

July 2022

Space

abscess



Reddiford
Digest

Have you ever wanted to know more about our Universe? Well this term's Science Digest is all about SPACE. You can dive into the depths of all the fascinating objects which are floating around in our Universe. Space is such an interesting topic; we had really good fun creating this edition. So sit back, relax and get ready to be blasted out of this world!

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LET'S ROCKET TO SPACE!

BY AKSHAYEN SAJIRAM 5B

Have you ever wondered how rockets fly to space? How they land? How they work? Well now you can find out by reading this article about rockets in front of you! Amazing right! What are you waiting for? Let's rocket into space!

What are rockets?

Rockets are a combination of maths, science and engineering. They jet out into space and sometimes transport animals and humans too! Most rockets were launched by the USA & Russia, but I won't talk about that now. Nowadays rockets are used to carry out expeditions to space and scientists say that in the future, people will be allowed to go to space as a holiday!



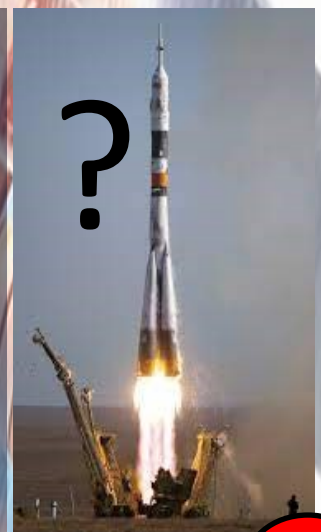
How do rockets work?

That's as easy as rocket science. Well, it is rocket science. The fuel, Rocket-grade petrol, is called RP-1 and consists of a highly refined kerosene mixed with liquid oxygen. Hyperons are able to self-ignite on even the slightest contact between the fuel and the oxidiser. These fuels simply need nitric acid in order to ignite and are used for propulsion when out in space. The rest relies on the engineering behind it.



Why do we need rockets?

Rockets are the go to vehicle for travelling in space. These rockets are essential for the exploration of the universe. They help us launch satellites and robots as well as using the knowledge gained from these explorations. Super rockets like the Apollo 11 and the space shuttle have been able to complete near-impossible feats like landing humans on the moon. These rockets also have given ideas for normal things. Rockets have also inspired us as a world.



LET'S ROCKET TO THE PAST, PRESENT & FUTURE!

In the past many rockets were included in the space race. These rockets carried the first people into space.

Nowadays, rockets are mainly used to transport probes and carry out exploration missions.

In the future rockets may be used as an option for a holiday.



Past

The use of gunpowder rockets likely goes back to the Song Dynasty of 13th century China. Rockets would be used by militaries for various purposes, such as laying siege to fortifications and walled cities, as well as for fireworks. Later on, rockets made by Goddard were fuelled by liquids which were less advanced as RP1.

Future

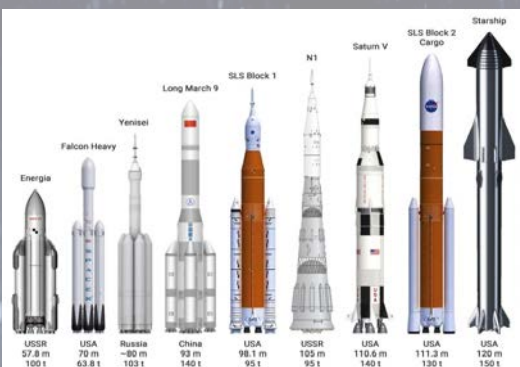
The future use of rockets is ambiguous. Yet, scientists say that we are able to travel to space. Maybe even aliens will be discovered???? We can only wonder.....

Present

Now rockets are used to launch satellites and probes. But a few years back the Space Shuttle era began. During this era, rockets called space shuttles were designed and created by the US. These were created as they were reusable. But at some point it had to end. After that, everything seemed to die down. Still, probes would not be on other planets if it weren't for our present rockets.

Joke Time!

- * I gave my friend a rocket for his birthday.
He was over the moon!!!
- * I bought some rocket food the other day.
It went off before I could eat it!
- * Why did Mickey Mouse fly in a rocket?
He went to find Pluto!
- * Where can you leave your rocket when you're in space?
Near a parking meteor!
- * How do yet get an alien to sleep?
You rocket!



HOW TO MAKE A ROCKET

Have you ever wanted to build a rocket and fly it? Well now's your chance. Follow this simple step-by-step instructions on how to build and fly your own bottle rocket.

Items required:

- An empty hole less plastic pottle
- Cardboard cut into fins and a open-faced cone
- A bottle cork.
- A football pump
- A needle adaptor
- Water
- Scissors
- Card



STEP 1-Push the needle adaptor of the football pump into the cork. It needs to go all the way in so the cork might have to be trimmed

STEP 2— Cut out cones and fins from a sheet of card and stick them onto the bottle.

STEP 3-Fill one quarter of the bottle with water and push the cork in very tightly.

STEP 4-Take the bottle outside and connect the pump to the needle adaptor. You may need to stand your rocket on a box if your fins are not strong.

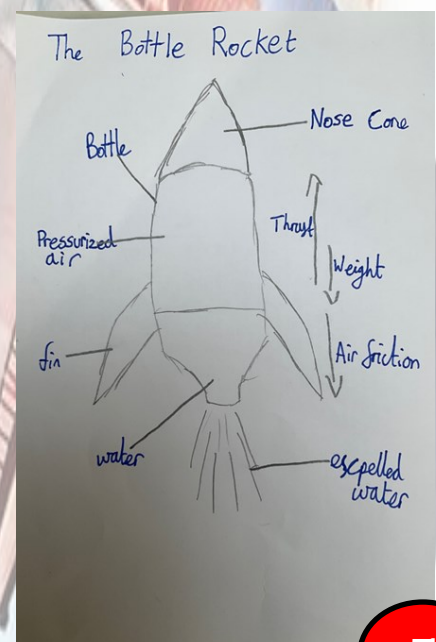
STEP 5-Pump the air into the bottle, making sure everyone except the pumper stays back. The bottle will lift off after a few seconds.

How does it work?

Pressure in the bottle rises as you pump. Keep pumping, and the force of the air pushing on the water becomes strong enough to force the cork out of the bottle. This allows the water to rush out in one direction, while the bottle pushes back in the other direction. Hence, propelling the rocket upwards.

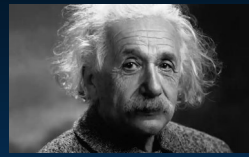
Space rockets work to a similar principle in this experiment, but use fuel to make a powerful jet of gas. The force of the gas downwards pushes the rocket upwards. This is a great demonstration of Newton's Third Law*.

* Newton's third law states 'for every action there is an equal and opposite reaction.'



Beguiling Black Holes

By Anaiya Thukral 5G

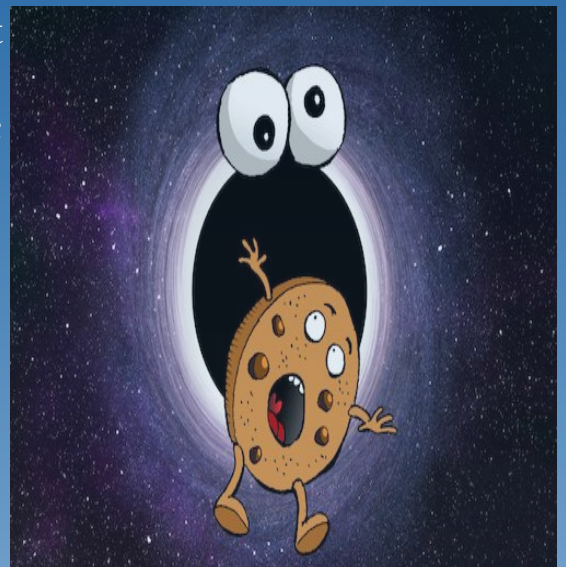


What is a Black Hole ?

