

Paper 2

Chapter 7 — Space

Red Shift

Red-shift provides evidence that the universe is e_____ and supports the _____.

Recent evidence suggest that distant galaxies are receding ever f_____.

The reason why is unknown and its suggested it is caused by d____ e_____.

Orbits

For a c_____ orbits the v_____ can change (because the _____ changes) but the s_____ remains constant. This is a _____ without s_____ up.

In a stable orbits the s_____ of the orbit must _____ as the r_____ of the orbit increases.

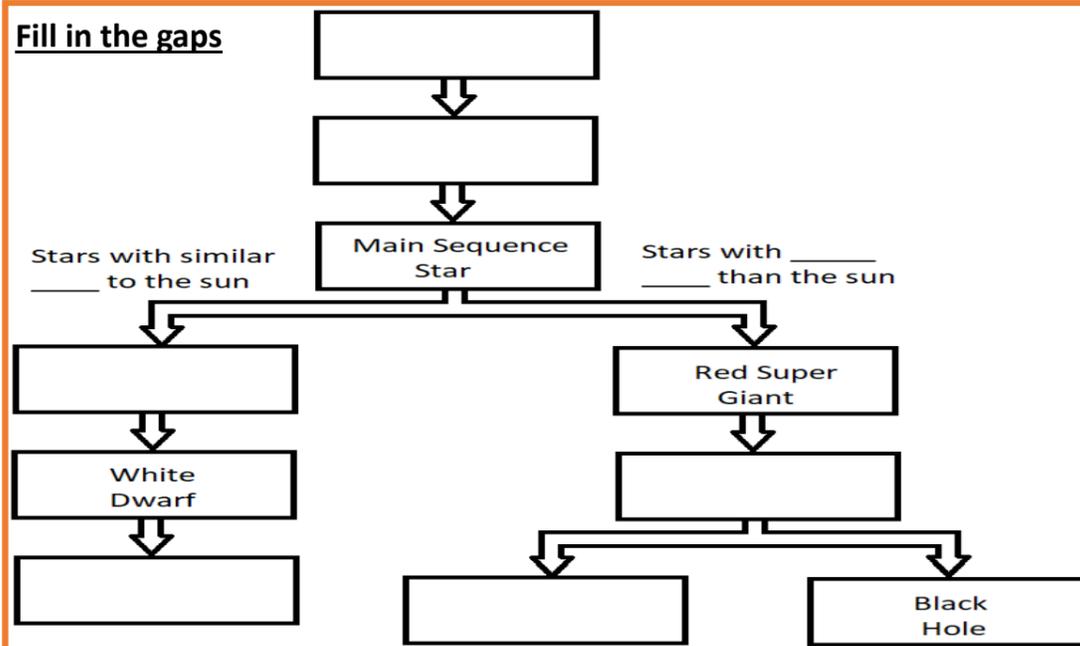
Gravity

Gravity provides the force that allows p_____, m_____ and s_____ to maintain their circular orbits.

P_____ orbit s_____.

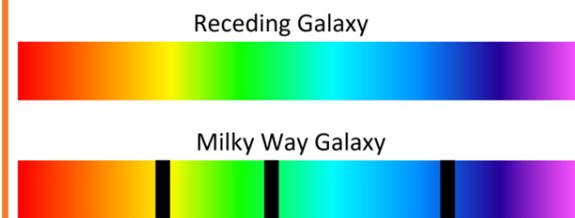
M_____ and a _____ s_____ orbit p_____.

Fill in the gaps



Red Shift

Draw the absorption lines on the spectrum of the receding (moving away) galaxy



Draw the wave after it has been red-shifted

Solar System

In our solar system there is _____ star called _____.

There are _____ planets.

There are several _____ planets like Pluto.

The sun was formed from a cloud of dust called a _____ that was pulled together by _____.

Elements

F_____ in stars produce all of the naturally occurring elements up to i_____.

Elements heavier than i_____ are produced in a s_____ which distributes the elements throughout the universe.

