

Space — Curriculum Driver

Year 5/6 Spring Term

Topic Question: Is space the final frontier?

Linked people of study: Galileo, Neil Armstrong, Buzz Aldrin, Yuri Gagarin

Linked texts: The War of the Worlds

Trips/Visitors: Visit to Plymouth Science Park

Topic Composite/Finale: Science day for KS1/LKS2

Prior Learning Topic: ?



History

Intent: Children will have a good understanding of the invention of the telescope, the Space Race and Apollo 11

Hooks from old learning: LKS2 looking at famous scientists (Superhumans)

Skills and Knowledge Components Focus

Shows some understanding and talks with some clarity about the impact of historical events.

Use a variety of reliable sources to gain a deeper understanding of progress

Compare historical sources and suggest the validity of these subject.

Begin to use questions to understand significant events.

A detailed study of a particular famous person and their historical legacy.

Language specific to topic (e.g. gravity)

Talk in depth about the theme in relation to other historical events and the impact of these, linking to modern day.

Understand the methods of historical enquiry, including how it is used to make historical claims.

Identify significant events, make connections, draw contrast and analyse trends

A detailed study of a particular famous person and their historical legacy from at least two different points of view.

Language specific to topic (e.g. gravity)

Sticky Knowledge

During this term children will look back at our relationship with space and how it has influenced our understanding of how our universe exists. We shall study advances that were made during the ages, especially by the ancient Greeks. Thanks to the work of Galileo and the telescope, we will understand the shift from geocentric to heliocentric views of the world.

We will learn how World War II forced advancements in rockets and aircrafts which finally enabled experts to send aircrafts into space.

The years following WW II led to Sputnik 1 and the 'Space Race' between USA and Russia. This culminated with Man's first landing on the moon.

Recent developments have included The Hubble Telescope, the ISS (International Space Station), an increasing use of satellites for communications and private space flights. In 2021 it was announced that Cornwall would be the location for a space station in the UK.

Key Vocabulary: Solar, rotation, universe, telescope, gravity

Subject Composite: Children will create a scale model of the solar system

Impact: Children will learn how our understanding of the solar system has changed throughout the ages, often supported by scientific advancements (e.g. telescope). More recently they will learn of the Space Race—and how that has now opened up to private enterprise.

Geography

Intent: Children will learn about the solar system and the place of the earth within it. In geography we will explore how the planets move.

Hooks from old learning: Extreme Earth (LKS2)

Skills, and Knowledge Components Focus

Locate on a map- Human and physical characteristics of countries around the world and major cities, including Europe (incl Russia), North and South America.

Study geographical similarities and differences between countries in Europe and around the world, including North and South America.

Use maps, atlases, globes and digital / computer mapping to locate countries and identify features of countries.

Sticky Knowledge:

It appears to us that the Sun moves across the sky during the day but the Sun does not move at all. It seems to us that the Sun moves because of the movements of Earth.

Earth rotates (spins) on its axis. It does a full rotation once in every 24 hours. At the same time that Earth is rotating, it is also orbiting (revolving) around the Sun. It takes a little more than 365 days to orbit the Sun. 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.

Key Vocabulary: Solar, rotation, universe, telescope, gravity

Subject Composite: Science presentation to LKS2 .

Impact: Children will be excited by the possibilities of further space travel, especially considering the links with the new SpacePort planned for Newquay.

Science

Intent: Children will learn both about our solar system and how all living things have evolved over time

Hooks from old learning: Superhumans (LKS2)

Skills and Knowledge Components Focus

Earth and space

- Describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- Describe the movement of the Moon relative to the Earth
- Describe the Sun, Earth and Moon as approximately spherical bodies
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky

Evolution and Inheritance

- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

Sticky Knowledge:

Mercury, Venus, Earth and Mars are rocky planets

Jupiter, Saturn, Uranus and Neptune are mostly made up of gases.

The moon orbits earth while spinning on its axis

The moon rotates around earth and is lit up by the sun in different ways, appearing to change the moon's shape

Pluto used to be considered a planet but was reclassified as a dwarf planet in 2006

The earth rotates on its axis once in every 24 hours.

It also orbits the sun every 365 days

Daytime occurs when the earth is facing the sun; night when it is facing away from the sun

You can see variation within any species

There are many different types of environment around the world

Fossils are the preserved remains of ancient animals and plants

Living things are continuously evolving

Key Vocabulary: sun, star, moon, planet, sphere, spherical bodies, satellite, orbit, rotate, axis, geocentric, heliocentric, astronomer, offspring, inheritance, adaptation, habitat, environment, characteristics, fossil, evolution, natural selection, inherited traits

Subject Composite: : Invite parents in for a science workshop to share what we have learned

Impact: The children will have gained an overview of both how the solar system has been created—and how life on earth has evolved alongside. There will be a sense of awe at the scale and magnitude of the changes we have been part of. Which leaves us looking to the future . . .

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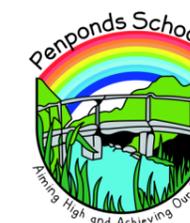
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Prior Learning Topic: ?



