WJEC England GCSE Physics 10.1 - Solar System

Flashcards

In which galaxy is our solar system?

Which galaxy is our solar system part of?

The Milky Way galaxy.

How many planets make up our solar system?

How many planets make up our solar system?

Eight (plus the dwarf planets).

What do the planets in our solar system orbit around and what type of body is it?

What do the planets in our solar system orbit around and what type of body is it?

- The planets orbit around the sun
- The sun is a star

What type of force pulled together the cloud of dust and gas to form the Sun?

What type of force pulled together the cloud of dust and gas to form the Sun?

Gravitational force of attraction.

What word is used to describe a cloud of dust and gas?

What word is used to describe a cloud of dust and gas?

A nebula.

What type of reactions take place at the start of a star's life cycle as dust and gas is drawn together?

What type of reactions take place at the start of a star's life cycle as dust and gas is drawn together?

Fusion reactions.

What factor determines the type of lifecycle a star undergoes?

What factor determines the type of lifecycle a star undergoes?

The size of the star.

Which two phases do all stars of the same or greater size than the sun undergo?

Which two phases do all stars of the same or greater size than the sun undergo?

1. Protostar phase
2. Main sequence phase

What do stars of a similar magnitude to the sun become at the end of their life-cycle?

What do stars of a similar magnitude to the sun become at the end of their life-cycle?

A black dwarf.

What two things can stars much bigger than the sun become at the end of their lifecycle?

What two things can stars much bigger than the sun become at the end of their lifecycle?

1. Neutron star
2. Black hole

What two phases do stars of similar size to the sun go through between being a main sequence star and a black dwarf?

What two phases do stars of similar size to the sun go through between being a main sequence star and a black dwarf?

1. Red giant
2. White dwarf

What two phases do stars of greater size than the sun go through between being a main sequence star and a neutron star/black hole?

What two phases do stars of greater size than the sun go through between being a main sequence star and a neutron star/black hole?

1. Red supergiant
2. Supernova

What is produced during the fusion processes in a star?

What is produced during the fusion processes in a star?

Atoms of all the naturally occurring elements.

What condition is required for fusion reactions to occur in a star?

What condition is required for fusion reactions to occur in a star?

Very high temperatures and pressure.

In what conditions are elements heavier than iron produced?

In what conditions are elements heavier than iron produced?

In a supernova.

What type of nuclei fuse together to form heavier elements in a star?

What type of nuclei fuse together to form heavier elements in a star?

Hydrogen nuclei fuse to form heavier elements. First, two hydrogen atoms fuse to form helium.

How are elements distributed throughout the universe?

How are elements distributed throughout the universe?

Through the explosion of a massive star (supernova).

What allows planets and satellites to maintain circular orbits?

What allows planets and satellites to maintain circular orbits?

- Gravity provides the gravitational force.
- This acts as the object's **centripetal** force.
- The presence of a centripetal force allows for the object to maintain its circular orbit.

What type of satellite can a planet's moon be described as?

What type of satellite can a planet's moon be described as?

A natural satellite.

Give two examples of artificial satellites.

Give two examples of artificial satellites.

1. TV satellites.
2. Satellites used for satellite imaging.

Explain why for a stable orbit, the radius of orbit must change if the speed changes. (Higher)

Explain why for a stable orbit, the radius of orbit must change if the speed changes. (Higher)

- At higher speeds, the object requires a greater centripetal force.
- For a greater centripetal force, the gravitational force must increase.
- This is achieved by the radius of the orbit being reduced.

Explain how the force of gravity acting on a satellite affects its speed and velocity. (Higher)

Explain how the force of gravity acting on a satellite affects its speed and velocity. (Higher)

- The force can alter its velocity because it is at right angles to the motion, so it causes direction to continually change.
- It can't cause a change of speed since there is no force component in the direction of motion.