

Name \_\_\_\_\_

Period \_\_\_\_\_

### Video – The Universe: Secrets of the Sun

1. The sun is classified as a \_\_\_\_\_.
2. At one million miles across, the sun is so large that \_\_\_\_\_ Earths could fit inside it.
3. The surface temperature of the sun is \_\_\_\_\_ degrees Fahrenheit.
4. The core is \_\_\_\_\_ million degrees Fahrenheit and is \_\_\_\_\_ times as dense as lead.
5. Each second, the sun loses \_\_\_\_\_ tons of mass as it converts it to energy.
6. The radiative zone is 185,000 thick and is \_\_\_\_\_ dense.
7. Explain what is meant by a photon taking a “random walk”.
  
8. The convective zone is 130,000 miles thick and it takes light \_\_\_\_\_ days to travel through this zone before it reaches the sun’s surface.
9. State the evidence, found on Earth, that supports the idea that the solar system resulted from the remains of a supernova explosion.
  
10. The sun contains \_\_\_\_\_ % of the solar system’s mass.
11. Magnetism is responsible for the sun’s violent activity. Explain why the sun’s magnetic field lines become twisted while the Earth’s do not.
  
12. Explain how a sunspot forms.

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13. Explain how a solar flare forms.

14. Explain what a sun quake is, and how it forms. (for a great sequence of images, go to:

[http://apod.nasa.gov/apod/image/9806/sunquake\\_soho\\_big.jpg](http://apod.nasa.gov/apod/image/9806/sunquake_soho_big.jpg))

15. Explain what a coronal mass ejection (CME) is and how they can affect Earth.

16. How did Mars lose its atmosphere?

17. In the 1980s, Air Force One, with President Reagan onboard, lost communications with the ground. What was the cause of this?

18. The green and red colors in an aurora are the result of \_\_\_\_\_ atoms.

19. The pink, blue, and violet colors in an aurora are the result of \_\_\_\_\_ atoms.

20. Explain what the corona of the sun is.

21. The corona should be much cooler than it is based on the fact that it is half a million miles from the sun's core. What mechanism heats it to millions of degrees?

22. When can the corona be clearly seen?

When the sun finally reaches the red giant stage, it will expand out to the orbit of which planet?