



Big Bang Webquest

Name _____ Date _____ Pd. 1 2 3 4

Task 1- Watch this video: [Big Bang Crash Course](#)

[Helpful Link](#)

1. What did observations between 1912 and 1917 show? _____

2. What did Lemaitres propose the universe was doing? _____

3. What important discovery did Hubble and his assistant discover about galaxies? _____

4. What does that mean the universe is doing? _____

5. What does that mean the universe use to be? _____

6. By observing very distant objects, what can scientists do? _____

7. What was discovered in 1965? _____

8. Does the universe have a center? _____

9. How old do we think the universe is? _____

Task 2- Use the following link to answer the questions below [Story of the Universe](#)

10. What is The Big Bang Theory? And don't say "A TV show on CBS."²

11. The Big Bang happened about _____ years ago.

12. _____, _____, and _____ all began with the Big Bang.

13. What happened following the Big Bang to allow protons and neutrons to come together to form atoms and eventually atoms to come together to form different elements? _____

Task 3- Use the following link to answer the questions below [Universe 101](#)

14. There are 3 main pieces of evidence that support The Big Bang Theory:

- a) Evidence of the _____ of the universe. In the year _____, Edwin Hubble observed that galaxies were generally receding from us provided the first clue that the Big Bang theory might be right
- b) The abundance of _____ (H, He, Li) in the universe is almost exactly as what The Big Bang predicts. Elements were first fused within the _____ after the Big Bang
- c) _____ radiation is the remnant heat leftover from the Big Bang.

Task 4- Use the following link to answer the questions below [Universe 101 "Big Bang Tests"](#)

Part 1: Expansion of the Universe

- 15. Why did Einstein develop the “cosmological constant”? _____

- 16. Which theory was the natural beginning of a Big Bang theory? _____

- 17. Who showed that the universe was indeed expanding? _____
- 18. According to the expansion law do the galaxies expand away from each other equally? Explain.

Part 2: The Abundance of Light Elements

- 19. What is nucleosynthesis? _____

- 20. What is Big Bang nucleosynthesis? _____

- 21. What was the universe like immediately after the Big Bang started? _____

- 22. How much of the universe’s ordinary matter is thought to be helium? _____
- 23. Does Big Bang theory support this number? _____
- 24. Where do elements heavier than lithium come from? _____

- 25. Where do elements heavier than iron come from? _____

Part 3: Cosmic Microwave Background Radiation

26. What is CMB? Explain. _____

27. Who predicted the existence of CMB? _____
28. Who discovered CMB? _____
29. Describe the CMB as it exists today. _____

30. How old is the universe thought to be? (Also [Age of the Universe](#)) _____
31. What event was thought to occur about 400,000 years after the Big Bang? _____

32. What is the most striking characteristic of the CMB? _____

Task5- Use the following link to answer the questions below [Universe 101 "Beyond the Big Bang"](#)

Part 1: Structure

33. How do most cosmologists believe galaxies today grew? _____

34. When was the universe one thousandth its present size? _____

35. What are 2 popular ideas of what cause fluctuations? _____

Part 2: Fluctuations

36. What can offer great insight into the origin and evolution of the universe? _____

Part 3: Inflation

37. What is the inflation theory? _____

38. What are the three problems with the Big Bang Theory? _____

39. How does inflation solve the three problems with the Big Bang Theory? _____

Task 6- Use the following link to answer the questions below [Ask an Astronomer](#)

40. Can we look back into time and see the beginning of the universe? _____

Task 8- Use the following link to answer the questions below [BBC Article](#)

41. What are the current theories on the end of the universe? Will it keep on expanding; or, will it slow down and start contracting (the « Big Crunch »)

