

NATIONAL CURRICULUM CONTENT

TEACHING & LEARNING OUTCOMES

OTHER POINTS TO NOTE

Space: Above and Beyond

To include:

- **Science:** Earth & Space
- **Science:** Forces
- **Geography:** The World
- **History:** Prehistoric World
- **Art & Design:** Landscapes – Sketching, Painting & Photography
- **Design & Technology:** Planet Explorer (Programming)
- **Music:** Holst – The Planets
- **Religious Education (RE):** Beliefs

Science

Working Scientifically

- ✓ Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- ✓ Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- ✓ Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- ✓ Using test results to make predictions to set up further comparative and fair tests
- ✓ Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- ✓ Identifying scientific evidence that has been used to support or refute ideas or arguments.

Earth & 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

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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

Locational knowledge

- ✓ 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
- ✓ Name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time
- ✓ Identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night)

Human and physical geography

- ✓ Describe and understand key aspects of:
 - ⇒ Physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle
 - ⇒ Human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water

Geographical skills and fieldwork

- ✓ Use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied
- ✓ Use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom and the wider world

- Know that stars, planets and moons are approximately spherical bodies.
- Recognise the contributions of astronomers such as Ptolemy, Aristotle and Galileo.
- Understand the relative sizes and distances of the Earth, Sun and Moon.
- Know that the Sun is a star at the centre of our solar system, which has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
- Understand that the Earth's rotation causes the apparent movement of the Sun.
- Know that the Earth spins anticlockwise on its axis once every 24 hours.
- Know that the Earth takes a year (365 ¼ days) to make one complete orbit of the Sun.
- Recognise that its day-time on the part of the Earth that is facing the Sun, and night-time on the part that is facing away.
- Understand that the time of day is affected by a place's longitude.
- Explore the position and length of a shadow at different times of the day.
- Recognise that the Sun rises in the general direction of East and sets in the West.
- Understand that sunrise and sunset changes time throughout the year, affecting the length of daylight.
- Recognise that there is a cycle of four seasons in a year, which is caused by the Earth's axis of rotation being tilted.
- Understand that a moon is a celestial body that orbits a planet.
- Know that the Moon takes approximately 28 days to orbit the Earth.
- Recognise that the moon gives out no light of its own, but reflects sunlight.
- Understand that the movement of the Moon around the Earth explains its appearance (Phases).

- Know how to measure forces using a Newton meter.
- Identify how scientific evidence is used to support and refute ideas.
- Explore the ideas of Aristotle and Galileo about how things fall.
- Recognise gravity as a non-contact force.
- Understand the difference between mass and weight.
- Investigate how forces make things change direction, speed up, slow down, start or stop.
- Conduct a fair test investigating into air resistance, using parachutes.
- Recognise that water and air resistance are forms of friction that opposes movement.
- Explore how the shape of an object affects its movement through a liquid or gas.
- Investigate the effect of upthrust on objects in water, by measuring and comparing weights of objects in water and air.
- Understand that mechanisms are devices that change the effect of a force; investigating levers, pulleys and gears for lifting and moving things.
- Know how mechanisms are used in everyday life.

- Know and locate the countries, capitals and flags of the United Kingdom.
- Understand the meaning of physical and human geography.
- Know the location of different human and physical characteristics, including key topographical features, within and around the United Kingdom and the World, e.g. seas, mountains, deserts, rainforests, rivers, cities, language, religion, political system and landmarks.
- Understand how localities within the UK and the World relate to each other.
- Know and locate the world's continents and oceans.
- Know and locate the world's countries; identifying their renowned places and flags.
- Understand some of the geographical similarities and differences of a variety of different world countries.
- Understand the importance of latitude in relation to climate.
- Recognise how climate affects population settlement.
- Identify the position of the Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle.
- Understand the importance of longitude in relation to time.
- Recognise different time zones around the world.
- Understand the significance of Prime/Greenwich Meridian.
- Obtain information from atlases and maps.

