

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

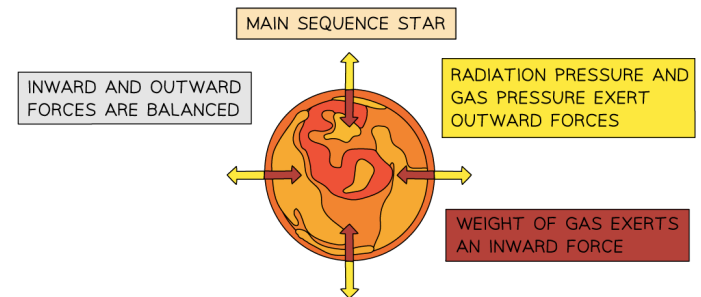
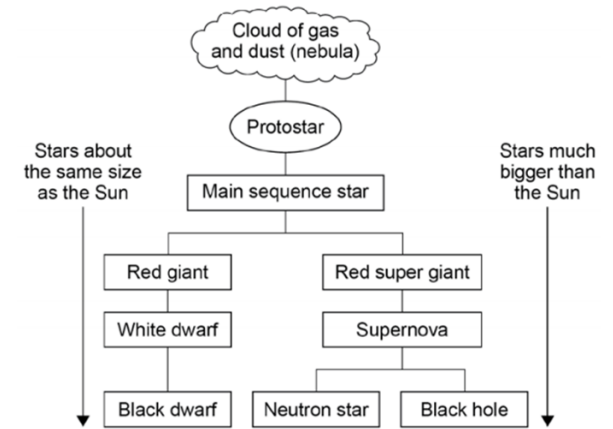
6. **White dwarf:** Collapsed star becomes white hot

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

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

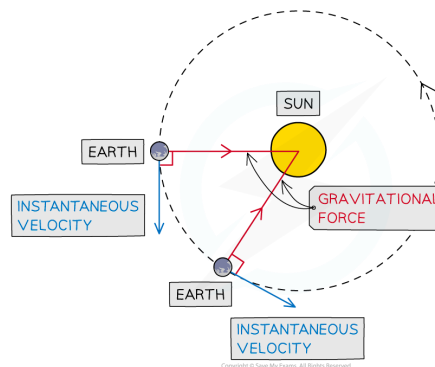
11. **Neutron star:** Extremely dense core left from supernova

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