OUR NEIGHBOURS and US: THE 8 PLANETS.

Here you are some great facts to kick-off an introduction to planets and the solar system. Plus, to fuel your imagination even further, I've made a couple of exciting space and planets activities for you. That way you can create your own planets (once they know a bit more about the real ones) and then get creative by inventing your own aliens.

Activity number 1: Introduction

Next to the Earth there are seven other planets in our solar system, as well as many dwarf planets, moons, and of course, the Sun.

Our solar system is in a galaxy called the Milky Way. It is estimated that there are approximately 30 billion solar systems in the Milky Way. We think that there are 100 billion galaxies in the universe. This means that the universe is much bigger than we can even imagine!

The solar system:

There are eight planets in the Solar System that all orbit the sun. Each of the planets are different: Some have moons, some have rings, some are made of rock and some are made of gas. Read on for fascinating facts about each of the planets starting with the one closest to the sun, moving outwards.

MERCURY - THE "MINI" PLANET

Mercury is the smallest planet and it is closest to the sun. Think of "mini-Mercury" as a memory hook.

It takes 59 Earth days to rotate once, and 88 Earth days to orbit the sun.

This means that there are fewer than two days in one year on Mercury!

So, the days are so long that it's just impossible stay awake for a whole Mercury Day.

The planet’s closeness to the Sun makes Mercury’s orbit shorter than those of any other planet in the Solar System. One year in Mercury is only about 88 Earth days. That is less than three months.

Mercury rotates very slowly around its axis. One Mercurial day takes almost 59 Earth days. I don’t know about you but I would be angry if I had to wait almost two months to go to bed.

Due to its small size, low gravity and closeness to the Sun, Mercury isn’t able to keep a Moon in place. The only other planet in the Solar System without moons is Venus.

VENUS

VENUS - THE "ODD-ONE-OUT-SPINNER" PLANET

Venus is sometimes called Earth’s twin because it’s similar in size and structure, but the planets are very different in other ways.

Venus spins in the opposite direction to all of the other planets in the solar system.

It moves in a slow spinning way: To complete one rotation (day) it takes 243 Earth-days.

Its surface is covered in volcanoes and it has more volcanoes than any other planet in the solar system. Its atmosphere is toxic for humans.

Even though the Venus has some similarities to the Earth, you will surely not want to live on the Venus: It's surface temperature can get hotter than 450 degrees Cº. That's just a tiny bit too hot for humans.

EARTH - OUR BELOVED BLUE PLANET

Our home planet!

Earth is the only planet in our solar system that humans can live on.

Did you know that three-quarters of the Earth is covered with water?

We have one moon that is very important in controlling the tides of the sea.

The Earth rotates once every 23 hours, 56 minutes (and a few seconds).

The Earth takes about 365 days to orbit once around the sun.

MARS

MARS - "MAGICAL MARS" - RED COLOURED PLANET

Mars is known as the 'red planet' because of its reddish appearance evolving from a rusting process of the minerals the surface is covered with.

The tallest mountain in the solar system, *Olympus Mons*, is on Mars and it is 21km tall.

It can get really cold on the Mars: Temperature drops of up to -150 degrees C makes the Mars impossible to live for humans.

A year on Mars is almost twice as long as a year on Earth.

On Mars you would experience 62.5% less gravity than you are used to on Earth.

JUPITER - THE "JUMBO" PLANET

Jupiter is the largest planet in our solar system and it is so big that you could fit all of the other planets inside it!

Over 300 mother Earths would fit into Jupiter alone.

Jupiter is a gas planet consisting mainly of hydrogen and helium. This is actually similar to the structure of the sun.

Jupiter has 62 moons and one of them, Ganymede, is the largest moon in the solar system.

Jupiter, being the biggest planet, gets its name from the king of the ancient Roman gods.

Jupiter has the shortest day in the solar system. One day on Jupiter takes only about 10 hours (the time it takes for Jupiter to rotate or spin around once).

Jupiter makes a complete orbit around the Sun (a year in Jovian time) in about 12 Earth years (4,333 Earth days).

