

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Sun and Sunlight: Study Guide for Test

Copy of Class Notes at <http://feldmannscience.weebly.com>

### Monday 9/15 – How Did the Solar System Form?

1. The \_\_\_\_\_ describes the formation of our Solar System (sun and planets) from a nebula around 4.6 billion years ago.
2. What is a nebula?
3. Summarize the five steps in how our solar system formed:  
Step 1.  
  
Step 2.  
  
Step 3.  
  
Step 4.  
  
Step 5.
4. In the formation of our solar system, which came first: a planetesimal or a planet? Why?

### Tuesday 9/16 – The Sun: The Only Star in Our Solar System

5. Describe the Law of Conservation of Energy and give an example of the law.
6. An atom is made-up of \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_  
\_\_\_\_\_. The center of the atom is called a nucleus and contains only \_\_\_\_\_  
and \_\_\_\_\_.
7. Nuclear energy holds the nucleus together. What are the two ways to release this energy?

What is the difference between these two ways?

8. A star's primary source of energy is \_\_\_\_\_ which is combining two lightweight nuclei into a \_\_\_\_\_ nucleus.

9. Draw a diagram to illustrate the process of how energy is made inside the sun. Include the terms hydrogen, helium, heat, light, high temperature and high pressure.

10. Our sun is a star. Define "star"

11. Describe the composition of the sun.

### Wednesday 9/17 – Electromagnetic Spectrum

12. Light can be thought of as a wave. Draw and label an example of light with a short wavelength and an example of light with a long wavelength.

13. What is the Greek symbol for wavelength? (Draw it only, you don't have to name it)

14. Label the different types of light on the electromagnetic spectrum:

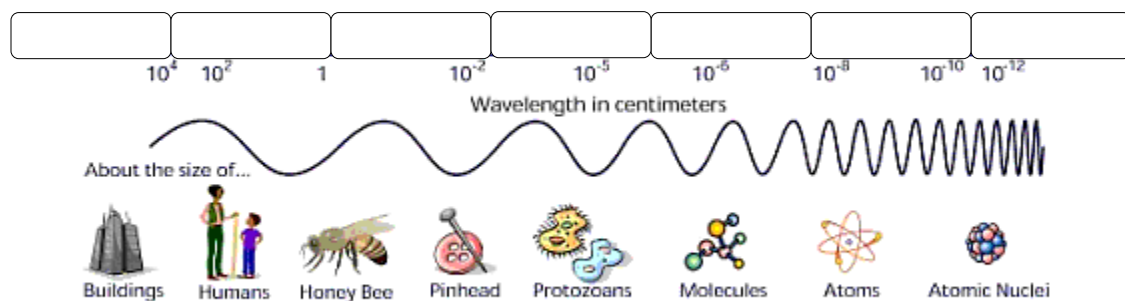


Image courtesy of NASA

15. How fast do light waves travel (in kilometers/hour)?

16. Do long wavelengths or short wavelengths contain more energy?

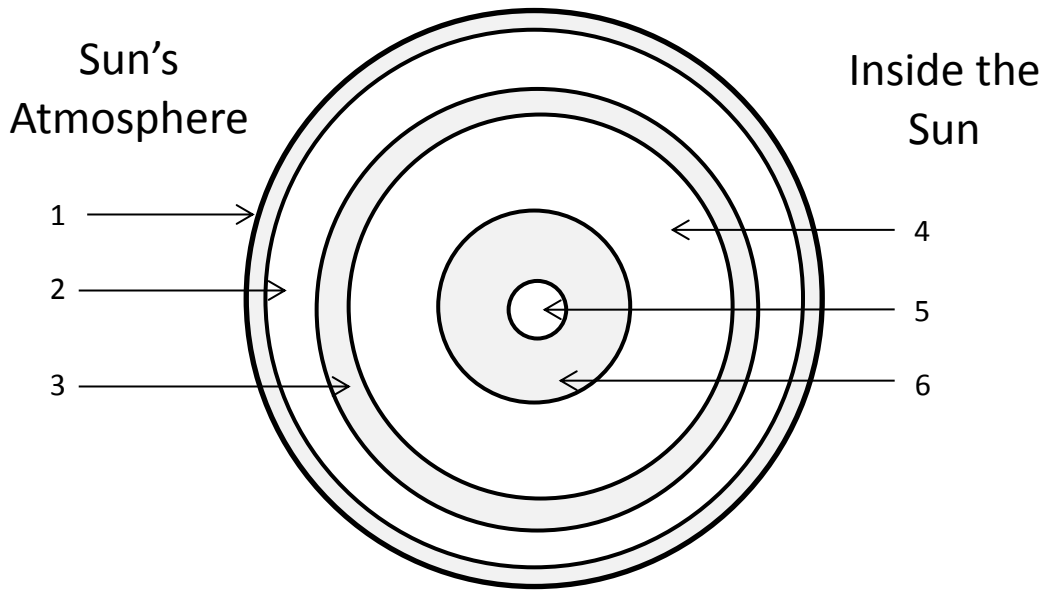
17. How long does it take light to travel from the surface of the Sun to Earth?

18. Not all \_\_\_\_\_ emitted from the sun reaches the surface of the Earth. This is because

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**9/18 - Sun's Atmosphere and Inner Layers Project**



19. Using the diagram above, name the area of the Sun labeled by each number.

Label #1:

Label #4:

Label #2:

Label #5:

Label #3:

Label #6:

20. Which part of the sun has the highest temperature?

21. Describe how energy moves through the radiative zone.

22. Describe how energy moves through the convective zone.

## Monday 9/22 - Earth's Magnetic Field

23. What is the relationship between the geographic North Pole and Earth's magnetic field?
24. What is the current hypothesis for how the Earth's magnetic field is created?
25. \_\_\_\_\_ protects the planet from harmful effects of radiation, especially cosmic radiation.
26. List the two lines of defense for the Earth from radiation.
- 1<sup>st</sup> Line of Defense:
- 2<sup>nd</sup> Line of Defense:
27. How has the Earth's Magnetic Field's strength been changing in the past one hundred years?

## Tuesday 9/23 – Photosynthesis

28. What are the five main components to photosynthesis?

\_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ → \_\_\_\_\_ + \_\_\_\_\_

29. \_\_\_\_\_ energy is transformed to \_\_\_\_\_ energy through photosynthesis.
30. Sunlight is known as solar energy; whereas, glucose is referred to as \_\_\_\_\_ energy. More commonly, glucose is referred to as a sugar.

### \*REVIEW QUESTIONS\*

31. Determine Earth's cosmic address by ordering the following terms from smallest to largest: Local Group, Sun, Solar System, Earth, Universe Milky Way Galaxy.
32. Summarize Kepler's three laws of planetary motion:
- 1<sup>st</sup> Law:
- 2<sup>nd</sup> Law:
- 3<sup>rd</sup> Law: