



Journey through space, the final frontier. Navigate beyond the Sun, the magnificent, blazing star at the centre of our Solar System. Investigate the eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Take a look at the Moon, a celestial body that orbits Earth. Programme a rover to traverse a lunar landscape and work scientifically to investigate gravity, and what happens when there is none. Compare the times of day at different places on the Earth and use GPS satellite navigation systems to track hidden treasure. Then it's 3, 2, 1, blast off. Build and launch a rocket for an important test mission.

Exploring space is probably the greatest adventure that humankind has ever undertaken. Are we alone? Or are there other life forms out there?

The Solar System

The Solar System is made up of a collection of planets, their moons and smaller objects such as dwarf planets, asteroids, meteoroids and comets that orbit the sun. There are eight planets in the Solar System.

The four planets that are closest to the Sun are called terrestrial planets and are made up almost entirely of rock. These are Mercury, Venus, Earth and Mars. The four planets furthest away from the Sun are called Jovian planets and are mostly made up of gases such as hydrogen and helium.

Did you know!

The footprints & tyre tracks left by astronauts on the Moon will remain there forever as there is no wind to blow them away.

The Sun

The Sun is a star at the centre of the Solar System. Its surface temperature is about 5,500°C and has a diameter of 1.4 million km.

Night and day

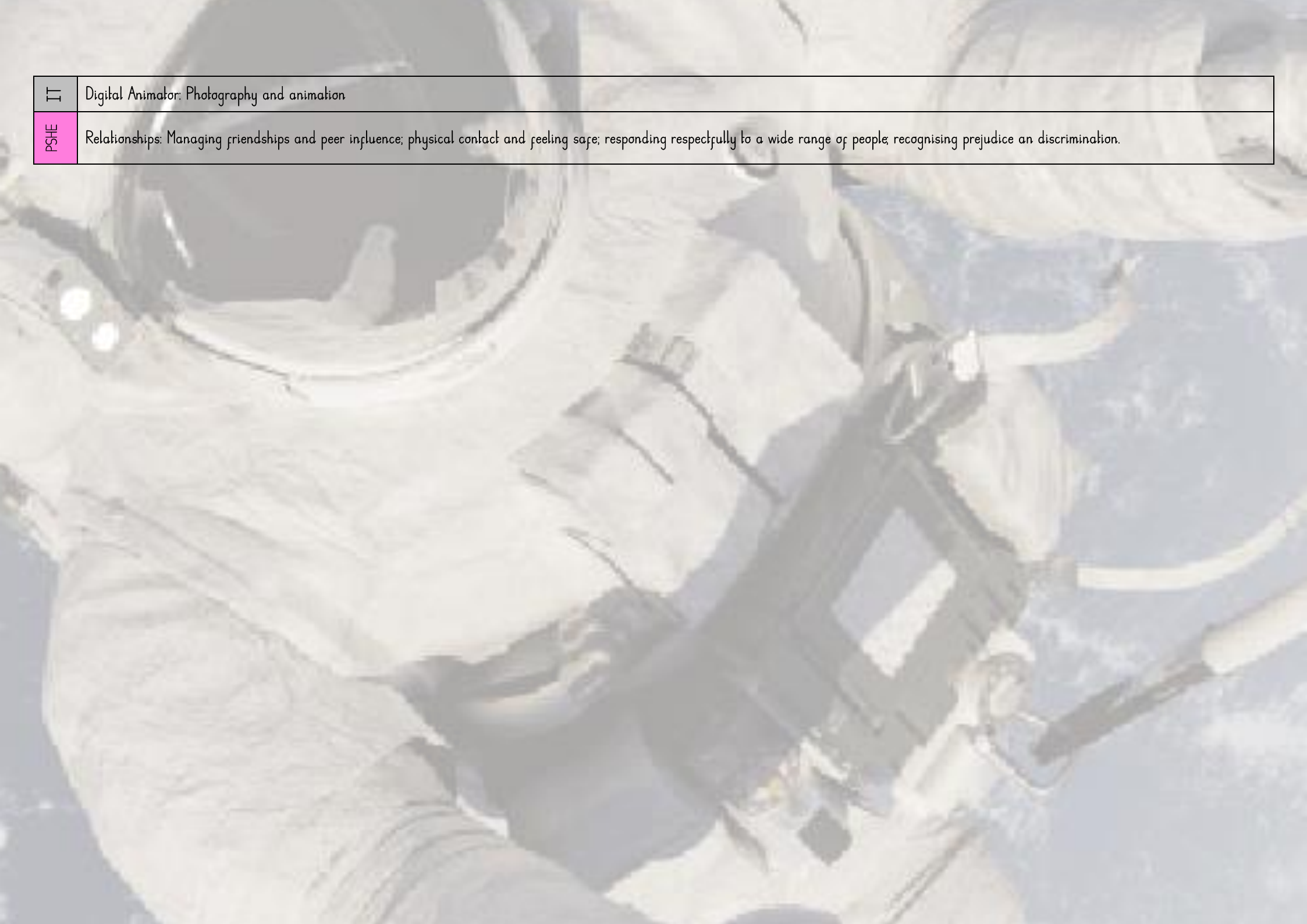
Night and day occurs because the Earth rotates on its axis. As the it rotates, the part of the planet that faces the Sun experiences daylight and the part of the Earth facing away from the Sun experiences night time. When viewed from above the North Pole, the Earth rotates anti-clockwise which is why the Sun always rises in the east and sets in the west.

