

# Year 5 Violet Autumn 2: Is There Life on Mars?

School value: Resilience - We don't retaliate and show real strength of character

Topic Sticky Knowledge	
Science	Earth rotates (spins) on its axis. It does a full rotation once every 24 hours. At the same time that Earth is rotating, it is also orbiting the sun. It takes a little more than 365 days to orbit the sun.
	Earth, is the third planet from the sun and the only world known to support an atmosphere with free oxygen, oceans of liquid water on the surface and life.
	The moon orbits Earth in an oval-shaped path whilst spinning on its axis. At different times in a month, the moon appears to be different shapes. This is because as the moon rotates round earth, the sun lights up different parts of it.
	There are 8 planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Pluto used to be considered a planet but was reclassified as a dwarf planet.
	Mercury, Venus, Earth and Mars are rocky planets – they are mostly made up of metal and rock. Jupiter, Saturn, Uranus and Neptune are mostly made up of gases.
	Years ago, people believed that planets moved round the earth. This is called the 'Geocentric Model'.
	The work and ideas of many astronomers developed the idea of the heliocentric model. Galileo's work on gravity allowed astronomers to understand how planets stayed in orbit.
	Water resistance and air resistance are forms of friction. Friction is sometimes helpful and sometimes unhelpful. For example, air resistance is helpful as it stops a skydiver hitting the ground at high speed. Friction on a bike chain can make the bike harder to pedal so it is unhelpful.
	Pulleys can be used to make a small force lift a heavier load. The more wheels in a pulley, the less force is needed to lift a weight. Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.
	Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.
Geography	On a world map, each 15 degrees of longitude is equivalent to a difference in time of one hour.
	Daytime occurs when the side of Earth is facing towards the sun. Night occurs when the side of Earth is facing away from the sun.

Topic Vocabulary		
Science	Astronomer	Someone who studies or is an expert in astronomy (space science).
	Spherical Body	Astronomical objects shaped like spheres. The moon and earth are spherical bodies.
	Orbit	To move in a regular, repeating curved path around another object.
	Axis	An imaginary line that a body rotates around.
	Gravity	A pulling force exerted by the earth. It is the earth's gravitational pull which keeps us on the ground.
	Friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other.
	Water resistance	A type of friction caused by water pushing against any moving object.
	Air resistance	A type of friction caused by air pushing against any moving object.
Geography	Time Zone	A region that uses the same time. There are 24 time zones in the world, demarked by meridians at 15-degree intervals, an hour apart.
	Prime Meridian	The imaginary line that divides the earth into the eastern and western hemisphere. It is the basis for the world's time zones.
	International Date Line	An imaginary line on the surface of the Earth, going from north to south in the Pacific Ocean. The date becomes one day later as one travels across it in western direction, and one day earlier as one travels across it in eastern direction.
Art	Gradient	Different grades of sketching pencil describe the tone of line that it will produce depending on softness.
	Value	Value is the lightness or darkness of a tone. Every colour is on a value scale of white to black. Sometimes value is called tone.

## Year 5 Violet Autumn 2: Is There Life on Mars?

School value: Resilience - We don't retaliate and show real strength of character

Stand-Alone Sticky Knowledge	
RE	In the Bible there are records of events which had been written down, although these probably did not happen at the time of them being written – they would have been told and retold before being recorded in writing. This can mean some parts of the Bible have been written from different viewpoints with slightly different events.
	There are different types of truth e.g. historical, scientific, personal. There are different accounts of the Christmas story in the Bible according to different people.
	Some people think December is not the month in which Jesus was born for different reasons. They suggest as the sheep were in the fields, the weather would have been warmer and perhaps it took place in spring.
	The main points of the story are agreed on by the writers despite there being different parts emphasised in their versions.
Music	Bossa Nova originated in South America. It is like the samba, but has more jazz-like improvisations.
	Swing became popular in the 1940s. Jazz music had always been a form of entertainment more for listening to than dancing. In the 1920s, people wanted to dance, so small Jazz bands took on more instrumentalists and became known as big bands or Swing bands.
Computing	Just as 2-D drawings can be created on the computer by placing and combining simple shapes (points, lines, curves and polygons), 3-D virtual scenes can be created using surfaces, cuboids and ellipsoids.
	In the Renaissance, artists discovered the rules of perspective, allowing them to realistically represent 3-D scenes on 2-D canvas. These rules can be implemented in computer software, allowing a virtual 3-D scene to be realistically rendered on a computer scene.

Stand-Alone Vocabulary		
RE	Advent	The period beginning on the 4 <sup>th</sup> Sunday before Christmas. Literal translation is 'coming' so this is a time of preparation.
	Incarnation	Christian belief that God took human form in Jesus.
	Gospel	The record of Jesus Christ's life and teaching in the first four books of the New Testament.
Music	Appraising	Listening very carefully.
	Syncopation	Music with lots of rhythmic variety, often quite difficult. The strong beats occur in unexpected places.
	Riff	A short, repeated phrase, often played on a lead instrument such as guitar, piano or saxophone.
	Hook	A short, catchy phrase from a song that we can't stop singing.
	Solo	Someone singing or playing a section of a song alone.
Computing	Computer aided design (CAD)	Using computer software to help design real-world artefacts, from engineering components to buildings
	Photorealistic	An image indistinguishable (or nearly) from a digital photograph.
French	Tu joues...?	Do you play...
	Je joues du Saxophone /piano/violon	I play the saxophone/ piano/violin
	Je joue de la guitare/ clarinette/ batterie	I play the guitar/clarinet/drums
	C'est genial/nul	It's brilliant/rubbish