

Video Worksheet

The Universe: Life and Death of a Star

Name _____

Per _____ Date _____

1. What are the pillars made of in the “Pillars of Creation?”
2. What is the key component (element) found in stars?
3. What is the most important force in astronomy?
4. What is the early phase of the star called once the gas and dust begin to coalesce into a sphere?
5. What energy powers the star throughout its life?
6. In what state do stars spend most of their life cycle? (Our sun is currently in this phase), where the star is in gravitational equilibrium?
7. What characteristic indicates how hot a star is?
8. Small, cool red stars are called _____?
9. What are the most common types of stars in our universe?
10. This type of star has a surface temperature that is very hot (45,000°F) and is up to 20 times the mass of the sun. What color is it and what is it called?
11. Which star lives the longest, the star with the higher mass or the star with the lower mass?
12. How long will our Sun live?
13. What will happen to our star once all of the hydrogen has been fused?
14. Once all the hydrogen is gone, the star starts to collapse. If it collapses enough, what fuel will now be used? What color will it burn?
15. What element will it try to form in this stage?
16. When this gas is burned, what will happen to the surface of this type of star?
17. When the star uses up its helium or other elements, it collapses into a _____ .
18. How big is this type of star? (The answer to #17.)

19. When a white dwarf gathers material from its companion star, what will eventually happen?
20. What type of supernova is this called? _____
21. What causes a Type II supernova? How big is the star that causes this type supernova compared to our sun?
22. What is the result of the collapse of the iron core?
23. From where did the elements in our bodies originate?
24. Why are we sometimes called “stardust”?
25. Once electrons are combined with protons to produce neutrons, what kind of star is formed?
26. In addition to being so small and compact, about _____ to _____ times our sun, the neutrons cannot hold up and it is crushed into a _____.
27. With a high rate of spin and a massive magnetic field, a neutron star will emit a beam of _____. It can then be known as a _____.
28. When a star that is so massive, about _____ to _____ times our sun, the neutrons cannot hold up and it is crushed into a _____.
29. Astronomers believe some very massive stars die and do not leave any remnant behind. What do these super large stars produce?
30. What happens when 2 neutron stars collide? What is produced?
31. What is the chance of a collision between the sun and another star?
32. Where are stars more likely to collide?
33. What do they call the blue stars found in old globular clusters? _____
34. Where does Joshua Barnes think they come from?
35. At what stage of a star’s life are black holes, white dwarfs, etc.?
36. What is a brown dwarf?
37. What do scientists think a brown dwarf may look like?