

## Vocabulary: H-R Diagram



### Vocabulary

- Giant – a highly luminous, exceptionally massive *star*.
  - A giant star forms when a *main sequence* star runs out of hydrogen in its core, causing the core to shrink. The core begins to burn helium, which is hotter than burning hydrogen. This added heat causes the outside of the star to expand.
  - After a giant forms, its outer layers may expand and cool, causing the star to glow a bright red color. These giants are known as *red giants*.
- H-R diagram – a graphical plot showing the relationship between a star’s luminosity and its surface temperature.
  - H-R diagrams are used to classify stars and show how stars change over time.
- Luminosity – the brightness of an object that gives off light, such as a star.
  - To determine a star’s luminosity, astronomers compare a star’s apparent brightness in the night sky with how far away the star is from Earth.
- Main sequence – a star that is in a stable, middle stage of its development.
  - Over 90 percent of the stars in the known universe are main sequence stars.
  - The Sun is a main sequence star.
- Star – a celestial body composed of hot gases that radiate energy, including light and heat.
  - A star’s energy comes from *nuclear fusion*, a process in which two hydrogen atoms join to form a helium atom.
- Supergiant – a very bright star that is usually larger and more massive than a giant star.
- White dwarf – a small, dense, faint star.
  - White dwarfs form near the end of a star’s life cycle when the outer layers of a giant are shed, leaving a dense oxygen-carbon core behind.

