

1. Life cycle of a star

1. **Cloud of gas (nebula):** Begins to collapse due to gravity and heat up

2. **Protostar:** formed as fusion begins

3. **Main sequence star:** Stable star when gravity is balanced by expansion. Hydrogen fuses into Helium

4. For Stars about the same size as the Sun: 8. For Stars much bigger than the Sun:

5. **Red giant:** fuses Helium into heavier elements

9. **Red super giant:** fuses Helium into heavier elements

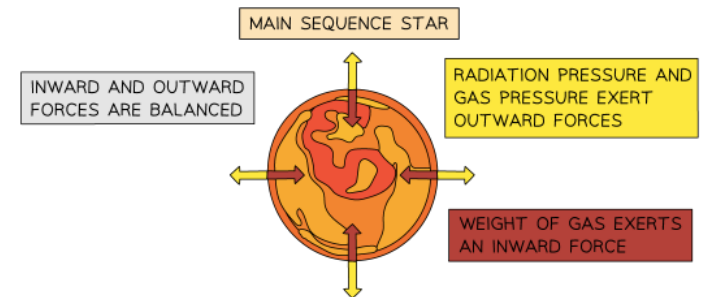
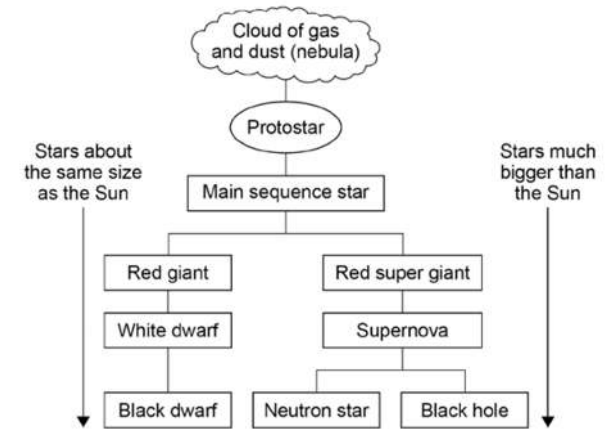
6. **White dwarf:** Collapsed star becomes white hot

10. **Supernova:** Red super giant collapses causing a cataclysmic explosion forming the heaviest elements

7. **Black dwarf:** Collapsed star cools

11. **Neutron star:** Extremely dense core left from supernova

12. **Black hole:** If neutron star is huge enough it collapses so no light can escape



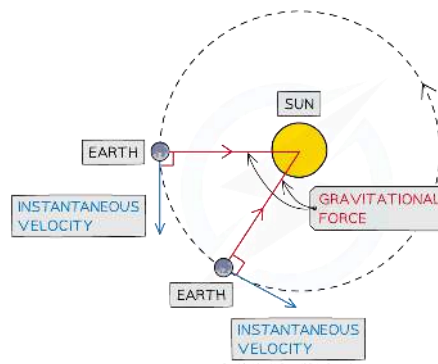
2. Orbital motion

Satellite: A natural or man made object that orbits a planet

Orbit: gravity continuously pulling an object around (object always falls)

Velocity: Continual changes even though speed does not

Stable orbit: If distance reduces speed must increase



3. Red shift

Definition: When an object moves away from an observer the light colour becomes redder.

Observation: The further the object is the greater its red shift

Conclusion: That the universe is expanding from a central point

The Big Bang: Theory used to explain the red shift evidence. The idea of the universe was created by a hot and dense singularity exploding outwards