Dereham Church Infant and Nursery School- Science

	Year group: Reception	Area/topic: Earth and space
	(objectives from NC/ELG/Development matters) *Explore the natural world around them. (Understanding the world) *Describe what they see, hear and feel whilst outside. (Understanding the world)	

Prior learning	Future learning
*Explore and respond to different natural phenomena in their setting and on trips. (Birth to three)	*Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. (Y5 – Earth and space) *Describe the movement of the Moon relative to the Earth. (Y5 – Earth and space) *Describe the Sun, Earth and Moon as approximately spherical bodies. (Y5 – Earth and space) *Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 – Earth and space)

Working scientifically & encouraging scientific enquiry

Classification & identification

*Children to name some of the planets.

Observation

*Children to make observations of the sky, sun and moon.

Comparative testing

*Make and testing air-propelled rockets to find out which is the 'best'.

Pattern seeking

* Find simple patterns in how light levels and temperature change with the movement, or obscuring of, the Sun.

Research using secondary sources

*Sharing books and video clips about space exploration including video clips of astronauts walking on the Moon and floating in the space station.

* Find out about the Solar System, stars and space travel.

*Find out about nocturnal animals.

What pupils need to know or do to be secure

Key knowledge and skills

Children will be taught to:

*Observe that the Sun appears to move across the sky.

*Observe that it is warmer and brighter when the Sun is shining than when it is behind the clouds.

*Observe that they can see the Moon at night and sometimes in the day.

*Explain that they can only see the stars at night.

*Observe distant objects, including the Moon, with binoculars or a small telescope.

*Talk about what happens and what they can see and hear in the daytime and at night.

*Sort small world animals into those that are active in the daytime and those that are active at night.

*Begin to ask questions about space and space travel.

Possible evidence

*Children can use vocabulary correctly to name the Sun, Moon and stars.

*Children can talk about how the Sun, Moon and stars are different to Earth.

*Can identify differences between day and night.

*Can talk about animals that are active at night.

*Can talk about some differences between being on Earth and travelling in space.

Key vocabulary

Sun, Moon, Earth, star, planet, sky, day, night, space, round, bounce, float

Expose children to supplementary vocabulary such as:
Sunrise, sunset, astronaut, astronomer, constellation, orbit, nocturnal, slow-motion, magnify

Common misconceptions

*The Earth is flat

*The Moon and Sun are discs

*Stars are a pointed 'star' shape

*The Moon appears only at night

*At night, the Sun is turned off

*At night, the Sun goes behind the clouds

Books linking to this area

*Twinkle, twinkle little star

*Whatever Next! by Jill Murphy

*Astro Girl by Ken Wilson-Max

*Look Up! by Nathan Bryon

*How to Catch a Star by Oliver Jeffers

*Owl Babies by Martin Waddell

Memorable first hand experiences	Opportunities for communication
* Making model planets e.g. with papier-mâché or Modroc and balloons *Modelling a cratered moon landscape with papier-mâché or Modroc *Joining materials to make model rockets, Moon buggies/Mars rovers and space stations *Making and testing simple air-propelled card or plastic bottle rockets	*Children to be given opportunities for communication with partners, groups and whole class to discuss as completing practical activities and also to share findings. *Adults to model and encourage discussion during play. *Through the use of Explorify.

DCINS Reasonable adjustments for pupils with SEND

Communication and Interaction	Cognition and Learning
*Visual aids, pictures of equipment with words labelled, word mats with pictures for key words in that lesson. *Freedom to explore scientific equipment and investigate in own way. *Hands on experiences to encourage communication and interaction with others. *Pre teaching any new vocabulary.	*Opportunity for lots of hands on exploration and verbally sharing thoughts and ideas. *Freedom to explore scientific equipment and processes. *Pre teaching new vocabulary or concepts. *Activities adapted if needed for safety and ease. *Visual aids, pictures of equipment, mats with key words and pictures *Learning recorded through photos and adult quotes, children not expected to write for recording their understanding. *Using working walls to aid learning and remind of previous learning.
Social, Emotional and Mental health	**Sensory and Physical**
*Awareness of individual needs, any potential triggers within the curriculum and the child's background. *Pre prepare children for any activity they could find triggering or difficult in some way. *Practical activities or experiments to be completed within a smaller group or 1:1 if needed. *If the class are sharing their learning within a large group, take the child in a smaller focus group if they struggle with social situations. *Adjustments made where needed to suit individual.	*Adult support with any practical activities. *Awareness of the individual's likes or dislikes and their own reactions to sensory activities. *If a child enjoys sensory activities, then plan for this wherever possible within the lesson.