Let me tell you... Black holes are formed by a death of a massive star. Black holes are impenetrable and light cannot escape. Albert Einstein predicted a black hole in space and Steven Hawking figured out the method to calculate the area of a black hole.

Why are Black Holes so Important?

There are jets and outflows of gas called “winds” which spread atoms throughout the galaxy, and can either boost the birth of new stars, depending on other factors. That means supermassive black holes play an important role in the life of galaxies, even far beyond the black hole's gravitational pull.



RECAP:

- A) What are jets and outflows called?
- B) Who first predicted there would be a black hole ?

- A) Winds
- B) Albert Einstein
- C) Steven Hawking

Answers:

Bitter Black Holes

By Anaiya Thukral 5G

22nd February 2054

Dear Diary,

Today was the most frustrating day of my life! All of the space junk was consumed and sucked inside me. Luckily no one can see me from Earthlop (Earth) or whatever it is called- so technically I'm invisible! Utter bliss! I reallyyyyyyy hope it stops soon. Plus, I feel pity for people and space junk I gobble up.

It was fantastic talking and writing to you diary about my day. Please write back to me when convenient.

Love,

Black Hoe

JOKE TIME!

By Anaiya Thukral 5G

How did the Black Hole lose so much weight?

Simple, he ate light!

What do vegan Black Holes say?

"I'm on a strictly planet based diet"

Why don't Black Holes
achieve good grades?

Because they aren't bright enough!

Why are Black Holes fascinating objects?
Once you go black you never go back.

Dark Energy and Matter

By Pranit Narkar 5G

We know a lot about black holes, enough to have a basic understanding about how they form and their appearance. Now, we will go in depth about a trickier, yet fun topic called dark energy and matter. The tricky thing, even though we don't know much about dark energy and matter, is that it makes up THE ENTIRE SPACE! Ever wonder why the sky is black; now you will know! Dark energy and matter is next to stars, but it does not reflect light and doesn't create any of its own light!

See here, this picture beside me shows a wormhole that can be caused using the unique forces of the dark matter.

Theories show that if you jump in one end, you will travel into the future, which can be admirable because the amount of distance divided by the incredible speeds reached, can warp time and bend our imagination.



Sometimes, wormholes can bring people and things to different dimensions; right now we are in the third dimension. We are all 3D, but maybe we could travel in the fourth, or even the first and second dimensions! We would look flat and goodness knows what we will find out!

Quick riddle while we are at it!

Do you know what is Earth's favourite chocolate bar?

What is dark energy? Well, as you know now, it is what makes up more than 3 quarters of the entire solar system. It is what swirls around our universe and outside of it at every planet. Some dark energy actually gets trapped in the atmosphere when holes are being punctured, but they soon get out because of the thick outer layer of the Earth. Imagine if dark energy is purple, or blue for some reason, then the space we would see, would be amazingly dark blue and purple, all around us it would be purple, and even the sky blue colour our in our atmosphere will have tinges of purple! If you think that this is really rather harmless, then you are so WRONG. One day the utter expansion will burst into a 'KING SUPERNOVA' and destroy everything, but don't worry, it will only happen in the next billion, or even trillion years!

Dear Mum,

I hope you are well. I have travelled into a wormhole, and if I ever return, I will tell you that the sight here is amazing! The blackholes are dotted around a certain line; my spaceship was just about far enough to escape their grasp.

I can clearly describe the colour

of it. There were millions of super bright rings around it, and it was called the Event Horizon. I guess that is where all the scary events happen! And, I could barely make out the tiny midnight black dot in the centre!



From:

Your Son

To:

Earth

Where:

I have no idea!:

Quick quiz!

What do you type
on a dark calculator
to make it quiet?

44445

Quick riddle!

What is Earth's
favourite chocolate bar?
MARS, MILKYWAY
AND GALAXY ARE
ACCEPTABLE



WRMOESLOH DRKANERGEY DKARTTERMA SPAWR
YURO ENDB INMD DRAK BLAENU , ILLW CRAYS



Rearrange these words on the second line to make a
sentence. Then place these words in the text.

Scary dark nebulae will blow your mind.

Quick Quiz!

Sometimes, when nebulas lose all their light, they turn dark, and
can turn a bit into dark energy, these are called dark nebulae .
Sometimes the utter darkness and quietness of wormholes
can bend your mind even great
modern and ancient astronomers can not figure out dark energy,
it will certainly be a scary sight.

Find all the imposters in the black hole vents or
question marks, and count them!

The Shimmering Sun

I hope you want to know about the Sun because all the information is here. There is an acrostic poem, factual writing and much more in here. So, do not close this, because this will keep you entertained.

Let's start you off with some information about the Sun in an acrostic poem. I hope you enjoy this piece of writing!

Red Sun

This is the shimmering Sun,
Hydrogen and helium surrounds it.
Extremely hot, so don't go close,
Satellites tell us information about the Sun,
Heat, heat, heat, this is getting hot!

I know you like this,
Mighty, mighty the Sun is,
Mighty, mighty the sun is .
Extremely hot the sun is,
Run away, don't stay close!

I know you like this
Nebula, it looks really cool.
Gas giants orbit the Sun, so do rocky planets,
Saturn is a gas giant,
Uranus is one too,
Now you know a bit about the Sun!



Let's See Where The Sun Shines

Shines

1

It can take up to 100,000 years for the sunlight from the core of the Sun to reach the surface of the Sun. But it only takes 8 mins for the sunlight to reach Earth and we are 147.96 million km away from the Sun.

2

Have you ever wondered how hot the Sun is, well here is your answer. The Sun 's temperature is 15 million °C.

3

Have you ever wondered how many Earths fit in the Sun, well I've got it here. There are 1.3 million Earths can fit in the Sun. Imagine having that much space around you!



Are we getting closer to the Sun?

We are actually not moving closer to the Sun but we are actually moving away from The Sun. Now I will tell you why this is happening.

The planets exist within a balanced movement with other planets and our Sun. Generally, our own planet, as well as the other planets, have stayed in the same place for billions of years. As the planets in our solar system move, the Sun uses its gravity to pull the planets towards it. The gravity from the Sun causes our planet to move in a curved, elliptical path. Thankfully, the planets are moving fast enough so that they are not pulled into the Sun, which would destroy Earth. On the other hand, we are also not moving quickly enough to escape the Sun's pull. If we moved faster, our planet might drift away from the sun. This would be devastating since we rely on the Sun to support life on our planet.



Fun Facts!

The Sun currently fuses around 600 million tonnes of hydrogen into helium every second. It is converting 4 million tonnes of matter into energy every second as a result.

The Sun is approximately 4.6 billion years old.



Though there are billions of stars in the galaxy, our Sun will always be the most special star.

The Sun accounts for 99.86% of the mass in the solar system.

The Sun travels at a speed of 20km per second.



One day the Sun will consume the Earth!

Jokes

By Aariyan Malde 5B

What is the Sun's favourite day of the week? Sunday, of course!

