Planet facts

Outstanding Science Year 5 - Earth and space - OS5D002

National Curriculum Statutory Requirements
5D1 - describe the movement of the Earth, and other planets, relative to the Sun in the solar system;

Learning Objective
I can research and compare the different planets in the solar system.

Me: Teacher:

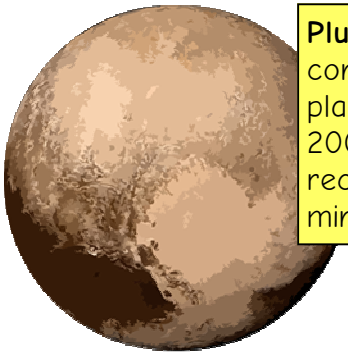
What is a planet?

Our solar system is made up of a star, the Sun, and countless different bodies which move around it. These bodies include planets, moons, asteroids, lumps of ice, rocks and dust.

There is some disagreement over which of these bodies should be considered **planets**. The **International Astronomical Union** (IAU), a group of astronomers, has come up with some tests to decide if a body is a planet.

There are eight bodies in the solar system that pass these tests - **Mercury**, **Venus**, **Earth**, **Mars**, **Jupiter**, **Saturn**, **Uranus** and **Neptune**. These are the eight **planets**.

There are also several smaller planets which only pass some of the tests, such as **Ceres**, **Pluto**, **Eris** and **Sedna**, We call these objects **dwarf planets**.



Pluto was considered to be a planet up until 2006, when it was reclassified as a minor planet.

Networking activity

Your teacher will give you one of four different fact sheets with some information missing. Go around your classroom and ask other children if they have the information you need. Try and use scientific language, such as 'How far away is Jupiter from the Sun?' Some information about the Earth is missing from all sheets...

Glossary

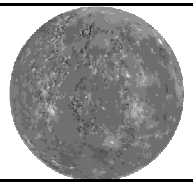
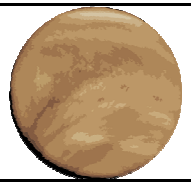
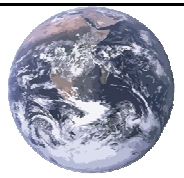
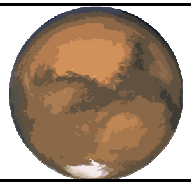
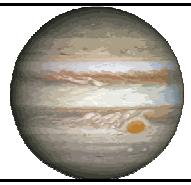
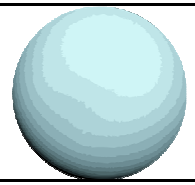
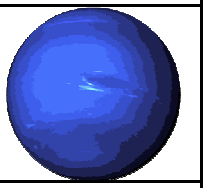
Terrestrial planet - a planet made mostly of rocks and metals
Gas giant - a giant planet made mostly of hydrogen and helium
Ice giant - a giant planet made mostly of heavier materials than hydrogen and helium, but not rocks and metals
Moon - an object which directly orbits a planet
Septillion - 1 with 24 zeroes following it. 1,000,000,000,000,000,000,000,000.
m/s^2 - Metres per second squared. This is a measure of the acceleration experienced by a nearby object due to the planet's gravity.

Discussion

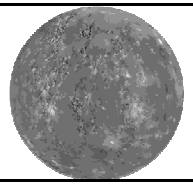
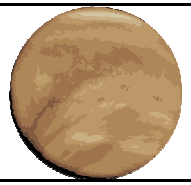
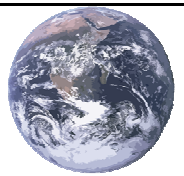
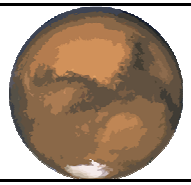
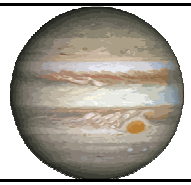
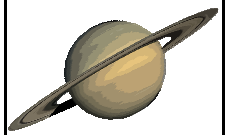
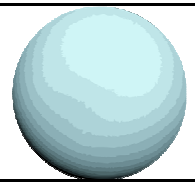
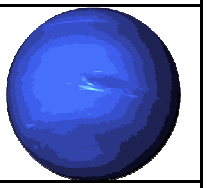
Can you place the planets in order of how many moons they have? Can you think of other ways of ordering the planets? Can you work out the volume of each of the planets if you know their diameter? Ask your teacher for help!

Outstanding Science

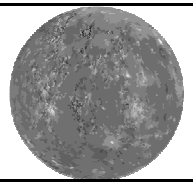
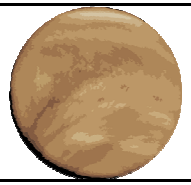
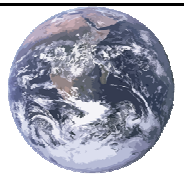
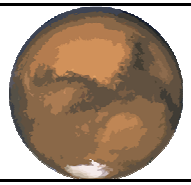
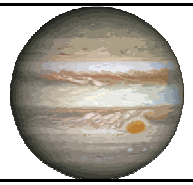
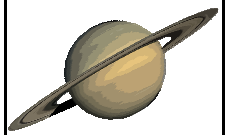
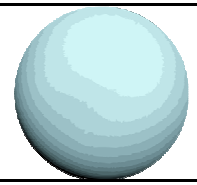
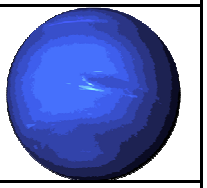
The planets in our solar system (Master Sheet)

	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
								
Type of planet	Terrestrial	Terrestrial	Terrestrial	Terrestrial	Gas giant	Gas giant	Ice giant	Ice giant
Mean diameter (km)	4879	12,104	12,756	6792	142,984	120,536	51,118	49,528
Distance from Sun (millions of km)	57.9	108.2	149.6	227.9	778.6	1433.5	2872.5	4495.1
Number of moons	0	0	1	2	67	62	27	14
Surface gravity (m/s^2)	3.7	8.9	9.8	3.7	23.1	9	8.7	11
Mass (septillions of kg)	0.33	4.87	5.97	0.642	1898	568	86.8	102
Length of day (Earth hours)	4222.6	2802	24	24.7	9.9	10.7	17.2	16.1
Length of year (Earth days)	88	224.7	365.2	687	4331	10,747	30,589	59,800
Mean temperature (°C)	167	464	15	-65	-110	-140	-195	-200

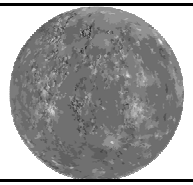
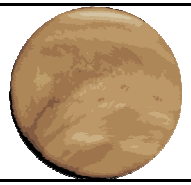
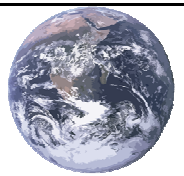
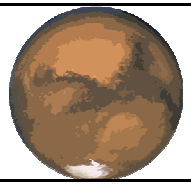
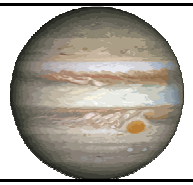
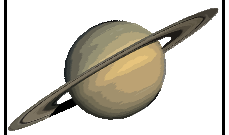
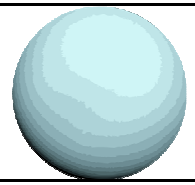
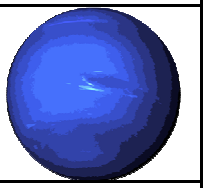
The planets in our solar system (Sheet A)

	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
								
Type of planet	Terrestrial							
Mean diameter (km)			12,756			120,536		
Distance from Sun (millions of km)					778.6			
Number of moons		0					27	
Surface gravity (m/s^2)			9.8					11
Mass (septillions of kg)	0.33			0.642				
Length of day (Earth hours)				24.7	9.9	10.7		16.1
Length of year (Earth days)								
Mean temperature (°C)		464		-65				

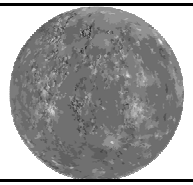
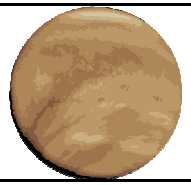
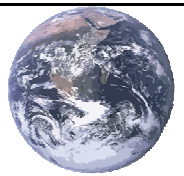
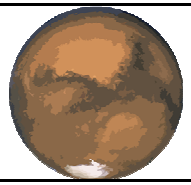
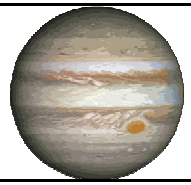
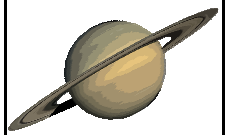
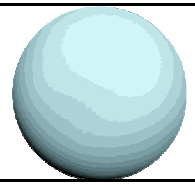
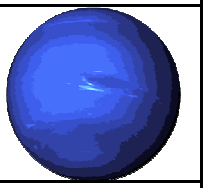
The planets in our solar system (Sheet B)

	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
								
Type of planet		Terrestrial			Gas giant			
Mean diameter (km)					142,984			49,528
Distance from Sun (millions of km)			149.6					
Number of moons				2				
Surface gravity (m/s^2)		8.9			23.1			
Mass (septillions of kg)							86.8	
Length of day (Earth hours)							17.2	
Length of year (Earth days)		224.7		687				59,800
Mean temperature (°C)	167					-140		-200

The planets in our solar system (Sheet C)

	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
								
Type of planet				Terrestrial				Ice giant
Mean diameter (km)		12,104					51,118	
Distance from Sun (millions of km)	57.9							4495.1
Number of moons						62		
Surface gravity (m/s^2)	3.7							
Mass (septillions of kg)					1898			102
Length of day (Earth hours)		2802						
Length of year (Earth days)	88				4331	10,747	30,589	59,800
Mean temperature (°C)			15		-110		-195	

The planets in our solar system (Sheet D)

	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
								
Type of planet						Gas giant	Ice giant	
Mean diameter (km)	4879			6792				
Distance from Sun (millions of km)		108.2		227.9		1433.5	2872.5	
Number of moons					67			14
Surface gravity (m/s^2)				3.7		9	8.7	
Mass (septillions of kg)		4.87	5.97			568		
Length of day (Earth hours)	4222.6							
Length of year (Earth days)								
Mean temperature (°C)								