z<https://map.gsfc.nasa.gov/universe/rel_stars.html>



<https://www.schoolsobservatory.org/learn/astro/stars/cycle>

Stellar Nebula: clouds of hydrogen, helium, space dust

Types of stars:

<https://www.physicsoftheuniverse.com/what-different-types-of-stars-are-there.html>

Supernovas:

Type I: star accumulates matter from a nearby neighbor until a runaway nuclear reaction ignites

Type II: star runs out of nuclear fuel and collapses under its own gravity (8-15 times the size of the sun)

Black Hole:

Stars much more massive than the sun (around 20 to 30 solar masses) might not explode as a supernova, astronomers think. Instead they collapse to form black holes.

<https://www.space.com/6638-supernova.html>

Neutron Star:

When stars four to eight times as massive as the sun explode in a violent supernova, their outer layers can blow off in an often-spectacular display, leaving behind a small, dense core that continues to collapse. Gravity presses the material in on itself so tightly that protons and electrons combine to make neutrons, yielding the name "neutron star."

20km diameter, g=2 billion times that of earth, single teaspoon would weigh a billion tons, can have as many rotations as 43,000 per minute

White dwarf:

After stars of low mass like our Sun; it will radiate out into a Red giant. AFter all energy is expended from this process. The star will collapse further into a star only a bit bigger than Earth, but half the mass of the Sun. The White dwarf keeps shape from the tension between the high gravity caused by the mass and the outer push of the compression of electrons. Surrounding the star will be a planetary nebula of compressed gas.

Black Dwarf: a

After a white dwarf dies the star will become a theoretical(universe not old enough for one to exist) star that produces no heat and light.

\*Note: galaxies don’t actually have a “life cycle” as the stars within them typically regenerate