

# Earth Science 11

## Unit 1 – Earth and its Solar System

### Day 4 – Stars

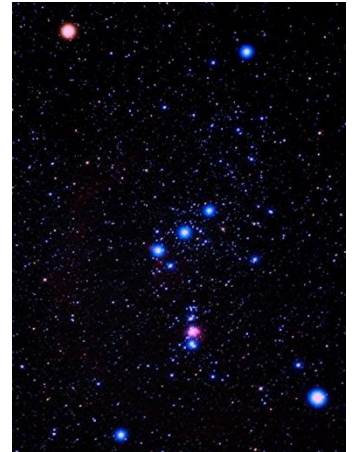
Name: Schaub

Date: \_\_\_\_\_

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The colour of a star is determined by its effective temperature.

- Red stars are cooler. (e.g. Betelgeuse – top left)
- Blue stars are hotter. Think about fire flame... not about your sink taps
- The in-between colours are yellow white turquoise (from coldest to hottest).

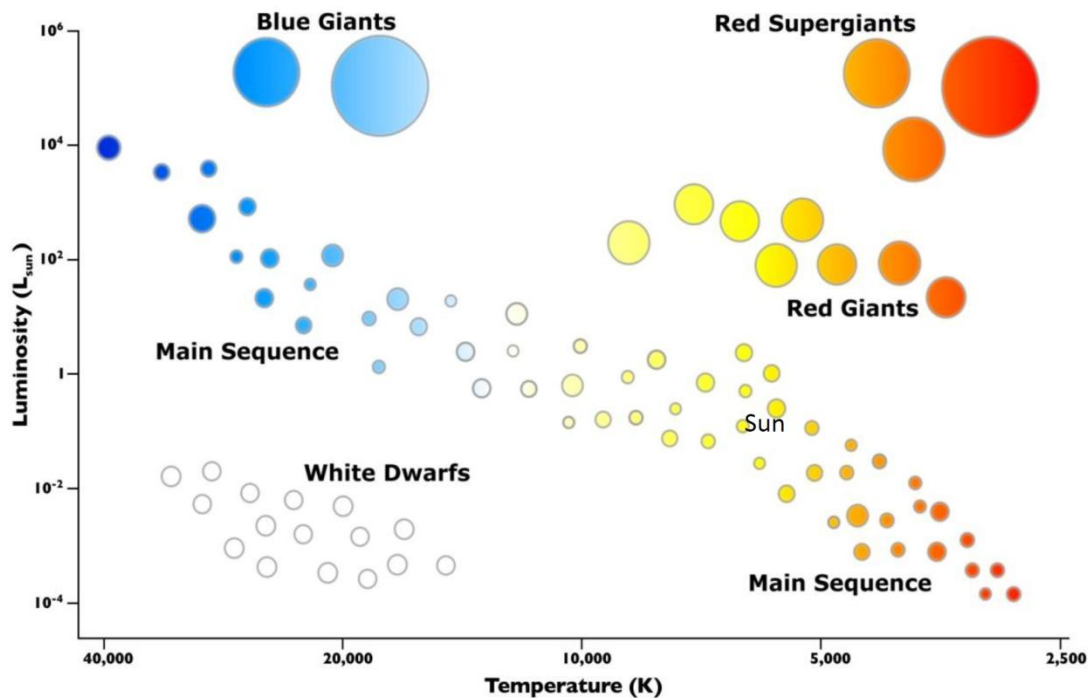


#### Understanding HR Diagrams

- *Luminosity, intrinsic brightness, and absolute magnitude* refer to how bright the star looks using different references.
- Apparent brightness refers to luminosity and distance from earth from where it's viewed.
- Our sun has a luminosity of 1<sub>Lo</sub> and all other stars are compared to that.
- Star temperatures are measured in kelvin.

luminosity->measure of radiated electromagnetic power

273 K – Water freezes; 373 K – Water boils; 0 K – atoms stop moving



Watch the YouTube video “Star Classification: Sixty Symbols” and answer these questions

1. What is the official classification for our Sun?
2. What is the current letter classification (from blue to red)? What is the mnemonic used to remember it? Add the letters to your HR diagram above (They show them on the video don't panic).

### Stars in our "neighbourhood":

- The nearest star system to ours is proxima centauri at a distance of 40 208 000 000 000 km.
- It consists of three stars:
  1. Alpha Centauri A
  2. Alpha Centauri B
  3. Proxima Centauri
- The first two are main sequence stars that orbit each other. They appear to the naked eye as one star.
- The third is a red dwarf that *probably* orbits the other two.
- Alpha Centauri B is orbited by its own planet.