Earth Science Strand 1

Test Review

Name _____ **Period** _____

1. DRAW AND LABEL the Electromagnetic Spectrum in order from LONGEST wavelength to SHORTEST.

2. Does RED visible light or BLUE visible have a longer wavelength? Why?

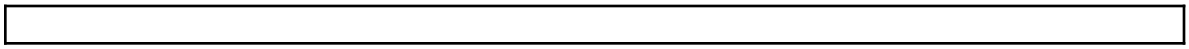
3. In your own words, explain RedShift AND BlueShift.

4. Here is a simplified spectrum of hydrogen on Earth.



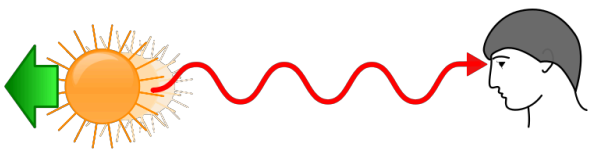
Red Blue

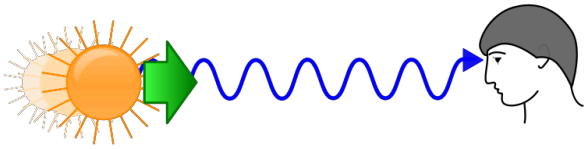
Draw where the lines might be on this hydrogen spectrum if it has been Red Shifted.



Red Blue

5: Label each of these pictures as red shift or blue shift.





6. How do scientists use emission spectra to determine what distant objects in space are made of?

7. How do scientists use emission spectra to determine which direction distant objects in space are moving?

8. DRAW and LABEL a transverse wave (crest, trough, wavelength, amplitude):

9. Explain what wave **frequency** is.

10. Explain the Doppler Effect and how the frequency of a wave appears to change due to motion.

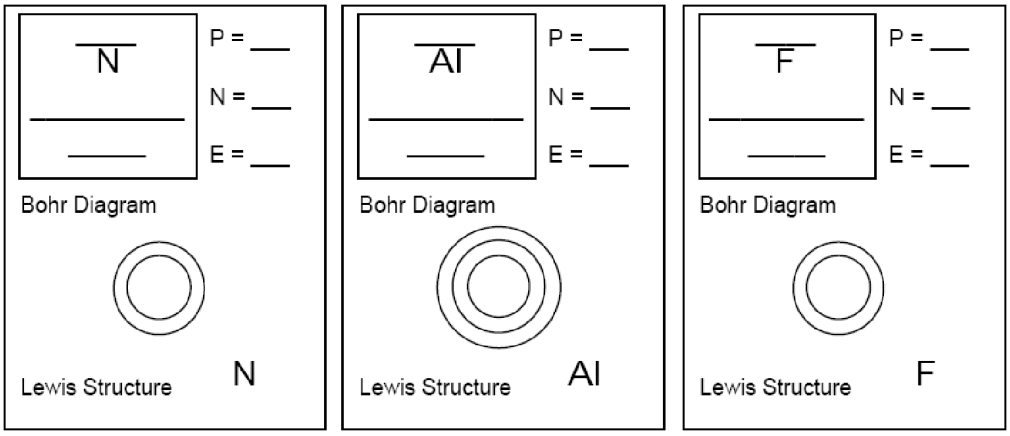
11. What is Cosmic Microwave Background Radiation and how does it support the Big Bang theory?

12. How does light from stars support the Big Bang Theory?

13. According to scientific theory, what has been happening to matter in the universe since the Big Bang occurred?

14. Most human cultures have explanations for the origin of the universe. How is the scientific explanation different?

15. Complete the following:



16. How are the elements formed in the big bang different from the elements formed through nuclear fusion in stars?

17. What is nuclear fusion?

18. What is released during the process of nuclear fusion? What is produced?

19. Why do scientists claim that we are made of stardust?

20. What is a nebula?

21. What force is responsible for the "clumping" in the nebula that forms a star?

22. What type of stars produce the heaviest elements found on Earth?

23. What is a supernova?

24. What type of elements would you expect to find in a young, small star? List 3 examples of elements:

25. What type of elements would you expect to find in an older, massive star? List 3 examples of elements:

26. Which has more mass (or is heavier)? Na (Sodium) or C (Carbon)?

27. What are the two forces responsible for keeping planets in orbit around their star?

1 H	2 He	3 Li	4 Be	5 B	6 C	7 N	8 O	9 F	10 Ne

Use the table two answer the next two questions:

28. What will the fusion of two Li (Lithium) atoms produce?

29. What will the fusion of one C (Carbon) and one H (Hydrogen) produce?

30. **T or F:** A star farthest from the Earth will be traveling with the greatest speed, therefore having the greatest red shift. **Explain your answer**.

31. What is solar wind and how did it affect the materials our planets are formed from?

32. Put all of the theories we've learned together into one drawing. Draw and label the steps of **the Big Bang**, leading to the formation of a Solar System from **the Nebular Theory**, and include **the life cycle of our sun**.