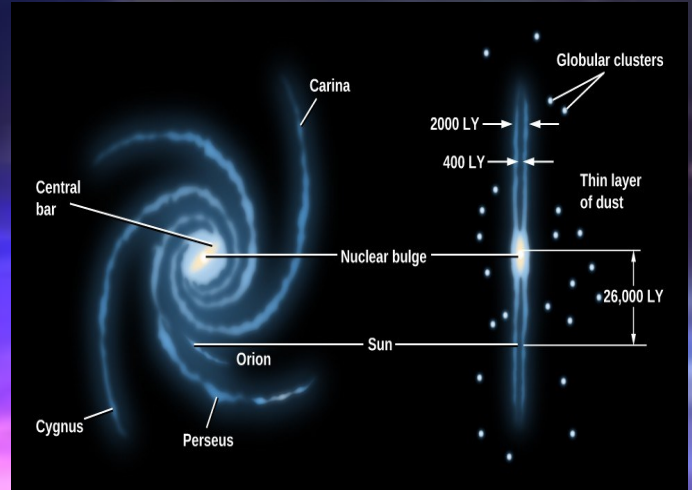
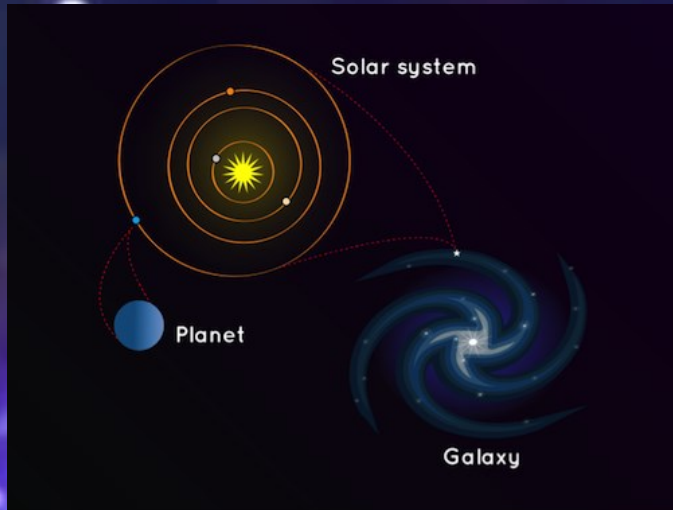
Why is the Sun so popular at parties? Because he is the sunniest.

Why is the Sun not very heavy to carry? Because it is really light.

Galaxy Gusto

A galaxy is a huge collection of gas, dust, and billions of stars and their solar systems, all held together by gravity.

Our solar system's galaxy is called the Milky Way and it has a super massive black hole in the centre of it.



The above diagram shows where the galaxy, basically the Milky Way, is located in perspective of our solar system.

When you look up at stars in the night sky, you're seeing other stars in the Milky Way. If it's really dark, far away from lights from cities and houses, you can even see the dusty bands of the Milky Way stretch across the sky.



Types of Galaxy

There are four main types of a galaxy: Spiral Galaxies, Peculiar Galaxies, Elliptical Galaxies and Irregular Galaxies:

SPIRAL GALAXIES

Spiral Galaxies can be identified by their wide flat disks of rotating gas and dust.

Some spirals have large, wide, wobbly flung arms, while others have more tightly bound spirals.

Did you know? Our very own galaxy, the Milky Way is a spiral galaxy and its rotation is at 168 miles per hour!!!! Now, you have got to admit, that is ***FAST!!!***

PECULIAR GALAXY

A peculiar galaxy is a galaxy with an unusual form as suggested by its name. The 'Cartwheel' is an example of a peculiar galaxy. They experience starburst and the rapid formation of stars. They turn out to be about 60 light—years in diameter.

ELLIPTICAL GALAXIES

An elliptical galaxy is shaped elliptically like its name. It has no internal structure or spiral arms. They can have a diameter 10x the size of our Milky Way.

One of the brightest galaxies in our sky, Centaurus A, is an elliptical galaxy.

IRREGULAR GALAXIES

They are quite common in our universe and they make up a quarter of our galaxies. They do not bulge or have any trace of a spiral structure. Irregular galaxies also contain a lot of gas and dust.

They are amongst the smallest galaxies in the universe.

Game Time!!

RULES:



- Earn five points



- Lose two points

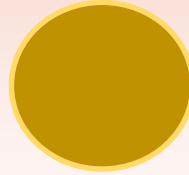
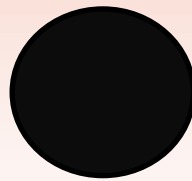


- Earn 10 points



- Lose 5 points

This is a two player game. Work through the board until you reach the finish. Each player takes turns to roll the dice. The player with the most points wins.



START
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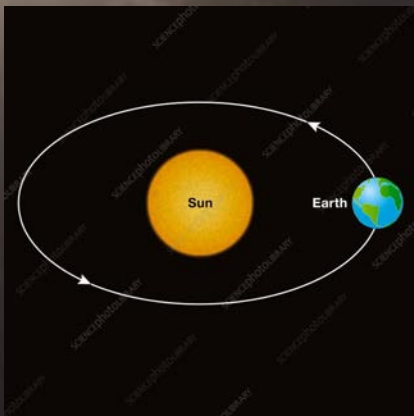
FINISH
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The Eight Planets by Eashar Stotz 4B

As you probably know, there are eight planets in the solar system - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. I'll write in detail about each planet in short paragraphs. Right let's get started!

Earth

You all know Earth, it's the planet you live on but, there's more to it than that. It's distance from the Sun is 149,000,000 kilometres which is a really loooooooooooooooooong distance. Scientists have estimated that Earth is 4.5 billion years old which means its really old. The Earth takes 365.25 days to move around the Sun, this is known as one Earth year. Here is a picture showing this. Every 23.57 hours the Earth will rotate once, this is known as one Earth day. Here is a small picture to illustrate this.



Mercury

Mercury is the smallest planet and is the closest to the Sun. It is the second hottest planet in the solar system and has a layer of gas around it that is very similar to the Moon. In the day Mercury's surface temperature can reach up to 430 Celsius but, at night it can drop to as low as -180 Celsius (brrrrrrrr!)

Venus

Venus is the second planet from the Sun and is the sixth biggest planet in the solar system. It is one of the only two planets who don't have any moons. Venus is one planet that rotates from east to west- aka clockwise. Venus's normal temperature is 465 degrees Celsius. Venus is very similar to Earth and is known as Earth's sister.

Mars

Mars is the fourth planet from the Sun and second smallest planet in the solar system. It is known as the red planet because of its colour. Mars is half the size of Earth and has the biggest volcano and deepest canyon in the solar system. The average temperature of Mars is -60 degrees Celsius.

Jupiter

This planet is the record holder for the largest in the solar system and is the fifth planet from the Sun. Jupiter has a total of 79 moons and it... doesn't have a surface?! I know, I couldn't believe it at first but then I remembered that Jupiter is a gas giant so it isn't able to land on with a spaceship.

Saturn

Saturn is the second largest in the solar system and is the record holder for the most moons in the solar system with a total of... 82 moons! Saturn has an average temperature of -175 degrees Celsius and its middle is made of iron and nickel.

Uranus

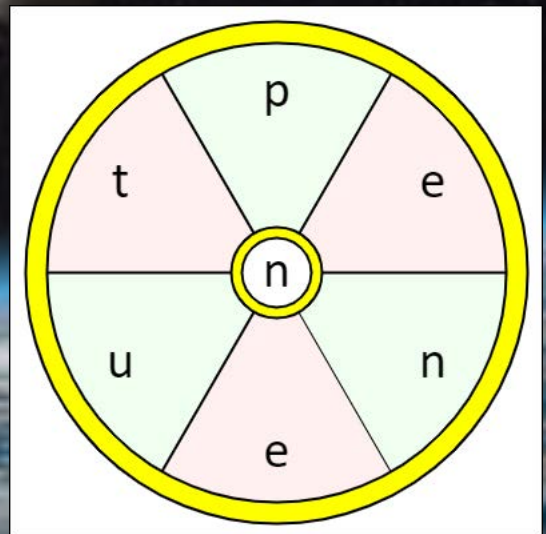
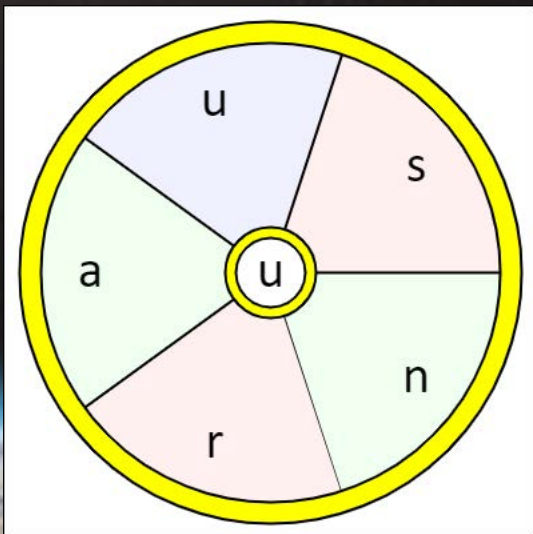
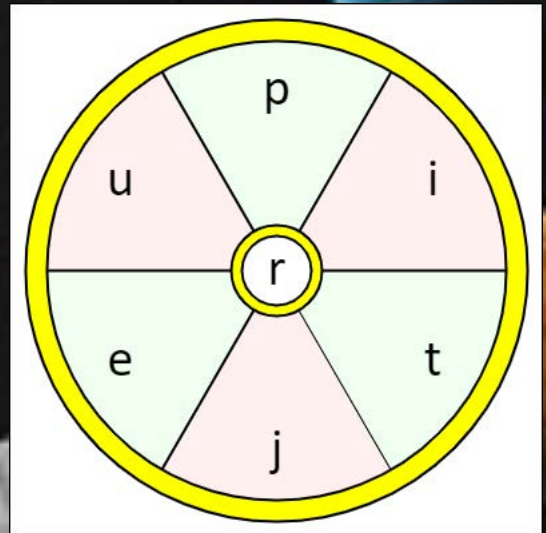
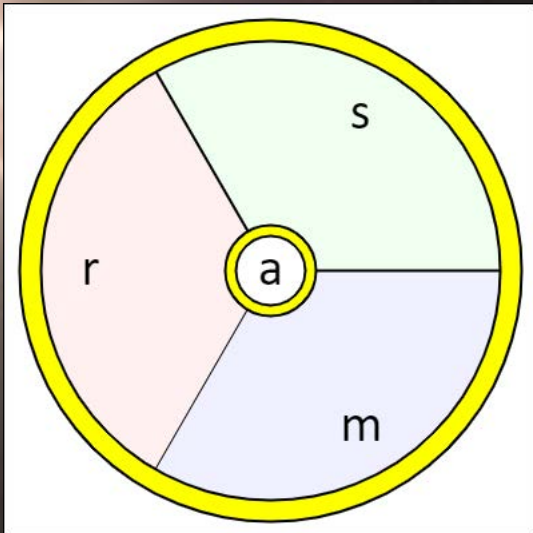
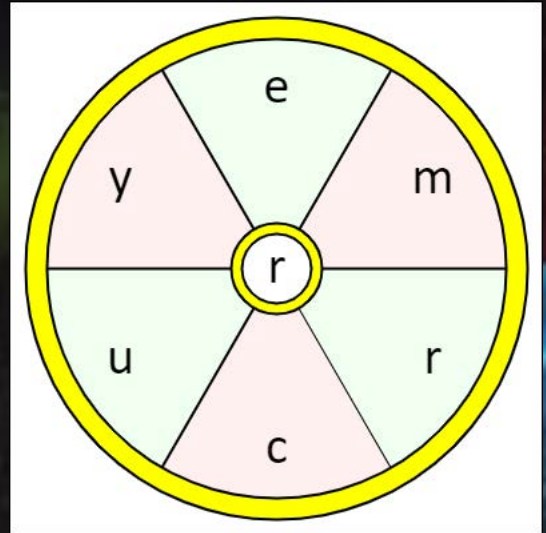
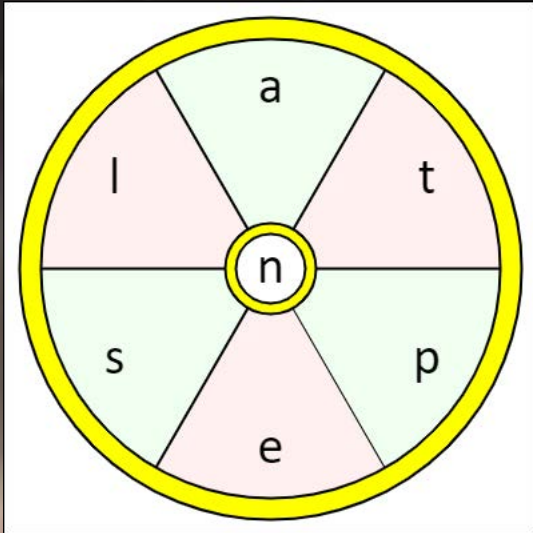
Uranus is the seventh planet from the Sun and is the third biggest planet in the solar system. As well as Neptune, it is called an ice giant because it is very cold, -224 degrees Celsius to be exact. It was found in 1781 by Sir William Herschel. Uranus has 13 rings and spins on its side and has 27 moons.

Neptune

Neptune is the eighth planet from the sun and is the fourth largest planet in the solar system. It has the highest wind speeds out of all the planets and is another ice giant like Uranus. It is the second coldest planet at -200 degrees Celsius.

Summary

So that's my review of the eight planets. I hoped you enjoyed this report on these wonderful beings that we called planets. I enjoyed writing this article on the solar system. If we do another digest on space, I will do the dwarf planets for my article! Anyway, now enjoy some space word wheels!



By Eashar Stotz 4B

SPACE EXPLORATION

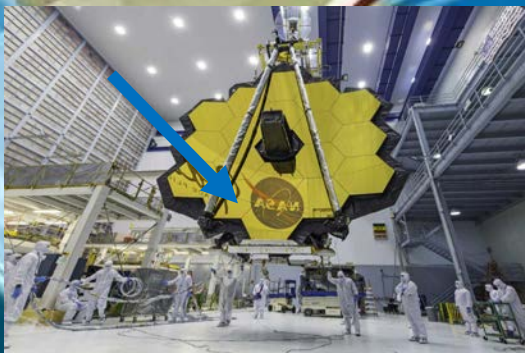
21st CENTURY

Today, all sorts of space industries are launching rockets or rovers to explore other planets, stars or moons. Find out more about these in this article!

JAMES WEBB TELESCOPE

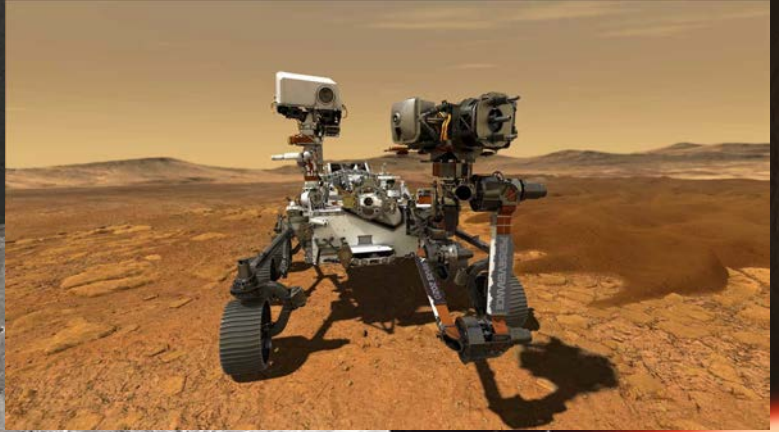
This new N.A.S.A. telescope is going to orbit the sun and use infrared to find the first galaxies that existed in the Early Universe.