Write the same number on word and definition

PLANET	A body which orbits a star
MOON	A gigantic explosion
DWARF PLANET	The path a planet takes around a star
GALAXY	Elements bigger than this can only be formed in a supernova
MILKY WAY	The reaction in a star that releases energy and forms elements up to Iron
PROTOSTAR	What is left when a white dwarf star has cooled
NEBULA	A large group of stars
MAIN SEQUENCE	The factor that determines which life cycle a star takes
MASS	A very large star which has run out of hydrogen and started to fuse helium
FUSION	A star where the gravitational collapse is balanced with the expansion caused by fusion
RED GIANT	A very dense small star made of neutrons
WHITE DWARF	A natural satellite which orbits a planet
BLACK DWARF	Something that orbits a star but that is too small to class as a planet (e.g. Pluto)
SUPERNOVA	An increase in wavelength of light from distant galaxies
IRON	Our solar system is a small part of this galaxy
NEUTRON STAR	When a massive star collapses to a point that is so dense that even light cannot escape
BLACK HOLE	A star where fusion has stopped and it has collapsed. Its surface is hot and it glows
ORBIT	The force which keeps things in orbit
ELLIPTICAL	The idea that the universe began in a very small region and is now expanding
GRAVITY	If an object has a steady speed but is changing velocity and accelerating it must be traveling in a _____ path
CIRCULAR	The shape of a planets or moons orbit
RED SHIFT	A cold cloud of gas and dust
BIG BANG THEORY	A contracting ball of gas that will form a star

Paper 2

Chapter 7 — Space

Red Shift

Red-shift provides evidence that the universe is **expanding** and supports the **big bang theory**.

Recent evidence suggest that distant galaxies are receding ever **faster**.

The reason why is unknown and its suggested it is caused by **dark energy**.

Orbits

For a **circular** orbits the **velocity** can change (because the **direction** changes) but the **speed** remains constant. This is **acceleration** without **speeding up**.

In a stable orbits the **speed** of the orbit must **decrease** as the **radius** of the orbit increases.

