**Student Worksheet: All eyes on the sun**

**Directions**: Read the online *Science News* article “[Why the 2024 total solar eclipse will be such a big deal](https://www.sciencenews.org/article/total-solar-eclipse-sun-science-viewing-2024)” and answer the following questions as directed by your teacher.

**Before Reading**1. If you were able to view a solar eclipse from Earth, describe what you might see. If you aren't sure, do a quick internet search or watch this [short video](https://www.youtube.com/watch?v=cxrLRbkOwKs). A solar eclipse occurs due to a particular alignment of the sun, Earth, and moon. Based on what you've described, draw a sketch showing the sun, Earth, and moon in an orientation that would result in an eclipse.

2. The term "citizen science" describes research that uses non-scientists' participation to collect data. What might be the benefits of having the public participate in eclipse research? Explain your answer.

**During Reading**

1. Describe the three reasons astronomers predict April’s solar eclipse to put on a “livelier show” than normal.

2. What is the “path of totality?” How long is the April eclipse predicted to last if watching from the path of totality?

3. About 32 million people live in the path of totality for the April 8, 2024 eclipse, but why might many more people be able to see this total eclipse?

4. What is a coronal mass ejection?

5. Why is the April eclipse predicted to have a higher-than-normal chance of producing a coronal mass ejection?

6. Astronomers hope for a coronal mass ejection during the eclipse. What opportunity might such an event offer regarding measurements made by the two observing satellites?

7. What types of particles do the Super Dual Auroral Radar Network radars detect? What causes these particles to form?

8. What two satellites will be able to observe the sun from the side during the eclipse?

9. Besides learning about the sun, what else might the instruments monitoring the eclipse detect?

10. How do the unique conditions of the solar eclipse allow for such discoveries?

**After Reading**1. Based on your reading, describe two reasons scientists want to know more about coronal mass ejections. Pick one of these to explain further. How might the knowledge gained from this research type help address such a problem? Describe one action that people may take using such information.

2. Describe a specific type of data mentioned in this article that can measure something about an eclipse event. What equipment did scientists require to make such measurements? Explain precisely what scientists can learn from such measurements.