Art and Design

Intent: Children will learn about environmental artists who explore their work through light, dark, shadows and texture of nature.

Hooks from old learning: Sculpture unit in Superhumans (LKS2), 24 waves of Mount Fuji

Skills and Knowledge Components Focus

Skills Components:

SCULPTURE

Olafur Eliasson
James Turrell

Children explore light and dark, light and shadow, reflective surfaces and colour. Children document their ideas with drawing and photography.

Children create mini installations using reflective materials, translucent materials light and found objects.

Different textures and consistencies of paint.

Collaborative work.

Large-scale drawings and paintings.

Continue to use their sketchbooks to build up ideas and techniques that support thinking through a topic or concept.

Begin to build up a portfolio of their work

Sticky Knowledge:

Olafur Eliasson (Icelandic: Ólafur Elíasson; born 5 February 1967) is an Icelandic-Danish artist known for sculptured and large-scale installation art employing elemental materials such as light, water, and air temperature to enhance the viewer's experience.

His work explores the common ground between art and science - and is sometimes referenced in discussions about climate change. James Turrell is an American artist known for his work within the Light and Space movement.

He is renowned for his Skyspaces, including one at Tremenere Gardens, near Penzance, Cornwall.

Key Vocabulary: Sculpture, environment, nature, light, dark, shadow, natural, contrast, experience, reflection

Subject Composite:

Make their own mini installations based on the local environment

Impact:

Children will be able to compare the work of artists since the second world war, who have used the outdoors in which to express themselves. They will be inspired by British artists such as Andy Goldsworthy and the nearby SkyScape near Penzance.

Design Technology

Intent: Children learn how to design and make a working sun dial.

Hooks from old learning: In Extreme Earth make a structure that is earthquake proof (LKS2), catapults

Skills and Knowledge Components Focus:

Research existing products to inform design choices and criteria, taking into consideration user needs.

Design innovative, functional, appealing products aimed at particular individuals or groups.

Develop a set of criteria, based on research, to aid design process.

Communicate ideas by using cross-sectional diagrams, exploded diagrams, prototypes, pattern ideas and computer-aided design. Communicate ideas through oral and ICT presentations.

Adapt designs, where necessary, based of design feedback.

Sticky Knowledge:

use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups

generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Key Vocabulary: gnomon, dial plate, shadow, measure, materials, design, template, saw, tape measure, drill, glue, fix

Subject Composite: Children to design, make and evaluate a working sun dial.

Impact: Children will feel confident to use basic tools to manufacture a sun dial

Computing

Intent: In this unit, learners start to create vector drawings. They learn how to use different drawing tools to help them create images. Learners recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. Learners layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work

Hooks from old learning: This unit progresses learners' knowledge and understanding of digital painting and has some links to the Year 3 'Creating media - Desktop publishing' unit, in which learners used digital images. In this Year 5 unit, learners create images that could be used in desktop publishing documents

Skills and Knowledge Components Focus

Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information

Sticky Knowledge:

Vector drawings are created using shapes and lines. In vector drawings, all these shapes and lines are called objects. Within vector drawings, each object is created using a new layer. These can be rearranged using the menu tool, which allows the objects to be sent backwards and forwards (one at a time) or sent to the back or front. Objects within these programs can be grouped, which enables the objects to be treated as though they are a single object. It is important to recognise that although they act as though they are a single object, grouped objects are still a number of individual objects.

Key Vocabulary:

Vector, object, moving, resizing, rotating, duplicate

Subject Composite:

They use the main drawing tools within the Google Drawings application to create their own vector drawings. Learners discuss how vector drawings differ from paper-based drawings

Impact:

This unit progresses learners' knowledge and understanding of computing systems and online collaborative working.

Music

Intent: Children will further develop their listening and appraising skills. They will play the ukulele and glockenspiel and be able to compose and improvise.

Hooks from old learning: (Y3/4) To build on previously learnt skills from the charanga scheme.

Skills and Knowledge Components Focus

- Show control, phrasing and expression in singing.
- Perform in solo and ensemble contexts.
- Improvise independently with increasing aural memory.
- Compose and perform melodies using four or five notes.
- Know how pulse, rhythm fit together.
- Use a range of words to describe music (eg. duration, timbre, pitch, dynamics, tempo, texture, structure, beat, rhythm, silence, melody, chord, staccato, legato, crescendo).
- Use these words to identify strengths and weaknesses in own and others' music.
- Describe different purposes of music in history/ traditions/ other cultures.

Sticky Knowledge:

Bossa Nova originated in South America.

Swing became popular in the 1940s

Key Vocabulary:

Appraising, Bossa Nova, syncopation, structure, Swing, tune/head, note values, note names, Big bands, improvise, pulse, rhythm, pitch, tempo, dynamics, riff, hook, solo

Subject Composite:

Create leitmotifs for Ancient Greek Gods and Goddesses.

Tell the story of Icarus through Music.

Compose a rondo.

Moonrise Kingdom

Impact: Children are confident to play an instrument in front of an audience.

