



Throughout many cultures in many eras

- The sun was always thought of as a God-like object with powers to change the world
- Our ancestors were not entirely displaced in their understanding since the sun provides:
  - Light energy
  - Heat and
  - A gravitational force of attraction to maintain planets' orbits

## How was the sun made?

- The sun is a star
- It was born in a collapsing clouds of interstellar gas
- It was born in a cluster of stars and escaped

## Inside of the sun?

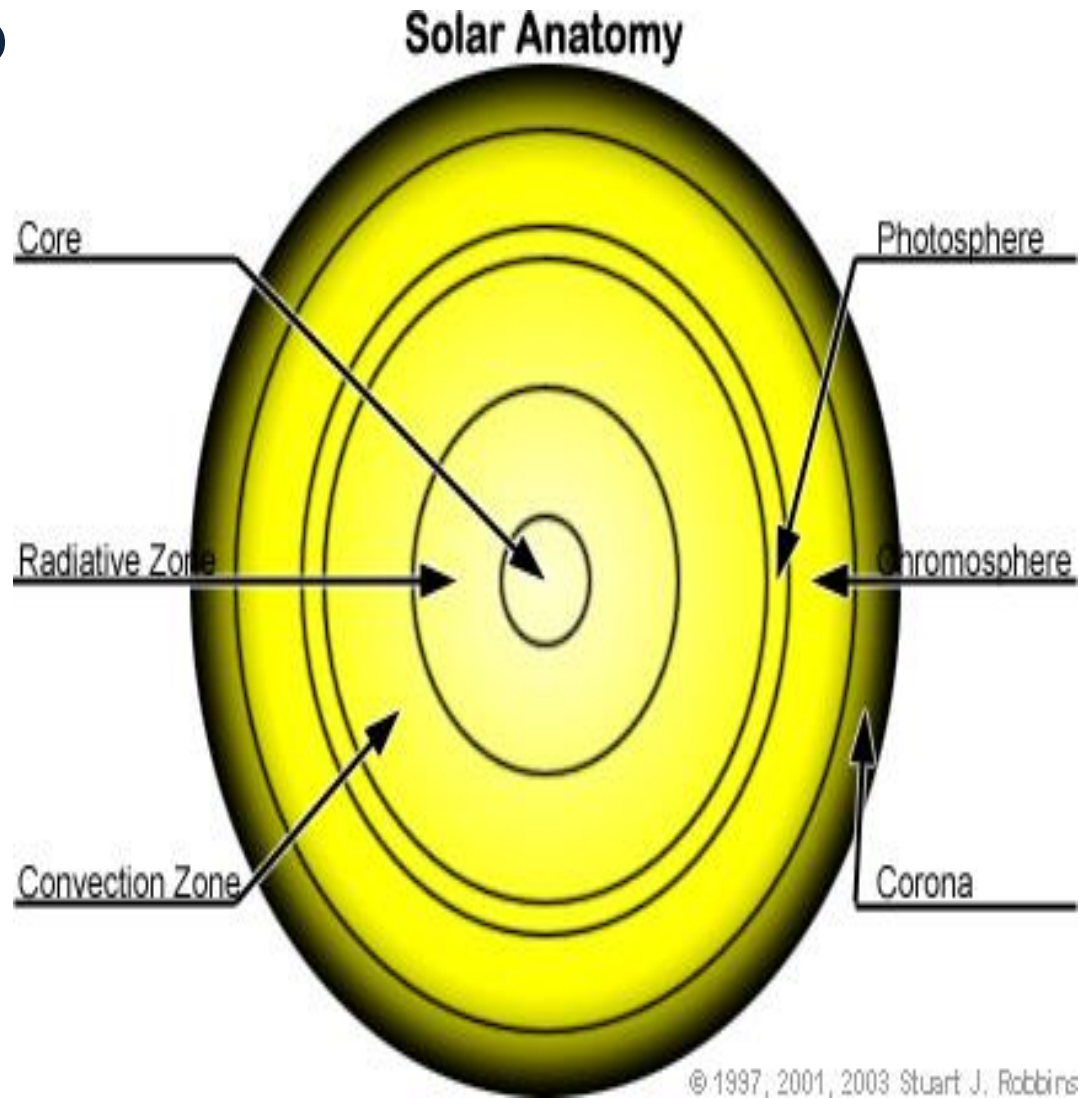
- Reactions occur
- These reactions are called nuclear fusions since Hydrogen atoms fuse together to form Helium.
- Energy is released during this process
- The energy is in the form of heat and light

# What is it?

- It is not just a ball of fire
- It has layers:
  - the surface of the sun is called the **photosphere**, and is dense with gases.
  - Under the photosphere lies the **convective zone**, where heat moves to the surface (thus the name : *convective*), and cooler material falls back down. This layer makes up roughly 70% of the Sun's radius.
  - Then comes the **radiative zone**, where heat is *radiated* up towards the surface.
  - Then comes the **core**, where temperatures can easily be around 15,000,000 °C. This is where hydrogen and helium molecules are fused together, to create the light we see.

# Where is it?

- It is in the Milky way galaxy
- It is about 93 million miles away from the Earth



The sun provides:

1. **Gravitational force:** keeps the celestial bodies in orbit around it

## 2. Light

- Plants use the light energy from the sun to make its own food in the process of photosynthesis
- Organisms use light to see...and see in different colours
- the light from the sun is called white light but white light is actually made of a number of colours : Red, Orange, Yellow, Green, Blue, Indigo and Violet ( use ROY G BIV to remember)

## 3. Heat

- The energy the Earth receives from the sun in the form of heat
- Adds to the warmth of the earth's surface and organisms

# ASSESSMENT

- What is the main source of energy on Earth?
- Name three uses for this main source of energy.
- What is the name of the force that keeps the planets in orbit?
- Name the colours white light is made of.
- Name another use of energy from the sun other than gravitational force.
- Can we use energy from the sun instead of fuel like gasoline and coal? Explain how we can do this.