Help your child prepare for their topic!

The possibilities are endless when you're thinking about the vastness of space. Why not work together to make a papier mâché model of your favourite planet? You could also watch a science-fiction film or read a book to see how space is presented. Alternatively, visit the local library together to find fascinating non-fiction books about space.



Science	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected.
	The Sun, Earth, Moon and the planets in our solar system are roughly spherical. All planets are spherical because their mass is so large that they have their own force of gravity. This force of gravity pulls all of a planet's material towards its centre, which compresses it into the most compact shape – a sphere.
	As Earth orbits the Sun, it also spins on its axis. It takes Earth a day (24 hours) to complete a full spin. During the day, the Sun appears to move through the sky. However, this is due to the Earth rotating and not the Sun moving. Earth rotates to the east or, if viewed from above the North Pole, it rotates anti-clockwise, which means the Sun rises in the east and sets in the west. As Earth rotates, different parts of it face the Sun, which brings what we call daytime. The part facing away is in shadow, which is night time.
	The Moon orbits Earth, completing a full orbit every month (28 days).
	Specialised equipment is used to take measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C), and measuring tapes (millimetres, centimetres, metres).
	Gravity is a force of attraction. Anything with a mass can exert a gravitational pull on another object. The Earth's large mass exerts a gravitational pull on all objects on Earth, making dropped objects fall to the ground.
	A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.
History	A material's properties dictate what it can be used for. For example, cooking pans are made from metal, which is a good thermal conductor, allowing heat to quickly transfer from the hob to the contents of the pan.
	Every significant historical event has a cause or a number of causes, such as the need for power and wealth, retaliation for past wrongs, the need to improve quality of life or the occurrence of natural disasters, such as earthquakes. The consequences are the outcomes of an event, such as changes in power, people being killed or displaced during war, improvements in quality of life or damage and destruction from a natural disaster.
Geog	Aspects of history are significant because they had an impact on a vast number of people, are remembered and commemorated or influence the way we live today.
Art	Aerial photography is used in cartography, land-use planning and environmental studies. It can be used alongside maps to find out detailed information about a place, or places.
PE	Some artists use text or printed images to add interest or meaning to a photograph.
DT	Gymnastics: Sequences
	Materials should be cut and combined with precision. For example, pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques.
	There are many rules for using tools safely and these may vary depending on the tools being used. For example, someone using a chisel should chip or cut with the cutting edge pointing away from their body. All tools should be cleaned and put away after use, and should not be used if they are loose or cracked.
	Testing a product against the design criteria will highlight anything that needs improvement or redesign. Changes are often made to a design during manufacture.



IT	Digital Animator: Photography and animation
PSHE	Relationships: Managing friendships and peer influence; physical contact and feeling safe; responding respectfully to a wide range of people; recognising prejudice and discrimination.