This telescope has a mass of 61,614kg and cost 10 billion dollars!



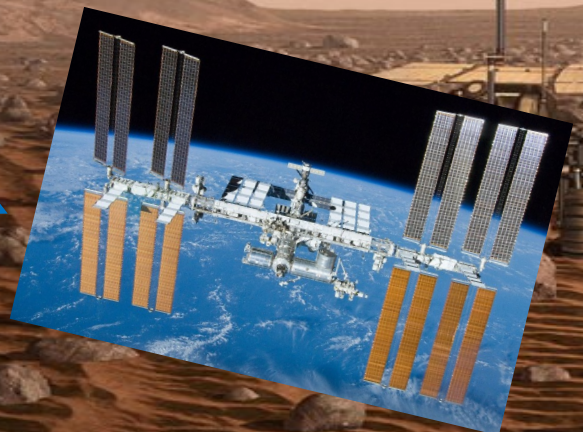
PERSEVERANCE ROVER

This latest NASA rover was sent to Mars to explore the surface and bring back samples for scientists to study. It has been on the red planet since February 2021. The rover will return to Earth in 2031.



THE ISS

The ISS stands for the International Space Station. Astronauts from around the world stay there when in space. There are currently five astronauts on the I.S.S. Four Americans and one German. The I.S.S. orbits the Earth at about 7.66 km/s and cost 15 billion US dollars!



TOURISM

People pay good money to go into space. Jeff Bezos (Chairman of Amazon), took the Blue Origin Rocket into space. Virgin Galactic has also been released. It is a commercial flight company which has ventured into flying people to space. But going into space requires training and costs a lot of money! 

Dear Mum & Dad,

I am having an amazing time on the I.S.S. The view is spectacular and I can see the whole of the globe! Eating food is quite difficult though. It flies everywhere! All the crew are really nice, and I love floating in the air!

We have almost made 10 full orbits of the Earth! I have already been space-walking, and it's quite scary. We have come far with our experiment on matter in space, and I feel that time here won't feel long! The moon looks fascinating! I hope you are all having an amazing time. I can't wait to find out the football score!



From Rishi

25/03/32

International
Space Station,
Star Street,
Milky Way.

MAGNIFICENT MOONS

A moon (or a natural satellite), is an astronomical body that orbits a planet.

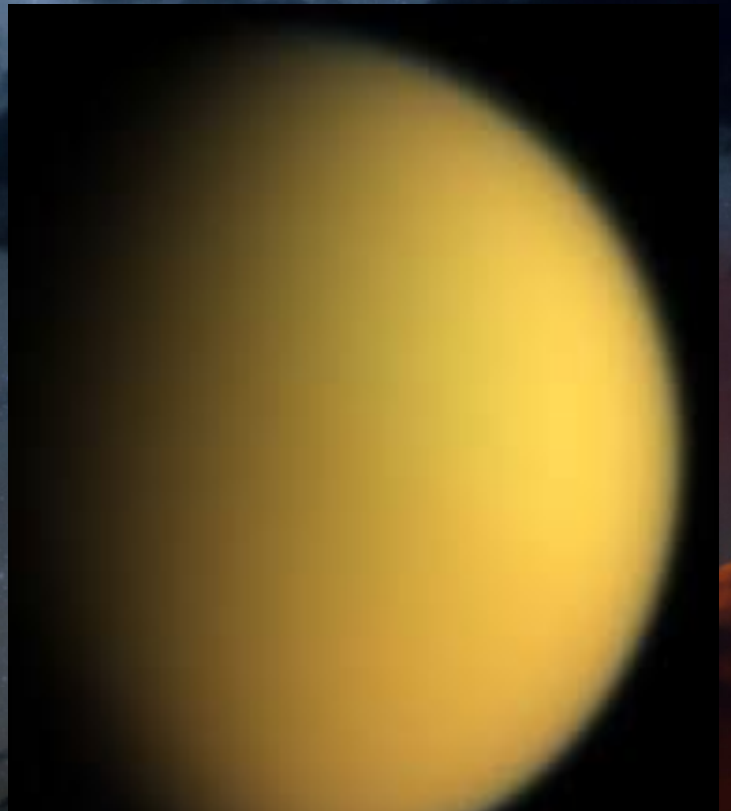
Earth, Mars, Jupiter, Saturn, Uranus and Neptune all have moons, but Mercury and Venus do not have any. The moon may seem bright in the night sky but actually, it is reflecting the light of the Sun.

Year by year, the moon is slowly edging away from the Earth's surface, 3.8cm at a time.

Did you know, that in our Solar System alone, there are over 200 moons?

This is one of Saturn's largest moons...Titan!

If you are wondering why Titan is yellow, it is because when volcanoes erupt, it releases a gas known as sulphur which turns things yellow over a period of time.



Did you know that our Moon is the fifth brightest object in the night sky?

Mars' moons, Phobos and Deimos, are among the smallest in our Solar System.

Ganymede, Jupiter's largest moon is big enough to have its own atmosphere. Hubble telescope has found evidence of an underground Ocean.

Pluto and many other dwarf planets and asteroids have their own moons. Pluto has five moons, the largest, Charon is so large they seem to orbit each other!

Cassini's recent mission to Saturn and its moons discovered Enceladus sent out jets of water vapour and ice particles from an ocean beneath its frozen crust.

Most of Uranus's moons were not discovered until the Space Age.

Saturn has 82 moons, 53 of which are confirmed and named. The other 29 are not confirmed yet.

The aim is to get to the moon in the middle of the
maze and avoid all the planets!

Start!



By Khai Shah 5G

SUPER ST ★ RS

By Vihaan

Khandelwal 60

Introduction

Stars vary in colour, size, temperature, gravity, brightness, the type of star, the constellation it is in, the age and the lifespan.

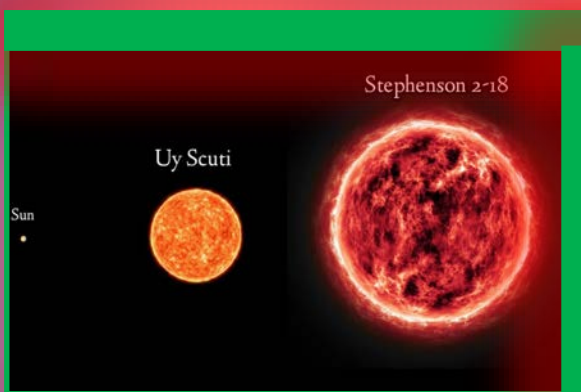
From the tiny Crab Pulsar to the humungous Stephenson 2-18, from proto-stars to the supernova explosion at the end of a supergiant star's life.

Huge Hypergiants

The largest normal star is a Red Supergiant star called UY-Scuti. What kind of a name is UY-Scuti? This is normally known as the largest star in the universe but...really!

Welcome to the star showdown! I am the commentator Vihaan. Today our battle is between UY-Scuti and Stephenson 2-18. Both these stars are in the Scutum constellation.

However, UY-Scuti is heavier than Stephenson 2-18. 1-0 to UY-Scuti. But Stephenson 2-18 is much larger than UY-Scuti so it is 1-1. Stephenson 2-18 is brighter so it is 2-1 to Stephenson 2-18! Better luck next time UY-Scuti.