See Collins Connect 'Snap Science' Teaching Framework and Online Platform - <http://connect.collins.co.uk>

UNIT: The Earth and Beyond

See Collins Connect 'Snap Science' Teaching Framework and Online Platform - <http://connect.collins.co.uk>

UNIT: Feel the Force

Possible Educational Visits:

- Science Museum
- The Peter Harrison Planetarium at the Royal Observatory, Greenwich
- Prime Meridian – The Royal Observatory, Greenwich
- Hampstead Heath
 - Orienteering
- Konflux Theatre in Education ‘Play in a Day’
- Museum of London
- Tate Britain
- Local Place of Worship
- School Visit by a Local Religious Leader or Inspirational Person

History

- ✓ Changes in Britain from the Stone Age to the Iron Age

- Explore the different theories related to the formation of the Universe and the Earth, e.g. Big Bang, Creationism; understanding their link to science and religion.
- Know that the position and size of the continents and oceans have changed since the Earth's formation.
- Understand that prehistoric means the history before written records began.
- Recognise that Britain's prehistory is usually divided into the Stone Age, Bronze Age and Iron Age (which is named after the materials used to make tools and weapons).
- Know that prehistoric Britain began around 450,000BC and ended with the Roman invasion in 43AD.
- Recognise that the Stone Age (around 450,000BC until around 2,300BC) can be divided into three main periods: the Palaeolithic, the Mesolithic and the Neolithic.
- Understand that during the Palaeolithic period humans evolved from Neanderthals into modern humans (Homo sapiens); the Mesolithic period began with the end of an ice age; whilst the Neolithic period saw the biggest changes – humans went from being nomadic hunter-gathers to living in small settlements, farming, domesticating animals and constructing sophisticated monuments.
- Examine the excavation of along with the artefacts found at ‘Skara Brae’; making inferences and deductions about what life was like during the time period.
- Recognise that the Bronze Age (around 2,300BC until around 700BC) saw the introduction of metal (copper, bronze and gold) tools and weapons.
- Understand how and when ‘Stonehenge’ was built; speculating as to its purpose.
- Recognise that the Iron Age (around 700BC until the Roman invasion in 43AD) saw the introduction of Iron tools and weapons.
- Identify and place prehistoric events onto a timeline.

Art & Design

- ✓ 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, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]
- ✓ About great artists, architects and designers in history

- Investigate a range of prominent landscape artists including photographers; identifying the qualities and characteristics of different works of art.
- Explore and use the techniques used to create depth within art work, including the position of the horizontal line, aerial perspective (foreground, middleground, background and shading) and liner perspective (vanishing point).
- Investigate ideas; sketching and recording appropriate observations into sketch books.
- Experiment with different art techniques (e.g. charcoal and water colour).
- Know how to use digital technology to capture and manipulate landscape photographs.
- Evaluate work and identify possible areas for improvement.

Artists:

- Vincent Van Gogh
 - John Constable
 - J.M.W. Turner
 - Claude Monet
- Photographers:**
- Ansel Adams
 - Arif Saeed
 - Jim Brandenburg

Suggested Equipment & Software:

- Digital Cameras / Tablets
- Adobe Photoshop
- 2 Simple Software: 2Photo
- Google Picasa

Design & Technology

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

Technical knowledge

- ✓ Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- ✓ Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers & motors]
- ✓ Apply their understanding of computing to program, monitor and control their products.

- Explore how technology, specifically robotics, has been used within space exploration.
- Investigate and analyse a range of existing robots; identifying materials and methods used during assembly.
- Apply what they have learnt through investigation to the design process.
- Present ideas clearly; using a variety of appropriate methods.
- Assemble different equipment together (i.e. K'NEX, Lego) to produce a quality product (robot) which can be programmed to move across different surfaces (at minimum).
- Understand and use electrical systems (e.g. circuits, bulbs and motors) as well as mechanical systems (e.g. gears, levers and linkages) within their products (robots).
- Evaluate work and identify possible areas for improvement.

