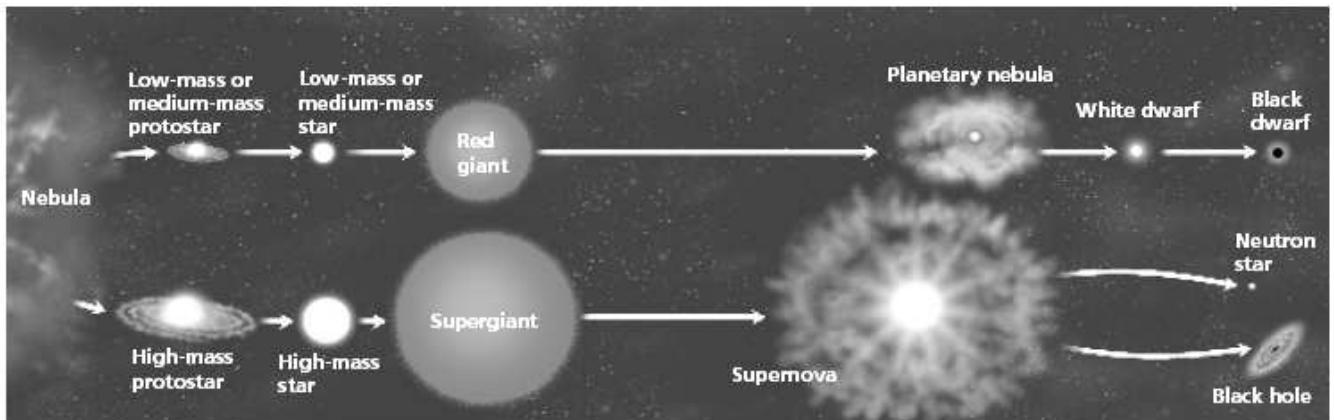


## Life Cycle of a Star

Text Reference: Pages 296-301.

**Learning Goal:** I can describe the life cycle of various types of stars.

All stars start as a \_\_\_\_\_. A \_\_\_\_\_ is a large cloud of gas and dust. Gravity can pull some of the gas and dust in a nebula together. The contracting cloud is then called a \_\_\_\_\_. A protostar is the earliest stage of a star's life. A star is born when the gas and dust from a nebula \_\_\_\_\_. Once a star has "turned on" it is known as a \_\_\_\_\_. When a main sequence star begins to run out of \_\_\_\_\_ fuel, the star becomes a \_\_\_\_\_ or a \_\_\_\_\_.



After a low or medium mass or star has become a red giant the outer parts grow bigger and drift into space, forming a cloud of gas called a planetary nebula. The blue-white hot core of the star that is left behind cools and becomes a \_\_\_\_\_. The white dwarf eventually runs out of fuel and dies as a \_\_\_\_\_.

After a high mass star becomes a red supergiant, it often will suddenly \_\_\_\_\_. The explosion is called a \_\_\_\_\_. After the star explodes, some of the materials from the star are left behind. This material may form a \_\_\_\_\_. The most massive stars become \_\_\_\_\_ when they die. The gravitational pull of the large amount of mass that remains is so strong that it pulls all nearby materials into its core. Eventually, the gravity becomes so strong that nothing can escape, not even light.

## Characteristics of Stars

There are many different types of stars, and by comparing a few of their characteristics, we can find out more about them.

### 1. Colour and Temperature

The colour of stars tells us something about their temperatures. Blue coloured stars are the hottest and red is the coolest. (See pg. 301)

### 2. Types of chemicals in the star (see pg. 282 and try Lab pg. 304)

Scientists use spectrosopes to look at stars. The spectrum of a star can tell us:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### 3. The brightness of the star

We compare the brightness of stars with one another too.

Apparent magnitude - \_\_\_\_\_  
\_\_\_\_\_

(E.g.: the Sun has a high apparent magnitude compared to Polaris).

Absolute magnitude - \_\_\_\_\_  
\_\_\_\_\_

(E.g.: the Sun has a relatively low absolute magnitude compared to most other stars).