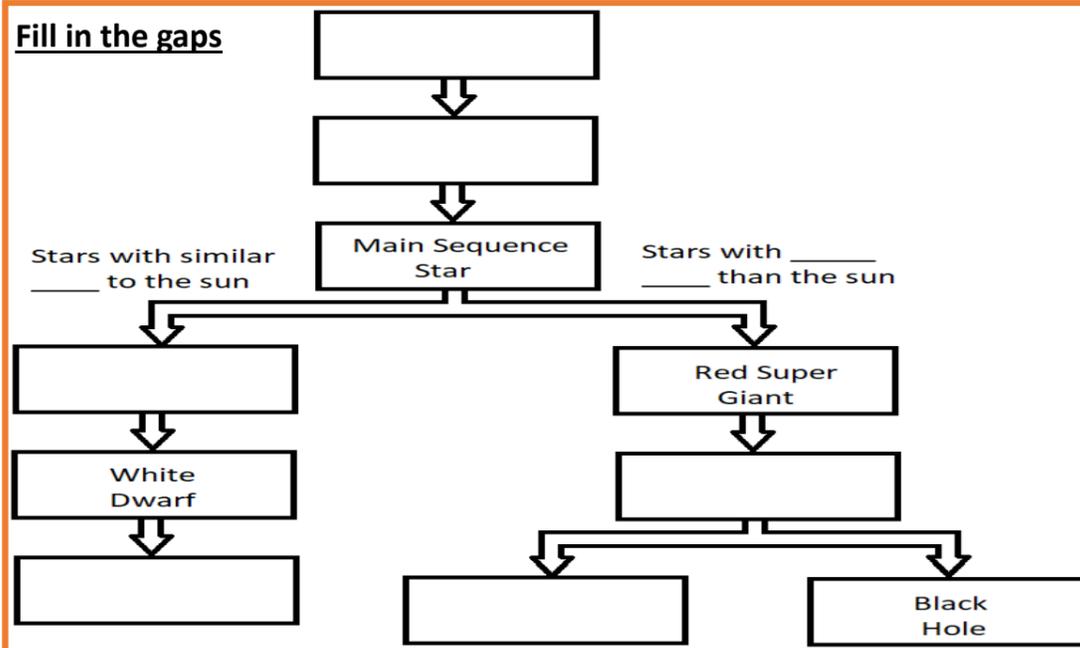
Gravity

Gravity provides the force that allows **planets**, **moons** and **satellites** to maintain their circular orbits.

Planets orbit **stars**.

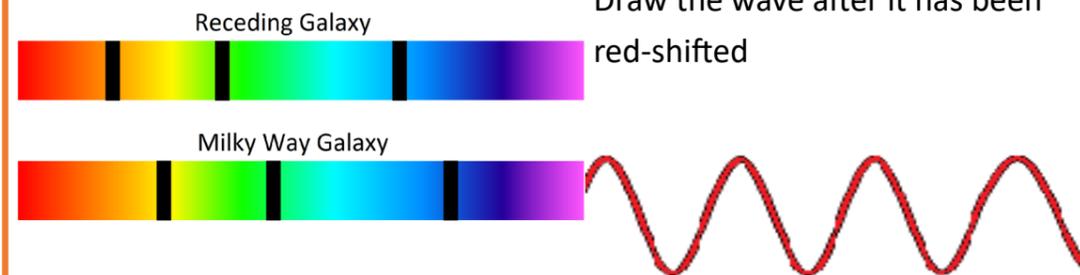
Moons and **artificial satellites** orbit **planets**.

Fill in the gaps



Red Shift

Draw the absorption lines on the spectrum of the receding (moving away) galaxy



Solar System

In our solar system there is **one** star called **the sun**.

There are **eight** planets.

There are several **dwarf** planets like Pluto.

The sun was formed from a cloud of dust called a **nebula** that was pulled together by **gravity**.

Elements

Fusion in stars produce all of the naturally occurring elements up to **iron**.

Elements heavier than **iron** are produced in a **supernova** which distributes the elements throughout the universe.

Write the same number on word and definition

1 PLANET	1 A body which orbits a star
2 MOON	14 A gigantic explosion
3 DWARF PLANET	18 The path a planet takes around a star
4 GALAXY	15 Elements bigger than this can only be formed in a supernova
5 MILKY WAY	10 The reaction in a star that releases energy and forms elements up to Iron
6 PROTOSTAR	13 What is left when a white dwarf star has cooled
7 NEBULA	4 A large group of stars
8 MAIN SEQUENCE	9 The factor that determines which life cycle a star takes
9 MASS	11 A very large star which has run out of hydrogen and started to fuse helium
10 FUSION	8 A star where the gravitational collapse is balanced with the expansion caused by fusion
11 RED GIANT	16 A very dense small star made of neutrons
12 WHITE DWARF	2 A natural satellite which orbits a planet
13 BLACK DWARF	3 Something that orbits a star but that is too small to class as a planet (e.g. Pluto)
14 SUPERNOVA	22 An increase in wavelength of light from distant galaxies
15 IRON	5 Our solar system is a small part of this galaxy
16 NEUTRON STAR	When a massive star collapses to a point that is so dense that even light cannot escape
17 BLACK HOLE	12 A star where fusion has stopped and it has collapsed. Its surface is hot and it glows
18 ORBIT	20 The force which keeps things in orbit
19 ELLIPTICAL	23 The idea that the universe began in a very small, hot, dense region and is now expanding
20 GRAVITY	21 If an object has a steady speed but is changing velocity and accelerating it must be traveling in a _____ path
21 CIRCULAR	19 The shape of a planets or moons orbit
22 RED SHIFT	7 A cold cloud of gas and dust
23 BIG BANG THEORY	6 A contracting ball of gas that will form a star