



Bevendean Primary School Curriculum

Year 5 Spring Framework

Topic focus: Earth and Space/Around the
World in 80 Days

English

National Curriculum Aims for Year 5

The overarching aim for English in the national curriculum is to promote high standards of language and literacy by equipping pupils with a strong command of the spoken and written word, and to develop their love of literature through widespread reading for enjoyment. The national curriculum for English aims to ensure that all pupils:

- read easily, fluently and with good understanding
- develop the habit of reading widely and often, for both pleasure and information
- acquire a wide vocabulary, an understanding of grammar and knowledge of linguistic conventions for reading, writing and spoken language
- appreciate our rich and varied literary heritage
- write clearly, accurately and coherently, adapting their language and style in and for a range of contexts, purposes and audiences
- use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas
- are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate.

Learning this term

The topic for the spring term is *Earth and Space*, which is linked to *Around the World in Eighty Days* by Jules Verne. The children begin by looking at a descriptive poem about the moon called *Silver* by Walter de la Mere. The focus is on the use of figurative language in poetry and how this can be used to create effective poetry. The children use this as a model on which to base their own poem. They also take inspiration from the knowledge they develop through studying the earth and space in science.

The children are introduced to different cultures through a series of workshops that include artefact discovery boxes, food tasting and music. This is followed by looking at stories from other cultures and those which are set in other countries, making links with *Around the World in 80 Days*. The children learn the story *Why Compassion Bears Fruit* by Pie Corbett using the 'Talk for Writing' process. This, together with other stories from around the world that contain morals, provides them with the inspiration to create their own tale set in another culture.

The non-fiction focus for the first half term is information texts that relate to other countries, including Japan, France and Peru. These are read and analysed to support acquisition of language. The children then produce an information poster for a fictional country, which includes geographical, social and cultural facts.

In the second half term, the children learn how to write a story in which a monster is defeated. Through the 'Talk for Writing' process, the children learn the story of *Beowulf*, which results in them writing their own tale.

Mathematics

National Curriculum Aims for Year 5

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Learning this term

The topic this term begins with a study of Phileas Fogg from the well-known story *Around the World in 80 Days* by Jules Verne. It is used to assess what skills he would have needed to complete his journey. The initial focus is on *Time* when the children learn about both analogue and digital clocks and solve problems using both 12 and 24 hour clocks.

Inspired by Phileas Fogg, the children solve problems involving time and distance travelled, with a focus on subtraction. They then go on to compare weather in the UK to various international destinations, through data handling and the production of line graphs that they then analyse.

Division is taught using a variety of resources to solve real life problems, involving pocket money, savings and how to budget effectively. This leads to an investigation to find the cost of fuel needed for Phileas Fogg (who uses different forms of transport for each leg of his journey) to complete his journey around the world.

Following the work on division, the children learn about fractions. Through real life role play situations, the children learn to understand fractions and their equivalence. The skills that they have learnt are applied to problem solving activities involving food and shopping.

Later in the term, the children learn about angles as part of the journey through space. The children learn to understand and identify different angles through daring space battles. They must first design their own spaceships by measuring and drawing angles. Once their fleet is complete they embark on an intergalactic battle which requires their use of angle to defeat the enemy.

Their journey through space culminates in a look at reflection and translation. Continuing with the theme of space battles, the children design formations for their space fleet that

ensure that the mother ship is protected. This is achieved by reflecting their spaceship designs to create a symmetrical formation. Further to this they develop their knowledge of translation and coordinates through the movement of their fleet across space to safety.

Science

National Curriculum Aims for Year 5

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Living things and their habitats

- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- describe the life process of reproduction in some plants and animals.

Animals including humans

- describe the changes as humans develop to old age.

Properties and changes of materials

- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- demonstrate that dissolving, mixing and changes of state are reversible changes
- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

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.

Forces

- 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.

Learning this term

Science skills and knowledge relating to the earth and space are taught. The children consider what they already know about the earth, the sun and the moon. They discuss what they want to research and create concept maps. The children learn about direct and indirect evidence and how knowledge and understanding of the scientific aspects of the solar system have developed as a result of, among other things, advances in technology. The children investigate how a shadow formed by shining a torch on a spherical object could provide proof that the earth, sun and moon are spherical. To further support their findings, they explore Aristotle's discovery that, during lunar eclipses (when the earth's orbit places directly between the sun and the moon, creating a shadow in the process), the shadow on the moon's surface is round. This shadow is the earth's, and demonstrates the spherical shape of the earth.

