

NATIONAL CURRICULUM CONTENT

TEACHING & LEARNING OUTCOMES

OTHER POINTS TO NOTE

Short Circuit

To include:

- **Science:** Light
- **Science:** Electricity

Possible Educational Visits:

- Science Museum
- Electric Power Plant

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.

Light

- ✓ Recognise that light appears to travel in straight lines
- ✓ Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- ✓ Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- ✓ Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

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.

Electricity

- ✓ Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- ✓ Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- ✓ Use recognised symbols when representing a simple circuit in a diagram.

- Understand the behaviour of light, including light sources and shadows.
- Know that objects are seen because they give out or reflect light into the eye.
- Know how mirrors work.
- Develop an understanding that light travels in straight lines.
- Recognise the different variables which affect the size and shape of a shadow.
- Explore the refraction of light and some of the phenomena it creates.
- Investigate how rainbows are made, together with other light and colour effects.

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

UNIT: Light Up Your World

- Explore how to construct and control circuits of different complexity; drawing diagrams.
- Investigate the brightness and volume of different electrical devices.
- Know the flow of electrons in a circuit to explain the idea of resistance.
- Recognise electrical symbols and how electricity is generated.

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

UNIT: Danger, Low Voltage!

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

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
- ✓ 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

PHSE

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
- ✓ 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

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
- ✓ 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:** Dance – Traditional/Salsa
- **PE:** Ball Skills – Hockey/Lacrosse
- **Languages:** Spanish

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

PE

- ✓ Use running, jumping, throwing and catching in isolation and in combination
- ✓ Develop flexibility, strength, technique, control and balance [for example, through athletics and gymnastics]
- ✓ Perform dances using a range of movement patterns
- ✓ Compare their performances with previous ones and demonstrate improvement to achieve their personal best

- ✓ 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

Musical Instruments:

- African Drums

Record performances and evaluate.

Possible Educational Visits:

- African Drumming Workshop

Languages

- ✓ 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