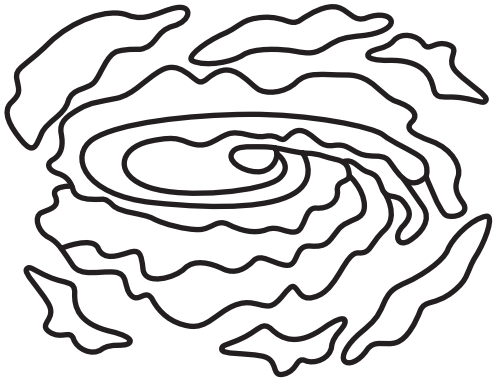
Star Life Cycle



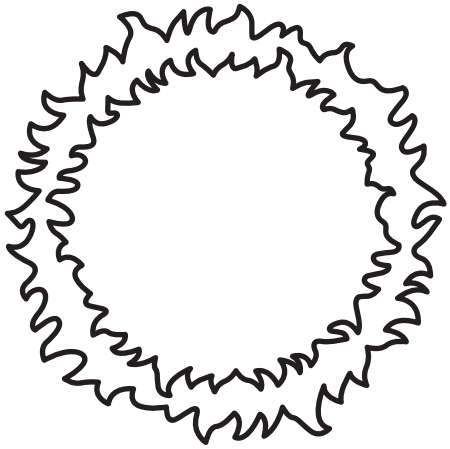
Birth (Nebula)

Imagine a giant space cloud called a nebula. This is like a stellar nursery where stars are born. Inside this cloud, there's a baby star forming. We call it a protostar.

Growing Up

(Main Sequence)

Our baby star is growing up and becoming a real star! It's now called a main sequence star. It's like the star's childhood. The star is happy and shining bright because it's turning hydrogen into helium through a process called nuclear fusion.



Teenage Years

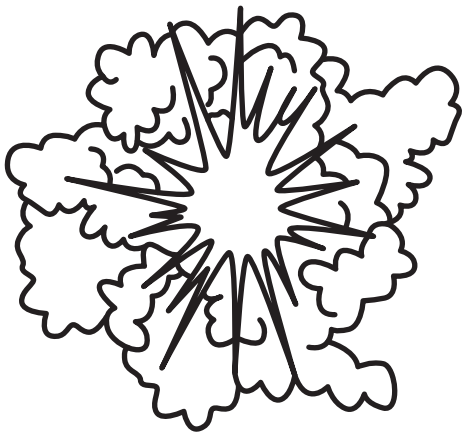
(Red Giant or Supergiant)

As the star gets older, it becomes a bit of a teenager. It starts to change and gets bigger. If it's a smaller star (like our Sun), it becomes a red giant. If it's a bigger star, it becomes a red supergiant.

Middle-Aged

(Helium Burning)

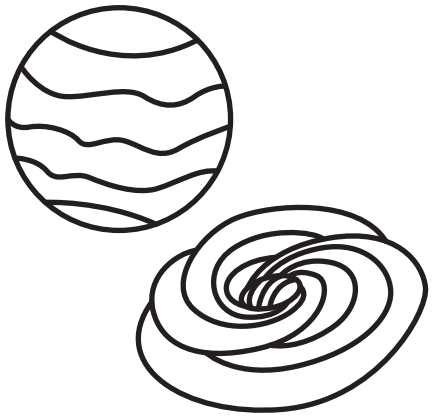
The star is now in its middle age. It's not a kid or a teenager anymore. It starts burning helium in its core. It's like the star is cooking up heavier elements, making the star even more interesting!



Grand Finale

(Planetary Nebula or Supernova)

When the star gets really old, it does something spectacular. If it's a smaller star, it blows off its outer layers, creating something pretty called a planetary nebula. If it's a bigger star, it goes out with a big bang in a supernova explosion!



Retirement

(White Dwarf, Neutron Star, or Black Hole)

After all the excitement, what's left of the star depends on its size. If it's a small or medium star, it becomes a white dwarf–a sort of retired star. If it's a bit bigger, it might become a neutron star, or if it's really big, it could turn into a mysterious black hole.