Resources :

- Electrical Circuit Components [e.g. Motors, Wire, Bulbs, Buzzers, Switches, Batteries].
- FlowGo Control Interface, FlowI3 Software, Connection Leads, Light Switches, Proximity Switches, 6V Light Bulbs & Holder, 6V Square Buzzers, Motors.
- K'NEX Construction and Control Model Sets.
- Building Supplies [e.g. Wooden Dowel, Elastic bands, Cotton Wheels]
- Tools [e.g. Saws, Glue Gun, Bench Hooks]

- Music**
- ✓ 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

- Listen to and discuss ‘The Planets’ by the English composer Gustav Holst.
- Use music notation, both informal and formal (staff), to record compositions.
- Develop and perform musical compositions, using a variety of musical instruments, in the style of Holst which represents their image of a planet or astronomical event (e.g. Moon Landing).

Musical Instruments:

- Percussion
- Recorder
- Xylophone
- Guitar

RE

- Understand that all people have values and beliefs that inform their actions.
- Understand the ways in which religious beliefs about God, the world and other people affect the ways in which people live their lives and the choices they make.

Resources:

- Religious Stories/Books.
- Artefacts from a variety of religions.

Incorporate across all topics

To include:

- **Computing:** E-Safety and Digital Literacy
- **Computing:** Programming and Computer Science
- **Computing:** Creative use of ICT
- **PHSE:** Health and Wellbeing
- **PHSE:** Relationships
- **PHSE:** Living in the Wider World

Computing

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

- ✓ 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

- ✓ 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 – *Word Processing, Presentation, Graphics, Digital Media (capturing video & sound footage, photography, animation) and Data Handling*

Suggested Software:

- World Wide Web (www) – Search Engine
- CEOP – www.thinkuknow.co.uk
- LGFL: E-Safety Framework
- LGFL London Mail
- 2Simple Software (& Purple Mash)

Suggested Software:

- 2Simple Software (& Purple Mash): 2Go, 2logo, 2DIY, 2DIY 3D, 2Simulate
- Roamer World (with 2Paint A Picture)
- Purple Mash 2Code: Gorilla Lessons, Debug Challenges Gorilla
- J2Code www.j2e.com/j2code
- Scratch www.scratch.mit.edu
- Flowol3

Suggested Equipment:

- Floor Robots - BeeBot, Pro-Bot, Roamer
- FlowGo Interface
- FlowGo Mimics
- Electrical Circuit Components [e.g. Wire, Light Switches, Proximity Switches, Small Pressure Pad Switches, 6V Light Bulbs & Holders, 6V Square Buzzers, Motors]
- K’NEX & Lego Construction Sets

Suggested Software:

- 2Simple Software (& Purple Mash): 2Paint A Picture, 2Design and Make, 2Type, 2Create a Story, 2Create, 2Publish, 2Connect, 2Photo, 2Animate, 2Count, 2Graph, 2Question, 2Investigate, 2Calculate, 2Music – Explore, Beat & Sequence
- Purple Mash Topics www.purplemash.com
- Clicker 6
- Microsoft Office: Word, PowerPoint, Excel
- Microsoft Movie Maker

Suggested Equipment:

- Tablets
- Digital Cameras
- Tuff Cams
- Recordable Microphones
- Film Production Equipment, e.g. lighting, green screen, tripod
- Data Loggers

PHSE

Pupil should have the opportunity to learn:

- ✓ what positively and negatively affects their physical, mental and emotional health (including the media)
- ✓ how to make informed choices (including recognising that choices can have positive, neutral and negative consequences) and to begin to understand the concept of a ‘balanced lifestyle’
- ✓ to recognise opportunities to make their own choices about food, what might influence their choices and the benefits of eating a balanced diet
- ✓ to recognise how images in the media do not always reflect reality and can affect how people feel about themselves
- ✓ to reflect on and celebrate their achievements, identify their strengths, areas for improvement, set high aspirations and goals
- ✓ to deepen their understanding of good and not so good feelings, to extend their vocabulary to enable them to explain both the range and intensity of their feelings to others
- ✓ to recognise that they may experience conflicting emotions and when they might need to listen to their emotions or overcome them
- ✓ about change, including transitions (between Key Stages and schools), loss, separation, divorce and bereavement
- ✓ to differentiate between the terms, ‘risk’, ‘danger’ and ‘hazard’
- ✓ to deepen their understanding of risk by recognising, predicting and assessing risks in different situations and deciding how to manage them responsibly (including sensible road use and risks in their local environment) and to use this as an opportunity to build resilience
- ✓ to recognise their increasing independence brings increased responsibility to keep themselves and others safe
- ✓ that bacteria and viruses can affect health and that following simple routines can reduce their spread
- ✓ that pressure to behave in an unacceptable, unhealthy or risky way can come from a variety of sources, including people they know and the media
- ✓ to recognise when and how to ask for help and use basic techniques for resisting pressure to do something dangerous, unhealthy, that makes them uncomfortable, anxious or that they believe to be wrong
- ✓ school rules about health and safety, basic emergency aid procedures, where and how to get help
- ✓ what is meant by the term ‘habit’ and why habits can be hard to change

Pupil should have the opportunity to learn:

- ✓ to recognise and respond appropriately to a wider range of feelings in others
- ✓ to recognise what constitutes a positive, healthy relationship and develop the skills to form and maintain positive and healthy relationships
- ✓ to recognise ways in which a relationship can be unhealthy and who to talk to if they need support
- ✓ to be aware of different types of relationship, including those between acquaintances, friends, relatives and families,
- ✓ that civil partnerships and marriage are examples of stable, loving relationships and a public demonstration of the commitment made between two people who love and care for each other and want to spend their lives together and who are of the legal age to make that commitment
- ✓ to be aware that marriage is a commitment freely entered into by both people, that no one should enter into a marriage if they don’t absolutely want to do so
- ✓ that their actions affect themselves and others
- ✓ to judge what kind of physical contact is acceptable or unacceptable and how to respond
- ✓ the concept of ‘keeping something confidential or secret’, when we should or should not agree to this and when it is right to ‘break a confidence’ or ‘share a secret’
- ✓ to listen and respond respectfully to a wide range of people, to feel confident to raise their own concerns, to recognise and care about other people’s feelings and to try to see, respect and if necessary constructively challenge their points of view
- ✓ to work collaboratively towards shared goals

Pupil should have the opportunity to learn:

- ✓ to research, discuss and debate topical issues, problems and events concerning health and wellbeing and offer their recommendations to appropriate people
- ✓ why and how rules and laws that protect themselves and others are made and enforced, why different rules are needed in different situations and how to take part in making and changing rules
- ✓ to understand that everyone has human rights, all peoples and all societies and that children have their own special rights set out in the United Nations Declaration of the Rights of the Child
- ✓ that these universal rights are there to protect everyone and have primacy both over national law and family and community practices
- ✓ to know that there are some cultural practices which are against British law and universal human rights, such as female genital mutilation
- ✓ to realise the consequences of anti-social and aggressive behaviours such as bullying and discrimination of individuals and communities
- ✓ that there are different kinds of responsibilities, rights and duties at home, at school, in the community and towards the environment
- ✓ to resolve differences by looking at alternatives, seeing and respecting others’ points of view, making decisions and explaining choices
- ✓ what being part of a community means, and about the varied institutions that support communities locally and nationally

- ✓ which, why and how, commonly available substances and drugs (including alcohol and tobacco) could damage their immediate and future health and safety, that some are legal, some are restricted and some are illegal to own, use and supply to others
- ✓ how their body will, and emotions may, change as they approach and move through puberty
- ✓ about human reproduction
- ✓ about taking care of their body, understanding that they have autonomy and the right to protect their body from inappropriate and unwanted contact their body autonomy and rights; understanding that actions such as female genital mutilation (FGM) constitute abuse, are a crime and how to get support if they have fears for themselves or their peers
- ✓ strategies for keeping physically and emotionally safe including road safety (including cycle safety- the Bikeability programme), safety in the environment (including rail , water and fire safety), and safety online (including social media, the responsible use of ICT and mobile phones)
- ✓ the importance of protecting personal information, including passwords, addresses and the distribution of images of themselves and others
- ✓ about people who are responsible for helping them stay healthy and safe and ways that they can help these people

- ✓ to develop strategies to resolve disputes and conflict through negotiation and appropriate compromise and to give rich and constructive feedback and support to benefit others as well as themselves
- ✓ that differences and similarities between people arise from a number of factors, including family, cultural, ethnic, racial and religious diversity, age, sex, gender identity, sexual orientation, and disability (see ‘protected characteristics’ in the Equality Act 2010)
- ✓ to realise the nature and consequences of discrimination, teasing, bullying and aggressive behaviours(including cyber bullying, use of prejudice-based language, how to respond and ask for help)
- ✓ to recognise and manage ‘dares’
- ✓ to recognise and challenge stereotypes

- ✓ to recognise the role of voluntary, community and pressure groups, especially in relation to health and wellbeing
- ✓ to appreciate the range of national, regional, religious and ethnic identities in the United Kingdom
- ✓ to think about the lives of people living in other places, and people with different values and customs
- ✓ about the role money plays in their own and others’ lives, including how to manage their money and about being a critical consumer
- ✓ to develop an initial understanding of the concepts of ‘interest’, ‘loan’, ‘debt’, and ‘tax’ (e.g. their contribution to society through the payment of VAT)
- ✓ that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment
- ✓ about enterprise and the skills that make someone ‘enterprising’
- ✓ to explore and critique how the media present information

Also to cover:

- **Music:** African Drumming
- **PE:** Gymnastics
- **PE:** Ball Skills – Tennis/Badminton
- **Languages:** Spanish

Music	<ul style="list-style-type: none"> ✓ 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 	Musical Instruments: • African Drums
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PE	<ul style="list-style-type: none"> ✓ Use running, jumping, throwing and catching in isolation and in combination ✓ Develop flexibility, strength, technique, control and balance [for example, through athletics and gymnastics] ✓ Compare their performances with previous ones and demonstrate improvement to achieve their personal best 	<i>Record performances and evaluate.</i>
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PE	<ul style="list-style-type: none"> ✓ 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 	
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Possible Educational Visits:

- African Drumming Worksop
- Wimbledon Tennis Club

Languages	<ul style="list-style-type: none"> ✓ Listen attentively to spoken language and show understanding by joining in and responding ✓ Explore the patterns and sounds of language through songs and rhymes and link the spelling, sound and meaning of words ✓ Engage in conversations; ask and answer questions; express opinions and respond to those of others; seek clarification and help ✓ Speak in sentences, using familiar vocabulary, phrases and basic language structures ✓ Develop accurate pronunciation and intonation so that others understand when they are reading aloud or using familiar words and phrases ✓ Present ideas and information orally to a range of audiences ✓ Read carefully and show understanding of words, phrases and simple writing ✓ Appreciate stories, songs, poems and rhymes in the language ✓ Broaden their vocabulary and develop their ability to understand new words that are introduced into familiar written material, including through using a dictionary ✓ Write phrases from memory, and adapt these to create new sentences, to express ideas clearly ✓ Describe people, places, things and actions orally and in writing ✓ Understand basic grammar appropriate to the language being studied, including (where relevant): feminine, masculine and neuter forms and the conjugation of high-frequency verbs; key features and patterns of the language; how to apply these, for instance, to build sentences; and how these differ from or are similar to English 	
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