

Year group: 5

Term: Autumn (2nd Half)

Topic: Earth and Beyond and Forces.

Kernow Cluster Topic Overview Sheet

Objectives



Opportunities for outdoor learning:

Look for Forces in and around the school grounds- machines or natural Forces.

Sketch out the planets on the playground.

Key vocabulary:

FORCES: gravity, air resistance, water resistance friction, surface force, effect, move, accelerate, decelerate stop, change direction, brake, mechanism, pulley, gear, spring, theory of gravitation, Galileo Galilei, Isaac Newton.

Earth & Beyond Earth, planet, gravity, Sun, solar, star, Moon, lunar, satellite, Sphere, spherical, crescent, revolve, spin, axis, rotate, rotation, orbit, Day, month, year, sunrise, sunset, shadow, daylight, appears, sky, hemisphere, Equator, poles.

PSHE objectives:

Be Friendly, be wise

Making and sustaining friendships

Conflict resolution

Anti-bullying

Keeping safe at home and outdoors

History objectives:

None this term

Science objectives:

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.

Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Digital literacy:

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content.

PE objectives:

use throwing and catching in isolation and in combination play competitive games and apply basic principles suitable for attacking and defending develop flexibility, strength, technique, control and balance compare their performances with previous ones and demonstrate improvement to achieve their personal best.

Music objectives:

use and understand staff and other musical notations. play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control and expression. listen with attention to detail and recall sounds with increasing aural memory.

Computing objectives: understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.

Art objectives:

To create sketch books to record their observations and use them to review and revisit ideas. To improve their mastery of art and design techniques, including drawing using oil pastels about great artists, architects and designers in history.



Maths objectives:

identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers

- know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers
- establish whether a number up to 100 is prime and recall prime numbers up to 19
- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- multiply and divide numbers mentally drawing upon known facts
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
- solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Geography objectives:

RE objectives: To explore what is meant by 'sacrament'. To identify the symbolism in sacraments. To explore and understand the role of the priest and the deacon. To deepen understanding of what God promised when sent his Son. The meaning behind some of the names given to Jesus are explored, Messiah and Emmanuel. The role of the prophets. To make connections between the plight of Jesus and the homeless and refugees today.

Opportunities for trips / visitors:

Nexus – The Planetarium

Kernow Astronomers talk.

Whole class texts:

Cosmic by Frank Cottrell Boyce.

George's secret key to the universe by Lucy & Stephen Hawking.

English objectives:

Write legibly, fluently and with increasing speed.

Plan their writing by: identifying the audience for and purpose of the writing

Use informal language to write diary entries (from a space)

Write an information text (Earth and Space)

Write a newspaper report using key vocabulary (Space and Tim Peake.

Languages objectives:

None this term.

Design Technology objectives:

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

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Skills



Links to previous topics

Shapes
Day and Night
Light sources
Movement and direction
Forces Y3

Links to future topics: Y6

Light.

PSHE: Develop and maintain a variety of healthy relationships, within a range of social/cultural contexts

British values:
Responsibility. Law. Respect.

Maths skills:

Multiply a decimal to 2.d.p by 10 and 100 e.g. 36.23 x 10. Extend methods to the multiplication of a two-digit number by a two-digit number, (e.g. 16 x25)
Multiply and divide integers by 10/100/1000/10,000. Double and halve whole numbers e.g. double 126 is 63, half of 320 is 160. Add and subtract fractions with the same denominator and multiples of the same number e.g. 5/7 + 4/7 = 9/7 or 1 and 2/7.

Measure, compare, multiply and divide standard metric units and their abbreviations when estimating, measuring and recording capacity.

History skills:

None this term.

PE skills:

Explain and evaluate the different techniques used for passing, controlling, dribbling and shooting the ball in games.

Make and apply a range of decisions quickly and appropriately in games.

Play in a number of attacking and defending positions effectively.

Geography skills:

None this term

Music skills:

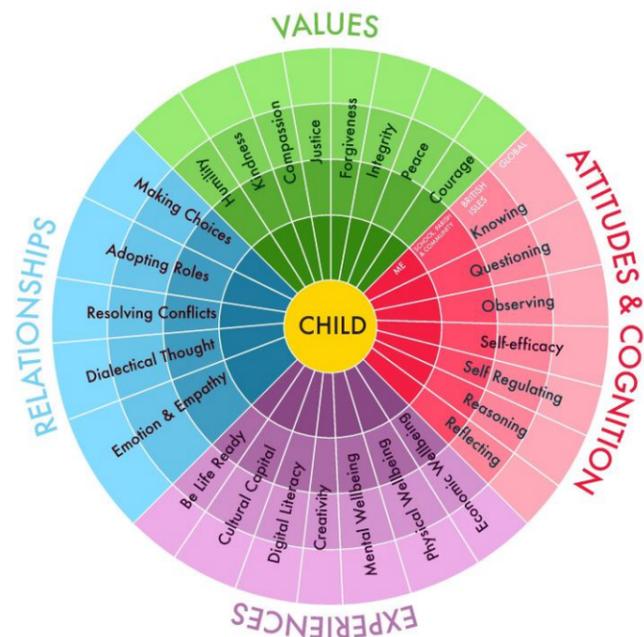
Sing with awareness of dynamics, phrasing and pitch control.
Compare, contrast and combine a range of musical genre.
Recognise the difference between unison and harmony.
Use notation associated with duration, e.g. *crochet*-one beat, *minim*-two beats, *semi-breve*-four beats, *quaver*-half beat, *semi-quaver*-quarter beat, a rest etc.

Computing skills

Presentation (Powerpoint) Work independently to create a multi slide presentation that includes speakers notes.

Art skills: Use an increasing range of visual and tactile techniques for example lines and marks e.g. direct, meandering, accidental and intentional.

Make images appear further away by making them smaller and making parallel lines appear to converge as they get further away from the viewer.



Opportunities for home learning / cultural capital:

Research planets and the solar system.

Set homework:

Research Space
Spellings
Reading and times tables

English skills:

Summarise the main ideas drawn from more than one paragraph, identifying key details that support main ideas.
Retrieve record and respond to information.
Ask questions in order to improve understanding.
Use *inverted commas* to demarcate *indirect speech*.

Use *commas* to mark *clauses* and *phrases* in a sentence accurately.
Use relative clauses beginning with *who*, *which*, *where*, *when*, *whose*, *that*,
Ensure that writing is *factual* and contains a well-structured *introduction*, *conclusion/summary*.

Science skills: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.

Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.

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

Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.

RE skills:

Make links between sources, practices, beliefs, ideas, feelings and experiences.

Describe in detail the impact of religion on people's lives.

Languages skills:

None this term

Design Technology skills:

Generate plans and designs based on research and ideas that take account of the users' views and the intended purpose.