Look at the picture above, we are comparing size. Stephenson 2-18 is humungous. Then there is the still quite big UY-Scuti. Finally, there is the Sun looking like a spec of dust!

Remember, the sun can fit in 1.3 million Earths inside it. Do you feel small yet? I do. But there are smaller stars like red dwarf stars and Neutron Stars.

Heavy not Huge

These mysterious objects are super-duper-kooper-truper-wuper dense! A teaspoon of it weighs 4 billion tonnes when it is only 20km in diameter! It needs to go on a diet.

Pulsating Power

They are rotating Neutron stars that rotate super-duper-kooper... you get it don't you? They rotate at huge speeds and send amounts of radiation every few milliseconds! Yikes! An example is the Crab Pulsar.

Constellations

A constellation is a group of stars that create a shape in the night sky. They help people find their way but it can be hard to see which one is which. They are measured in a square grid.

Forming

These are created when a star bigger than the Sun but not too big, dies and the core collapses on itself. The core is left and becomes the neutron star.

Fun Facts

There are 88 constellations, 48 are classical Greek ones and 12 are zodiac signs.

The biggest constellation is Hydra, which is one of the 48 Greek classics.

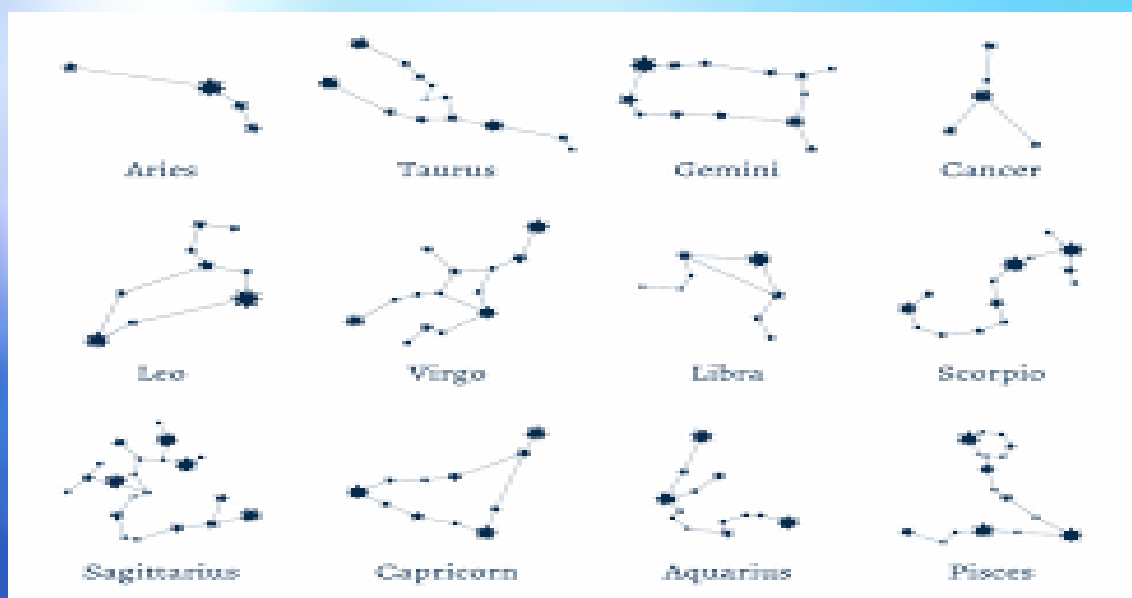
Our Sun isn't part of any constellation.

The 12 zodiac signs are Cancer, Capricorn, Leo, Virgo, Sagittarius, Aries, Taurus, Pisces, Scorpio, Libra, Gemini and Aquarius.

It comes from the Latin word "constellatio".

Mix-up

The Southern Cross is a constellation helpful for sailors and lost people because it is at the South. The False Cross is another constellation that people often think is the Southern Cross and follow it but get even more lost!



Supernova Disaster

I needed to translate everything from Silmonese (his language) into English.

Nvvhiu was on his spaceship, the Millennium Falcon.

Suddenly, the spaceship shook and Nvvhiu fell over.

“What is that?” he said, worried. He scanned the space.

Asteroids were coming straight at him. Luckily he was an amazing pilot and dodged most of the asteroids with tricky manoeuvres. Unfortunately, one asteroid hit his left engine.

“MAYDAY!MAYDAY! Left engine hit by big asteroid! Need immediate assistance!” Nvvhiu shouted.

“Don’t worry, Nvvhiu, the rescue ship is on its way, stay on the right side of the ship with your hands behind your head; you need to brace for the worst. Put all your stuff on the right side too. A supernova happened 50.689 lightyears away - a star called Alpha Orionis exploded. The asteroid that hit you had a high concentration of iron. What is left of the star is a blackhole. Be careful not to get too close,” said General Zembobi.



Theories of Space and Time

BY HAREN RANJITH 6G

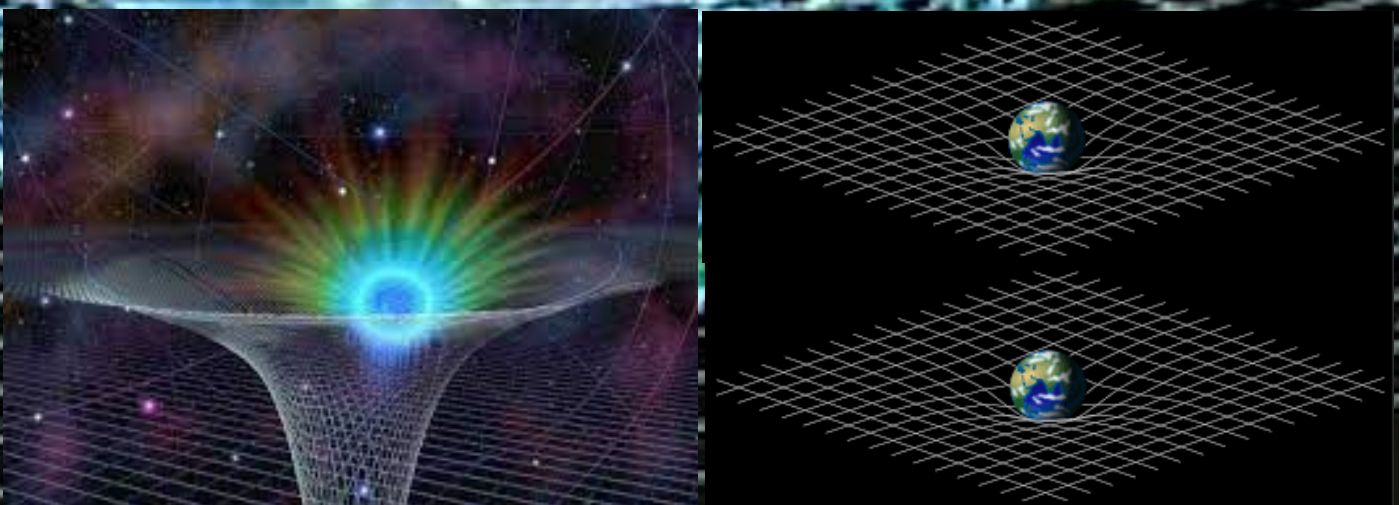
Our wonderful universe is filled with amazing things but the fundamental fabric of space and time is one of the many things we do not know much about. This article will show three theories of space and time: the general theory of relativity, Hawking's Radiation and the Hermann Minkowski theory.

