

**The Sun, Bill Nye the Science Guy** Name \_\_\_\_\_ pd \_\_\_\_\_

**Date:** \_\_\_\_\_

**BEFORE** viewing the tape, read through the questions below.

- \_\_\_\_\_ 1. How many earths would it take to fill up the sun?
- \_\_\_\_\_ 2. How many earths would it take to cover the diameter of the sun?
- \_\_\_\_\_ 3. What is the temperature of the sun at its core?
- \_\_\_\_\_ 4. Where does all the energy on the earth originally come from?
- \_\_\_\_\_ 5. What is oil made from?
6. a. Explain how to make a thermometer from a straw, film canister, colored water, and some clay.

b. Why doesn't his canister thermometer work? (Hint: He explains it later in the video.)

\_\_\_\_\_ 7. Electrical devices that make energy from sunlight are called \_\_\_\_\_.

8. Why do solar cells move?

\_\_\_\_\_ 9. *Photovoltaic cells* is another name for \_\_\_\_\_.

10. Why will there never likely be a space mission to the sun?

11. Why not go at night?

\_\_\_\_\_

\_\_\_\_\_ 12. When the moon blocks the light from the sun, the shadow cast by the moon is called a \_\_\_\_\_.

13. What is a *pinhole viewer*?

14. How to you make it? Why do you need it?

\_\_\_\_\_ 15. Road flares reach a temperature of \_\_\_\_\_.

\_\_\_\_\_ 16. Solar flares reach a temperature of \_\_\_\_\_.

\_\_\_\_\_ 17. The sun is actually just a \_\_\_\_\_.

\_\_\_\_\_ 18. The *Solar Protection Factor* of sunscreen is abbreviated \_\_\_\_\_.

\_\_\_\_\_ 19. If a sunscreen is rated SPF 15 that means it gives you \_\_\_\_\_ times the natural protection of your skin.

20. a. What is a solar oven?

b. What materials can you use to build one?

c. How hot can it get? \_\_\_\_\_

\_\_\_\_\_ 21. Does all the energy given off by the sun hit the earth?

22. Make a sketch below of the sun and the earth. Show how much of the energy gets to the earth and what happens to the rest of the energy.

\_\_\_\_\_ 23. The source of all the energy for life on the earth is the \_\_\_\_\_.

\_\_\_\_\_ 24. Cooler spots on the surface of the sun are called \_\_\_\_\_.

25. How do solar panels work? How could you do an experiment to show how they work with bowls of water, food color, and a piece of glass? Put clear water in one bowl, colored water in bowl #2 and colored water in bowl #3 under a piece of glass. Explain what would happen to the temperature of the water. Make a sketch in the space below: