from this activity!