General Theory of Relativity

The most famous theory you would know is the General Theory of Relativity, made by physicist, Albert Einstein, in 1915. This theory concludes that the force of gravity is formed from the curvature of the very fabrics of space and time, otherwise known as space-time. With gravity, massive objects cause massive curves in space-time, like in a black hole.

The theory also has equations for it called the gravitational field equations. This equation describes gravity getting stronger after a curve in space and time.

A larger object will have a bigger curvature and a higher gravitational force, while a smaller object will have a smaller curvature and a lower gravitational force.



These pictures shows the curvatures in space-time.

Hawking's Radiation

Theoretical physicist, Stephen Hawking, theorised that subatomic particles like protons radiate out of a black hole at a faster and faster rate until the black hole evaporates. This incredibly long process is known as Hawking's Radiation.

Hermann Minkowski Theory

This theory was made by mathematician, Hermann Minkowski in 1908. It is the first theory which concludes that space and time is connected. Minkowski used the Special Theory of Relativity (by Albert Einstein in 1905, three years earlier) and changed them.

Before then, everyone thought that space and time was separate and there was nothing that could connect them. Hence, this theory was quite important: you might even call this revolutionary.

TASK

A space spy sends a message to the command headquarters. But your squad has intercepted the message but the message is in code. So they have asked you to crack the code. You have been given clues and with this information, you should be able to do it. Codebreakers, crack the code!

20, 8, 5, 18, 5 9, 19 1 3, 21, 18, 22, 1, 20, 21, 18, 5 9, 14
20, 8, 5 6, 1, 2, 18, 9, 3 15, 6 19, 16, 1, 3, 5 1, 14, 4
20, 9, 13, 5

Clues:

1. Each number represents a letter.
2. The first letter is T and the second letter is H.
3. There is a pattern in this code.
4. Think about the order of the alphabet.

Now crack the code!

ANSWERS!

The code is 'There is a curvature in the fabric of space and time.' Good work if you got that one right! If you did, you would definitely become the commander of a codebreaking squad some day.

Before this article ends, I have got a question for you, my friends. Why is there a fabric of space and time? Why is the universe like this?

Did you know the universe was created by 2 branes colliding? It is epic how the universe is so complex!!!

THAT IS THE END OF MY ARTICLE. I HOPE YOU ENJOYED IT!

THANK YOU FOR READING!!!!!!!

Exciting Exoplanets

By Zubiya Shaik 6G

What are exoplanets?

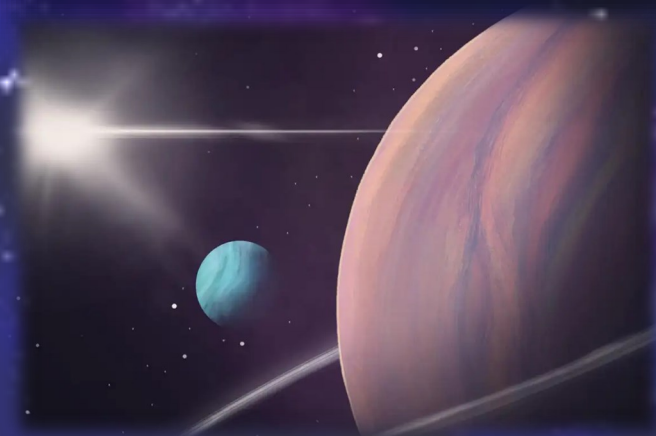
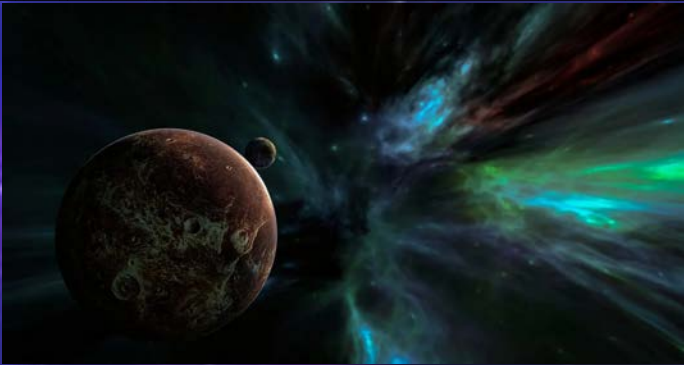
Exoplanets are planets that orbit a star which is not from our solar system. Scientists have recently confirmed that there are over 4,000 exoplanets that have been discovered by astronomers. On average, at least one planet orbits a lone star. Experts reckon that there could be about 1 trillion exoplanets in the Milky Way as a whole. Around 1 in 5 Sun-like stars have an Earth-sized planet which is thought to be habitable.

What is the closest exoplanet to Earth?

The exoplanet that is closest to the Earth is called Proxima Centauri b. It is in a habitable zone and is orbiting a red dwarf star. This planet is part of the triple star system Alpha Centauri. The planet takes 11.2 days to orbit its red dwarf star. A red dwarf star is a star that has a very low surface temperature which indicates their red appearance.

Are there any other habitable planets other than Earth?

Well, firstly, the Goldilocks Zone is an area in space where it is perfect for human settlement. Like in the tale that we all learn as kids, we are only capable in surviving in perfect conditions, not too hot or cold. An example of this is the planet Kepler-186f and was the first habitable exoplanet to be discovered by scientists and is called an "alien planet" because of this.



Fantastic Facts

On average, it is estimated that there is at least one planet for every star in the galaxy.

That means there's something in the order of billions of planets in our galaxy alone, many in Earth's size range.

Exoplanets are made up of elements similar to that of the planets in our solar system but their mixes of those elements may differ. Some planets may be dominated by water or ice, while others are dominated by iron or carbon.

Highlighted stars are known to have exoplanets orbiting them.

Most of the exoplanets discovered so far are in a relatively small region of our galaxy, the Milky Way.

Galactic Game Board

Counters



Key:

When you land on:

- ♦ Blackholes - go back to the beginning.
- ♦ Sun - go forward 3 places.
- ♦ Moon - miss a turn.
- ♦ Blank space - you are safe!



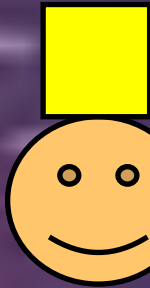
FINISHED— You've won! 64	63	62	61	60	59	58	57
49	50	51	52	53	54	55	56
48	47	46	45	44	43	42	41
33	34	35	36	37	38	39	40
32	31	30	29	28	27	26	25
17	18	19	20	21	22	23	24
16	15	14	13	12	11	10	9
START- 1	2	3	4	5	6	7	8

Fill in the blanks answers. In our solar system, there are eight planets. We live on the third closest planet. Neptune has fourteen moons. The biggest planet is Jupiter. Earth is made of rock. Uranus is made of gas. Stars - 7 stars

GIANT GAS GL[]BS

By Akshaj Mittal 5G

Hello, I hope you are having a wonderful day, I am going to tell you about the Gas Giants.



What are Gas Giants?

These are the four furthest planets in the Solar System, Jupiter, Saturn, Uranus and Neptune. These are way bigger than the Rocky Planets. These enormous planets are extremely cold, Neptune is -200°C on average!



Everyone knows that Jupiter is the biggest planet and therefore, has the highest gravitational pull but it is the only Gas Giant not to have rings.

The reason that they are called gas **giants** is because they make the Rocky Planets seem tiny. The diameter of Jupiter is 28 times that of Mercury. They are also very cold, way too cold for a person (without very special tried and tested equipment) to stand on.



Why are they called Gas Giants?



See if you can fill in the blanks.

In our _____ system, there are _____ planets. We live on the third _____ planet. Neptune has _____ moons.

