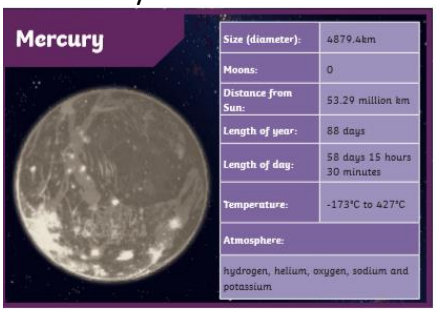
Year 5 Home Learning (Sheet 10)

SPACE! It's the summer term and your topic was going to be SPACE so that's what we are going to learn about for the next 4 weeks! I have provided links and information pages to help you in your home learning tasks. As always, keep hold of any of your fantastic work and I will look forward to seeing it when we are back in school.

Maths		Look at the fact sheet and answer the questions about the planets in our solar system.	

Mercury



Size (diameter):	4879.4km
Moons:	0
Distance from Sun:	53.29 million km
Length of year:	88 days
Length of day:	58 days 15 hours 30 minutes
Temperature:	-173°C to 427°C
Atmosphere:	
hydrogen, helium, oxygen, sodium and potassium	

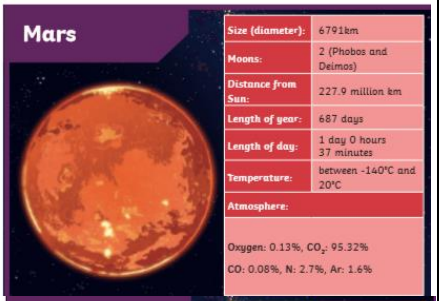
Venus

Size (diameter):	12 104km
Moons:	0
Distance from Sun:	107.48 million km
Length of year:	225 days
Length of day:	116 days 18 hours 0 minutes
Temperature:	around 470°C
Atmosphere:	
carbon dioxide (96.5%), nitrogen and sulphur dioxide	

Earth

Size (diameter):	12 742km
Moons:	1
Distance from Sun:	151.75 million km
Length of year:	365 days
Length of day:	24 hours
Temperature:	between -88°C and 58°C
Atmosphere:	
Nitrogen	78.08%
Oxygen	20.95%
Argon	0.93%
Carbon dioxide	0.04%

Mars



Size (diameter):	6791km
Moons:	2 (Phobos and Deimos)
Distance from Sun:	227.9 million km
Length of year:	687 days
Length of day:	1 day 0 hours 37 minutes
Temperature:	between -140°C and 20°C
Atmosphere:	
Oxygen: 0.13%, CO_2: 95.32%	
CO: 0.08%, N: 2.7%, Ar: 1.6%	

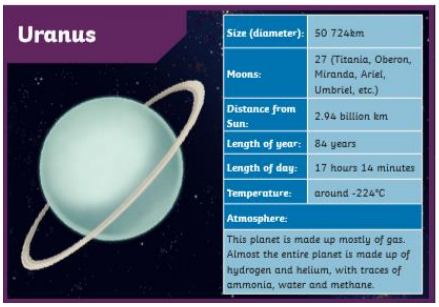
Jupiter

Size (diameter):	139 822km
Moons:	79
Distance from Sun:	778.89 million km
Length of year:	12 years
Length of day:	9 hours 56 minutes
Temperature:	about -145°C
Atmosphere:	
This planet is made up mostly of gas. Almost the entire planet is made up of hydrogen and helium, with traces of ammonia, sulphur and water vapour.	

Saturn

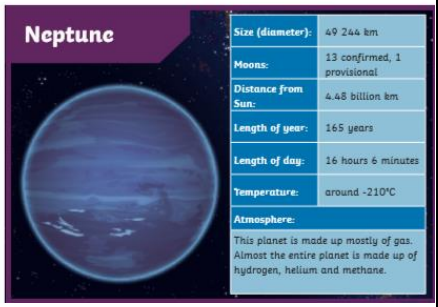
Size (diameter):	116 464km
Moons:	82
Distance from Sun:	1.5 billion km
Length of year:	29 years
Length of day:	10 hours 42 minutes
Temperature:	between -185°C and -122°C
Atmosphere:	
This planet is made up mostly of gas. Almost the entire planet is made up of hydrogen (~75%), helium (~25%) and traces of methane and water.	

Uranus



Size (diameter):	50 724km
Moons:	27 (Titania, Oberon, Miranda, Ariel, Umbriel, etc.)
Distance from Sun:	2.94 billion km
Length of year:	84 years
Length of day:	17 hours 14 minutes
Temperature:	around -224°C
Atmosphere:	
This planet is made up mostly of gas. Almost the entire planet is made up of hydrogen and helium, with traces of ammonia, water and methane.	

Neptune



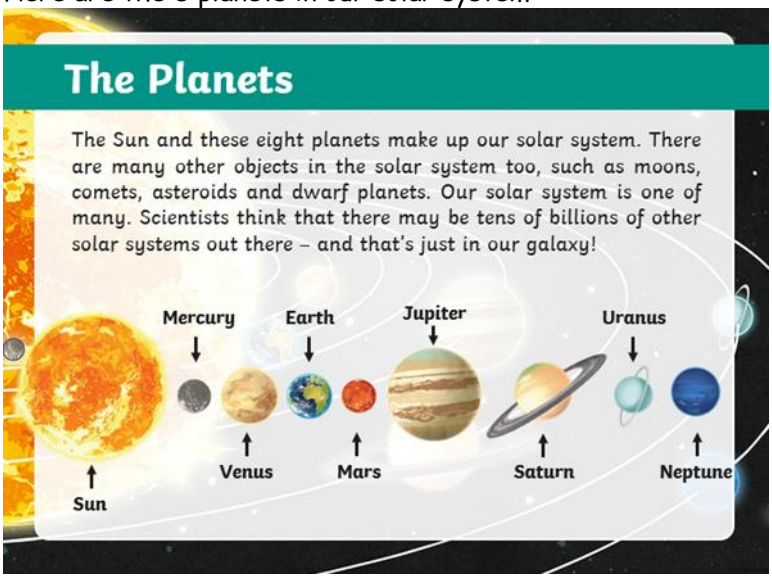
Size (diameter):	49 244 km
Moons:	13 confirmed, 1 provisional
Distance from Sun:	4.48 billion km
Length of year:	165 years
Length of day:	16 hours 6 minutes
Temperature:	around -210°C
Atmosphere:	
This planet is made up mostly of gas. Almost the entire planet is made up of hydrogen, helium and methane.	

1)What is the total size of the 4 planets furthest away from the sun added together?

2) Which planet has the longest year? (A year is how long the planet takes to orbit the sun.)

3)Add all the 'lengths of year' on each planet together. What is the total?

4) Which planet is closest to the Sun?

		5) Add the 'Distance from the sun' for the 4 planets closest to the sun. What is your total? 6) Do **all** the planets get colder as they move further away from the sun? 7) Do **all** the planets closer to the sun have a faster orbit of the sun? 8) Which planet has the shortest day? (A day is the time a planet takes to do one full spin.) 9) Find the difference between the biggest and smallest planet. 10) Which is your favourite planet and why?	
Science	I know the names of the planets in order, and about life on Mars.	Here are the 8 planets in our solar system:  Follow the link to watch a video to learn more about each one. **Create** a mnemonic to help you learn the names of the planets in order from the sun. Look at my example if you need some help.  **Research** as much as you can about the planet Mars (use the link if you are able to). See if you can find the answers to these questions during your research. - Why are we trying to travel to Mars when Venus is closer? - Can people ever live on Mars? - What do we know about Mars so far? *Read the information page below if you are not able to research these questions using a book or computer.*	https://www.bbc.co.uk/bitesize/topics/zdrrd2p/articles/ztsqj6f https://www.youtube.com/watch?v=Qd6nLM2QlWw https://www.planetsforkids.org/planet-mars.html

Mars: The Red Planet

Mars is the fourth furthest planet from the Sun and the second smallest planet in our solar system. Named after the Roman god of war, Mars is often described as 'the Red Planet' because of its red appearance. The atmosphere on Mars is made up of mainly **carbon dioxide**, meaning that it is not breathable.

A "true colour" photograph of Mars taken by the OSIRIS instrument on the European Space Agency (ESA) Rosetta spacecraft in February 2007.

Missions to Mars

It is important to launch a mission to Mars at the right time because Earth and Mars are always moving. Scientists have to calculate the distance between the two planets at any one time and to prepare resources for that distance of travel.

Why Mars?

Mars is not the closest planet to Earth – Venus is. The closest possible distance between Earth and Venus is approximately 38 million kilometres, while the closest distance between Earth and Mars is around 55 million kilometres. Why, then, are most of Earth's exploration efforts directed at the Red Planet?

Venus, Earth's smaller sister, is blisteringly hot and has a thick atmosphere which could melt a block of lead as easily as an ice cream on Earth. Mars, on the other hand, is smaller and much colder.

Mars Quick Facts	
Size:	6,779km
Moons:	2 (Phobos and Deimos)
Length of year:	687 days (1.9 Earth years)
Length of day:	24 hours 37 minutes
Temperature:	between -140°C and 30°C
Atmosphere:	• 95.9% carbon dioxide • 0.14% oxygen • 3.96% other (carbon monoxide, nitrogen, argon, water vapour)

It is the most **habitable** planet next to Earth because:

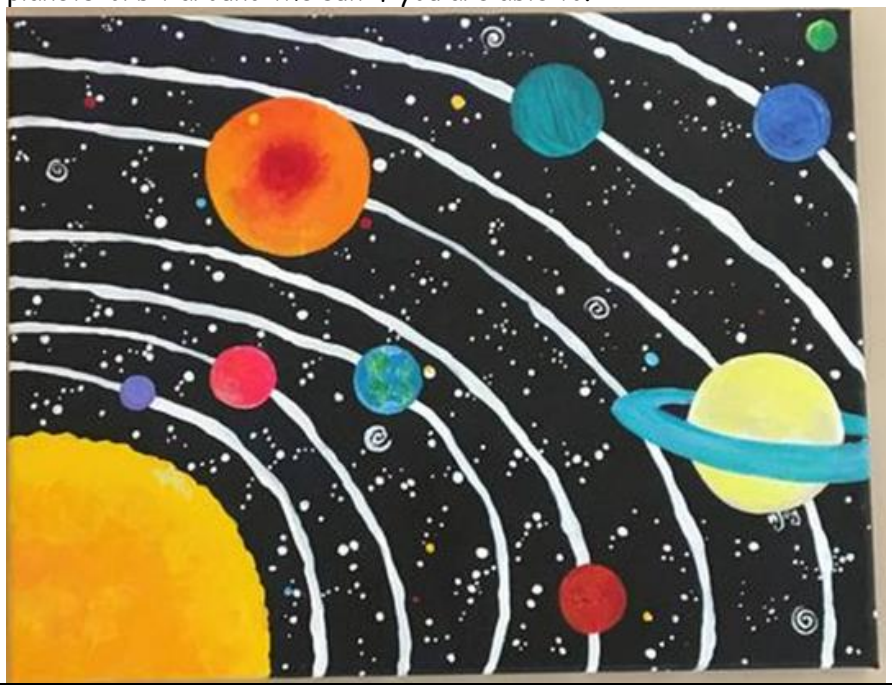
- its soil contains traces of water;
- it gets enough sunlight to use solar power;
- gravity is 38% as strong as on Earth, which, it is believed, humans could adapt to;
- the atmosphere somewhat protects from the Sun's **radiation**;
- Mars' day, called a 'sol', is only a little longer than Earth's.

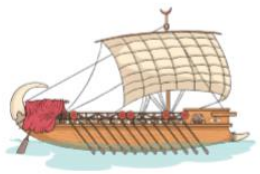
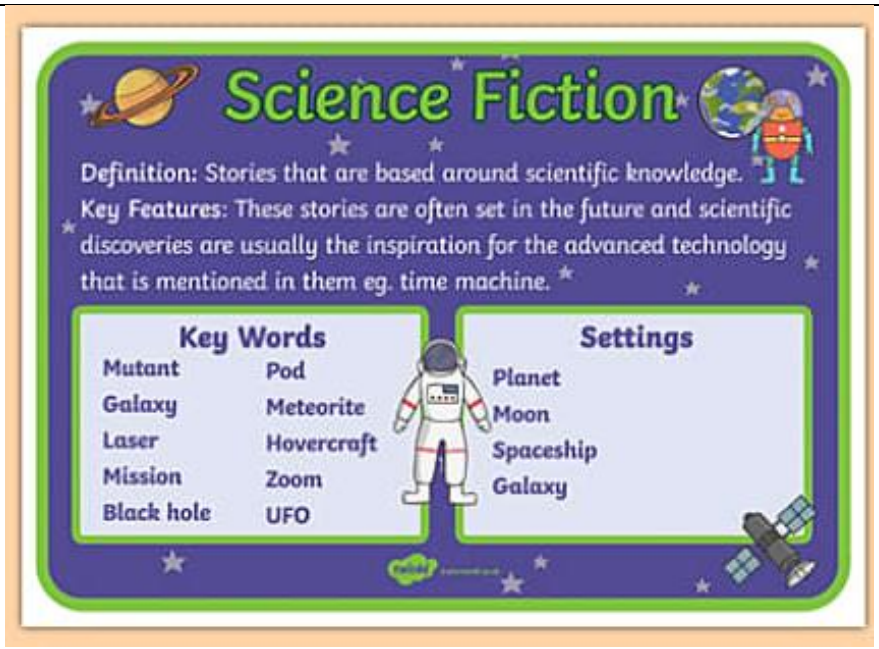
The Mars Rover

The Curiosity rover is a robotic car which is currently exploring the surface of the planet. It is nuclear-powered and the fourth rover sent to Mars in 16 years. It was launched on 26th November 2011 and landed on 6th August 2012. Curiosity uses the most advanced scientific equipment ever used on Mars.

The main goals of the mission, which forms part of NASA's Mars Science Laboratory, are to:

- study Martian climate and **geology**;
- search for water;
- find out whether Mars could have ever supported life.

Art	I know that there are 8 planets in the solar system and they orbit the sun	As you know, there are 8 planets in our solar system. The planets orbit the sun on their own curved path because the sun is so big it has a huge gravitational pull. Use the example below to create your own piece of art to show all the planets in the correct order and their orbiting path around the sun. Use the link to find out more about the planets' orbit around the sun if you are able to. 	https://www.bbc.co.uk/bitesize/topics/zdrrd2p/articles/ztsqj6f
History	Is Earth a spherical body?	A long time ago, it was believed the Earth was flat. New evidence has told us that this is not true and that the world is actually a spehircal body (round shape like a football). How many things in your house can you find that are also a spehrical shape? Watch the video to find out more about the Flat Earth Theory and why it is belived to not be true. Read the informtaion below if you do not have access to the link. **Flat Earth** From the earliest of times to around the time of the Ancient Greek philosophers, the idea of a flat Earth prevailed: • Observations of the Earth by humans as it looked to them on the ground. We simply do not have the capacity to see the curvature of the Earth. • As we move we perceive the Earth as flat a result of the evidence of our senses (i.e. at no point do we have to change our movements due to the curvature of the Earth). • Theories and ideas are based on our imagination and evidence we perceive. The evidence that we have affects our ability to imagine and create theories. • Ideas and information were shared by people who travelled however to accumulate this evidence and create a theory based on it was a much slower process than it would be today. This also accounts for why – for example, the Chinese (who chose to isolate themselves from outside influences up until the 17th Century) did not change their ideas about the shape of the Earth until much later than other parts of the world. The important point that children need to understand is that it was lack of evidence not lack of intelligence on the part of humans thousands of years ago that led to this idea. While it seems silly to us now, our ideas are based on evidence accumulated for over two thousand years. Use the evidence cards below and your own research, to answer the following question: Do you think the Earth is flat or round and why do you think this?	https://www.bbc.co.uk/bitesize/clips/z8vs34j

		 Sailors made observations about the position of the Sun and stars.  Planes have flown around the world and never seen the edge.  Shadows cast by the Earth on the moon.  Ships have sailed all the way around the world.  Observations of ships sailing across the horizon.  Pictures of Earth viewed from space.	
English	I can write a science-fiction story.	 Write your own science fiction story. Imagine you are in the future - thousands of years in the future! What does Earth look like? What technology do you use? What is school like? What are the buildings like? What do you wear? What do you eat? How do you travel? What do you do for fun? Imagine it is possible to live on Mars in this futuristic time. Write a story all about what it is like to travel to Mars and live there thousands of years in the future. Include a detailed description of what it is like to live on Earth too.	


Explore
MARS
SPACE EXPLORATION TECHNOLOGIES