The children then build upon this, using role play with torches to model the difference between night and day. They re-enact the movement of the earth on its axis and link this to their knowledge of a day, a month and a year. Through discussion the children make links between the orbit of the earth around the sun and the seasons. Making links with geography and the journey of Phileas Fogg, the children investigate the different time zones across the world and answer the question: *Would it be good or bad if the earth began to rotate at a slower rate?* They discuss possible impacts on the seasons, days, holidays and our sleeping patterns.

To investigate the movement of the moon relative to the earth, the children imitate the rotation and orbit of the moon around the earth and discuss how long this takes linking it to the view of the dark side of the moon and the occurrence of blue moons. Through a moon phase rap song the children learn the different phases of the moon and how they occur.

Following this, the children develop their understanding of the physical landscape of the moon by replicating its craters. The children drop marbles or ball bearings into a material that replicates a lunar surface. When they drop the marbles onto the material, it creates a shape that simulates the craters on the moon's surface. They investigate the difference in depth and the movement of sand in relation to the height from which the balls are dropped.

Geography

National Curriculum Aims for Year 5

The national curriculum for history aims to ensure that all pupils:

- locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries, and major cities
- understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America
- physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle

Learning this term

Linking with work in mathematics, the children plot the journey that Phileas Fogg travelled by locating the cities and countries that he visited en route. The children watch *Around the World in 80 Days*, which prompts discussion about different geographical, human and cultural features.

Through games such as bingo and loop cards, the children identify European countries, Russia and major cities.

Working in groups, the children undertake an independent research project, focusing on one country in Europe. They investigate the human and physical characteristics of the country they have chosen.

They then produce a video to present their information to the class; this is presented in the form of a travel programme, weather report or documentary.

During the second half term, the children learn about earthquakes. They are exposed to a variety of mediums in order to learn the physical process and consequences of earthquakes. After deepening their understanding, the children are challenged to design and build a structure that simulates the advanced earthquake resistant buildings in countries such as Japan. Earthquake-proof buildings are intended to bend and sway with the motion of earthquakes, instead of cracking and breaking under the pressure. They build their structures from toothpicks and marshmallows, which replicate the piers and beams of a real building. This is placed in jelly, which simulates the foundations of a building. Their buildings are then tested by simulating an earthquake. The children keep an earthquake journal, which details the areas of weakness and strength. Following the earthquakes, the children evaluate the success of their building design and redesign and rebuild as necessary.

Design and Technology

National Curriculum Aims for Year 5

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Key stage 2

Design

- 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

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Learning this term

Continuing the focus on other cultures and countries around the world, the children study the importance of masks through history. Their research is focused on finding out about the uses of masks in other cultures. They use ICT research skills to collect ideas in order to design their own mask. Each child's mask is inspired by a different culture, which they have researched. The making of the mask utilises a basic mask template, Modroc and mixed media to embellish. When the masks are complete, they evaluate their final product and compare this to their initial design.

Modern Foreign Language

National Curriculum Aims for Year 5

The national curriculum for languages aims to ensure that all pupils:

- understand and respond to spoken and written language from a variety of authentic sources
- speak with increasing confidence, fluency and spontaneity, finding ways of communicating what they want to say, including through discussion and asking questions, and continually improving the accuracy of their pronunciation and intonation
- can write at varying length, for different purposes and audiences, using the variety of grammatical structures that they have learnt
- discover and develop an appreciation of a range of writing in the language studied.

Learning this term

The children learn to understand short passages of familiar language, ask and answer questions, sing songs and play games related to the weather and school. They learn to express likes and dislikes and they take part in role play situations in which they hold short conversations using the vocabulary they have learnt. When speaking French, the children learn to improve the accuracy of their pronunciation.

Computing

National Curriculum Aims for Year 5

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Key stage 2

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Learning this term

Computing teachers from a local secondary school visit and teach the children coding alongside the class teachers, using Scratch and Kodu. The children also learn to use coding apps on tablets.

The children develop their skills when using the internet to find and retrieve information by refining, searching, validating and comparing information. Using information sourced from the internet, together with their own knowledge, the children create interactive Earth and Space books, which use hyperlinks and buttons for navigation. They also learn how to communicate online safely and respectfully.

Working in groups, the children undertake an independent research project focusing on one country in Europe. They investigate the human and physical characteristics of the country they have chosen. These skills are developed and practised further when researching countries for their independent research projects in geography. Following this, the children research masks from around the world to inspire their own designs for their design technology work.

PSHE

National Curriculum Aims for Year 5

The national curriculum for personal, social, health, economic and citizenship education aims to ensure that all pupils:

- accurate and relevant knowledge
- opportunities to turn that knowledge into personal understanding
- opportunities to explore clarify and if necessary challenge their own and others values, attitudes, beliefs, rights and responsibilities
- opportunities to learn and practice the skills and strategies they need in order to live healthy, safe, fulfilling, responsible and balanced lives.
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Learning this term

The first half of the term covers *Going for Goals*, in which the children discuss the various achievements of people they admire. They explore the various paths these people have taken to fulfil their goals and think about goals they would like to achieve and the journey they must go on to be successful.