With four large moons and many smaller moons, Jupiter forms a kind of miniature solar system. Jupiter has 80 moons.

SATURN - THE WINDY FRISBEE PLANET

Saturn is the second biggest planet in the solar system, but it is also the lightest as it is made almost entirely of gas (also hydrogen and helium).

Saturn is very well known for its rings that circle around it.

The rings are made up of chunks of rock and ice.

Within Saturn's atmosphere we can find the strongest winds of all planets: It can get as fast as 1,800 km/h. Imagine yourself flying a kite on Saturn - it will be blown away like a turbojet aircraft.

Saturn is huge. It is the second largest planet in our Solar System. Jupiter is the only planet that is bigger.

Saturn goes around the Sun very slowly. A year on Saturn is more than 29 Earth years.

Saturn spins on its axis very fast. A day on Saturn is 10 hours and 14 minutes (Earth time).

The day Saturday was named after Saturn.

URANUS - THE ULTRA-COLD PLANET

Uranus is the coldest planet in the solar system with a minimum temperature of -224°C.

Together with Neptune it belongs to the “Ice Giants”.

Unlike all of the other planets, Uranus spins on its own side!

Uranus has 27 known moons.

Because of the sideways rotation Uranus' north pole has a pitchy-dark night time of 21 years then 42 years of day and night times followed by 21 years of daytime.

One day on Uranus takes about 17 hours (the time it takes for Uranus to rotate or spin once). And Uranus makes a complete orbit around the Sun (a year in Uranian time) in about 84 Earth years (30,687 Earth days).

Who would ever survive a dark Uranus winter?

NEPTUNE - THE NO-WHERE-NEAR-CLOSE PLANET

Neptune is the planet that is furthest away from the sun and consist of icy materials.

One year in Neptune is 165 Earth years!

Neptune is known for its bright blue colour and this is the reason why it was named after the Roman god of the sea: Neptune.

Short day, long year:

- Neptune takes about 16 hours to rotate once (a Neptune day).
- Neptune takes about 165 Earth years to orbit the sun (a Neptunian year)

Neptune has 14 known moons which are named after sea gods and nymphs in Greek mythology.

Activity number 2:

INVENT YOUR OWN PLANET OR SOLAR SYSTEM.

Now you know some fascinating facts about the planets in our solar system, it's time to invent your own planet! Just grab a piece of paper, discuss some possible answers to these questions, and then design your planet.

2.1) Debate the following…BIG QUESTIONS:

- What shape will your planet be?
- What colours will your planet be?
- Will there be mountains and volcanoes or will it be very flat?
- Will it have any moons?
- Will any creatures live on your planet?
- And most importantly: what will your planet be called?

2.2) When you've decided on answers to these questions, draw the planet you've invented!

Activity number: 3

HANDPRINT ALIEN CRAFT

Some people believe that aliens could live on other planets. Do aliens live on the planet you've invented? If they do, what do they look like?

3.1) Draw your alien in a sheet of paper. Use pencil colours if you need.

3.2) Describe it. You can start saying, for example: "It has … legs, … arms, … eyes; its name is…, its hair is…, it doesn't have …, it likes/enjoys singing, its favourite food is …, etc.

English in Use.

Resources:

https://solarsystem.nasa.gov/planets/uranus/in-depth/#:~:text=The%20ice%20giant%20is%20surrounded,Sun%20like%20a%20rolling%20ball.

https://www.rocketstem.org/2020/03/26/mercury-facts-questions-history/

https://solarsystem.nasa.gov/planets/neptune/overview/

https://www.toucanbox.com/activities/teaching-kids-planets)

https://solarsystem.nasa.gov/planets/venus/overview/#:~:text=Venus%20is%20the%20second%20planet%20from%20the%20Sun%20and%20Earth%27s,has%20clouds%20of%20sulfuric%20acid.

https://mars.nasa.gov/all-about-mars/facts/

https://www.nasa.gov/audience/forstudents/k-4/home/F_Saturn_Fun_Facts_K-4.html

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