The biggest planet is _____. Earth is made of _____. Uranus is made of _____.



Closest	Rock	Jupiter	Solar	Gas	Fourteen	Eight
---------	------	---------	-------	-----	----------	-------

	Jupiter	Saturn	Uranus	Neptune
Mass	1.9×10^{25} kg	0.57×10^{25} kg	87×10^{24} kg	100×10^{24} kg
Diameter	143000km	120500km	51100km	49500km
Moons	79	82	27	14
Gravity	23.1 m/s^2	9 m/s^2	8.7 m/s^2	11 m/s^2
Avg. Temp.	-110°	-140°	-195°	-200°

Fun Facts

Match the things with the planets. You can use Google!

The Great Red Spot

Discovered in 1781

Is famous for rings

Last planet before the Kuiper Belt

Most Moons

Fastest Spinning Planet

Named after Roman God of the Sea

Jupiter

Saturn

Uranus

Neptune

Jupiter	The Great Red Spot	Fastest Spinning Planet
Saturn	Is famous for rings	Most Moons
Uranus	Discovered in 1781	
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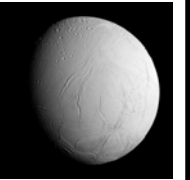
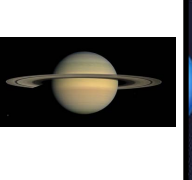
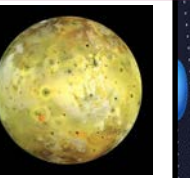
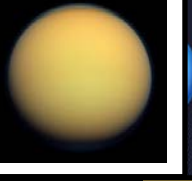
Count the stars.
Here's one! It counts! Answer at the top of page 1.

Top Trumps

For all of these, you can choose whether the highest wins or the lowest wins. Lots of the discoveries were in 1610 - probably by Galileo Galilei

Moons from different planets -

Phobos, Deimos—Mars; Io, Callisto, Ganymede, Europa—Jupiter; Titan, Dione, Enceladus—Saturn; Oberon, Titania—Uranus; Triton—Neptune

Mercury  <table><tr><td>Weight (x10²⁴ kg)</td><td>0.33</td></tr><tr><td>Diameter (km)</td><td>4879</td></tr><tr><td>Gravity (m/s²)</td><td>3.7</td></tr><tr><td>Avg. Temp (°C)</td><td>160</td></tr><tr><td>Year discovered</td><td>1631</td></tr></table>	Weight (x10 ²⁴ kg)	0.33	Diameter (km)	4879	Gravity (m/s ²)	3.7	Avg. Temp (°C)	160	Year discovered	1631	Venus  <table><tr><td>Weight (x10²⁴ kg)</td><td>4.87</td></tr><tr><td>Diameter (km)</td><td>12104</td></tr><tr><td>Gravity (m/s²)</td><td>8.9</td></tr><tr><td>Avg. Temp (°C)</td><td>480</td></tr><tr><td>Year discovered</td><td>1610</td></tr></table>	Weight (x10 ²⁴ kg)	4.87	Diameter (km)	12104	Gravity (m/s ²)	8.9	Avg. Temp (°C)	480	Year discovered	1610	Earth  <table><tr><td>Weight (x10²⁴ kg)</td><td>5.97</td></tr><tr><td>Diameter (km)</td><td>12756</td></tr><tr><td>Gravity (m/s²)</td><td>9.8</td></tr><tr><td>Avg. Temp (°C)</td><td>15</td></tr><tr><td>Year discovered</td><td>2M BC</td></tr></table>	Weight (x10 ²⁴ kg)	5.97	Diameter (km)	12756	Gravity (m/s ²)	9.8	Avg. Temp (°C)	15	Year discovered	2M BC	Earth's Moon  <table><tr><td>Weight (x10²⁴ kg)</td><td>0.073</td></tr><tr><td>Diameter (km)</td><td>3475</td></tr><tr><td>Gravity (m/s²)</td><td>1.6</td></tr><tr><td>Avg. Temp (°C)</td><td>-50</td></tr><tr><td>Year discovered</td><td>1609</td></tr></table>	Weight (x10 ²⁴ kg)	0.073	Diameter (km)	3475	Gravity (m/s ²)	1.6	Avg. Temp (°C)	-50	Year discovered	1609	Mars  <table><tr><td>Weight (x10²⁴ kg)</td><td>0.642</td></tr><tr><td>Diameter (km)</td><td>6692</td></tr><tr><td>Gravity (m/s²)</td><td>3.7</td></tr><tr><td>Avg. Temp (°C)</td><td>-65</td></tr><tr><td>Year discovered</td><td>1610</td></tr></table>	Weight (x10 ²⁴ kg)	0.642	Diameter (km)	6692	Gravity (m/s ²)	3.7	Avg. Temp (°C)	-65	Year discovered	1610
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Titan  <table><tr><td>Weight (x10²⁴ kg)</td><td>0.134</td></tr><tr><td>Diameter (km)</td><td>5150</td></tr><tr><td>Gravity (m/s²)</td><td>1.4</td></tr><tr><td>Avg. Temp (°C)</td><td>-179</td></tr><tr><td>Year discovered</td><td>1655</td></tr></table>	Weight (x10 ²⁴ kg)	0.134	Diameter (km)	5150	Gravity (m/s ²)	1.4	Avg. Temp (°C)	-179	Year discovered	1655	Eris  <table><tr><td>Weight (x10²⁴ kg)</td><td>0.016</td></tr><tr><td>Diameter (km)</td><td>2326</td></tr><tr><td>Gravity (m/s²)</td><td>0.82</td></tr><tr><td>Avg. Temp (°C)</td><td>-230</td></tr><tr><td>Year discovered</td><td>2005</td></tr></table>	Weight (x10 ²⁴ kg)	0.016	Diameter (km)	2326	Gravity (m/s ²)	0.82	Avg. Temp (°C)	-230	Year discovered	2005	Pluto  <table><tr><td>Weight (x10²⁴ kg)</td><td>0.013</td></tr><tr><td>Diameter (km)</td><td>2377</td></tr><tr><td>Gravity (m/s²)</td><td>0.62</td></tr><tr><td>Avg. Temp (°C)</td><td>-232</td></tr><tr><td>Year discovered</td><td>1930</td></tr></table>	Weight (x10 ²⁴ kg)	0.013	Diameter (km)	2377	Gravity (m/s ²)	0.62	Avg. Temp (°C)	-232	Year discovered	1930	Oberon  <table><tr><td>Weight (x10²⁴ kg)</td><td>0.003</td></tr><tr><td>Diameter (km)</td><td>1523</td></tr><tr><td>Gravity (m/s²)</td><td>0.35</td></tr><tr><td>Avg. Temp (°C)</td><td>-198</td></tr><tr><td>Year discovered</td><td>1787</td></tr></table>	Weight (x10 ²⁴ kg)	0.003	Diameter (km)	1523	Gravity (m/s ²)	0.35	Avg. Temp (°C)	-198	Year discovered	1787	Titania  <table><tr><td>Weight (x10²⁴ kg)</td><td>0.003</td></tr><tr><td>Diameter (km)</td><td>1577</td></tr><tr><td>Gravity (m/s²)</td><td>0.36</td></tr><tr><td>Avg. Temp (°C)</td><td>-203</td></tr><tr><td>Year discovered</td><td>1787</td></tr></table>	Weight (x10 ²⁴ kg)	0.003	Diameter (km)	1577	Gravity (m/s ²)	0.36	Avg. Temp (°C)	-203	Year discovered	1787
Weight (x10 ²⁴ kg)	0.134																																																					
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