This is followed by a series of lessons that develop the children's awareness of the Gypsy, Roma and Traveller community. Initially, they reflect on the similarities and differences that exist within their class and discuss how these enrich our school community. This leads onto further talk about rights and freedom of expression. They watch a locally-made DVD, *Sticks and Stones*, which introduces them to the experiences of children living in the Gypsy, Roma and Traveller community.

In the second half of the term, the children build on their understanding of the *Good to be Me* topic. They deepen their understanding of good and not so good feelings through discussion and drama.

The final series of lessons cover *Keeping Safe*. The children use a variety of sorting activities on the theme of a healthy balanced lifestyle. This includes work on the impact that alcohol and tobacco can have on their immediate and future health. Through a combination of stories and role play, they discover basic techniques for resisting media and peer pressure.

Physical Education

National Curriculum Aims for Year 5

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Key stage 2

- use running, jumping, throwing and catching in isolation and in combination
- play competitive games, modified where appropriate [for example, badminton, basketball, cricket, football, hockey, netball, rounders and tennis], and apply basic principles suitable for attacking and defending
- develop flexibility, strength, technique, control and balance [for example, through athletics and gymnastics]
- perform dances using a range of movement patterns
- take part in outdoor and adventurous activity challenges both individually and within a team
- compare their performances with previous ones and demonstrate improvement to achieve their personal best.

Learning this term

During the first half term, the children develop their gymnastics skills. They learn how to create sequences using different forms of travel, balances and apparatus. They develop their team building skills and explore the links between gymnastics and music.

The children continue to attend St. Luke's Swimming Pool to further develop their water confidence and safety. Those who are able to swim competently improve their range of strokes such as front crawl, backstroke and breaststroke effectively.

During the second half term, the children play rugby and work on improving the skills of running, catching and throwing. They also learn the basic principles of attack and defence.

Religious Education

National Curriculum Aims for Year 5

The local authority curriculum for religious education aims to ensure that all pupils:

- develop their knowledge and understanding of the nature of religious beliefs and practices and the importance of these in the lives of believers
- explore those aspects of human experiences which give rise to spiritual awareness and fundamental issues about beliefs and values.

Learning this term

The children study religion around the world. They look at a map of the world and locate where various religions are practised. Following this, the focus is Hinduism, where the children listen to, storyboard and retell the story of *Rama and Sita*. They use the moral values in the story to discuss good versus evil. They learn about the many gods and goddesses that are worshipped in the Hindu religion and write descriptions. Diwali, the Hindu festival of light, is studied and the children learn what the festival is, how it is celebrated and they create rangoli (rangoli is a folk art from India in which patterns are created on the floor in living rooms or courtyards using materials such as coloured rice, dry flour, coloured sand and flower petals).

Following this, the children read creation stories from various cultures around the world and compare the values in these stories.

Music

National Curriculum Aims for Year 5

The national curriculum for music aims to ensure that all pupils:

- perform, listen to, review and evaluate music across a range of historical periods, genres, styles and traditions, including the works of the great composers and musicians
- learn to sing and to use their voices, to create and compose music on their own and with others, have the opportunity to learn a musical instrument, use technology appropriately and have the opportunity to progress to the next level of musical excellence
- understand and explore how music is created, produced and communicated, including through the inter-related dimensions: pitch, duration, dynamics, tempo, timbre, texture, structure and appropriate musical notations.

Key stage 2

- play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control and expression
- improvise and compose music for a range of purposes using the inter-related dimensions of music
- listen with attention to detail and recall sounds with increasing aural memory
- use and understand staff and other musical notations
- appreciate and understand a wide range of high-quality live and recorded music drawn from different traditions and from great composers and musicians
- develop an understanding of the history of music.

Learning this term

Soundmakers is a programme of whole-class instrumental learning for children at Key Stage 2, delivered by music leaders from the Brighton and Hove Music and Arts Service, working in partnership with the music co-ordinator and/or class teacher. Soundmakers offers an engaging and enjoyable musical experience, which enables the children to learn together as a band, developing musical concepts through the practical application of instrumental and vocal skills while working together towards a celebratory performance. At the end of the project, parents, pupils and teachers are invited to watch the performance.

Specialist music teaching is provided each term by external teachers. They work closely with the class teachers to link music to the topic being studied.

During the spring term, the whole school participates in *sign2sing*, which is an annual, world record breaking event where the children collectively learn a song and the sign language to accompany the song. By taking part in *sign2sing*, the children learn some sign language in a fun and memorable way.