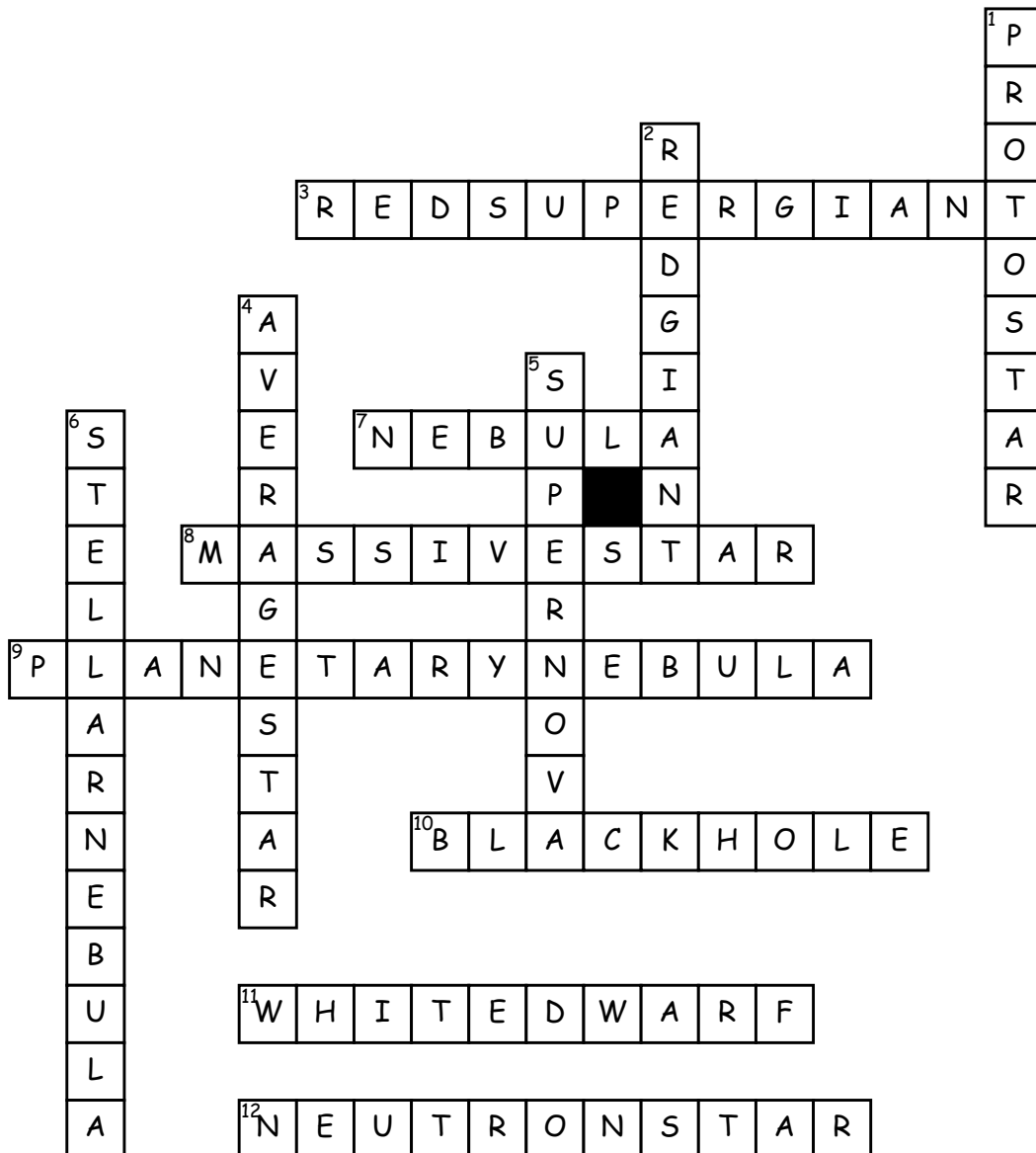


Name: \_\_\_\_\_

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# Life cycle of a star



## Across

3. an aging giant star that has consumed its core's supply of hydrogen fuel. Helium has accumulated in the core, and hydrogen is now undergoing nuclear fusion in the outer shells. These shells then expand, and the now cooler star takes on a red color. They are the largest known stars.

7. a cloud of gas and dust in outer space, visible in the night sky either as an indistinct bright patch or as a dark silhouette against other luminous matter.

8. When a nebula collects enough mass, it begins to collapse under its own gravity. The internal pressure created by this collapse is enough to trigger fusion of hydrogen deep in its core.

9. a ring-shaped nebula formed by an expanding shell of gas around an aging star.

10. a region of space having a gravitational field so intense that no matter or radiation can escape.

11. is what stars like the Sun become after they have exhausted their nuclear fuel. Near the end of its nuclear burning stage, this type of star expels most of its outer material, creating a planetary nebula.

12. are created when giant stars die in supernovas and their cores collapse, with the protons and electrons essentially melting into each other to form neutrons.

## Down

1. a contracting mass of gas that represents an early stage in the formation of a star, before nucleosynthesis has begun.

2. a luminous giant star of low or intermediate mass (roughly 0.3-8 solar masses ( $M_{\odot}$ )) in a late phase of stellar evolution

4. a star with an initial mass of 0.5 to 8 times that of Earth's sun. It spends most of its time on the main sequence as an orange, yellow, or blue white dwarf star.

5. an astronomical event that occurs during the last stellar evolutionary stages of a massive star's life, whose dramatic and catastrophic destruction is marked by one final titanic explosion.

6. an interstellar cloud of dust, hydrogen, helium and other ionized gases.