Layer 2: Stanbridge Primary School Knowledge, Understanding and Skills Year 6

SCIT – Science and Technology

Science – Skills	Science – Programme of Study	ICT
All living things: To be able to make a key to classify plants. To be able to identify scientific evidence that has been used to support or refute ideas or arguments. **Animals including humans:** To be able to plan pattern-seeking enquiry. To be able to report causal relationships. To be able to record results using a line graph. To be able to present findings from enquiries. **Evolution and inheritance:** To be able to identify scientific evidence that has been used to support or refute ideas or arguments. To be able to plan an enquiry that will answer a question. To be able to record data in a table. To be able to measure with a data logger. To be able to present findings from an enquiry. To be able to recognise which secondary sources will be most useful to research ideas (non-statutory). **Light:** To be able to use scientific evidence to support or refute on idea. To be able to use test results to make predictions to set up further comparative tests. To be able to plan a fair-test; recognising and controlling variables. To be able to plan a scientific enquiry to answer a questions. To be able to report as to the degrees of trust in results. **Electricity:** To be able to take repeat measurements of data with precision using a data-logger. To be able to explain the degree of trust can be had in results. To be able to plan a fair-test by recognising the control variables. To be able to use predictions to set up fair tests.	**All living things** Pupils should be taught to: • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics. **Animals including humans** • identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • describe the ways in which nutrients and water are transported within animals, including humans. **Evolution and inheritance** Pupils should be taught to: • 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. **Light** Pupils should be taught to: • understand 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, and to predict the size of shadows when the position of the light source changes. **Electricity** Pupils should be taught to: • 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	**Acceptable Use and E Safety** • Know how to keep their identity private including through privacy features of social networking sites • Use information about how search engines work to choose an appropriate tool to find information • Know that information can be used to promote viewpoints, persuade and influence and be able to critically evaluate web content and validate information • Know about the possible moral, legal and financial consequences linked to copyright and plagiarism • Know the potential risks of mobile phone use and how to minimise them • Know how to choose an appropriate search tool to search effectively and safely and to validate findings and evaluate them for unreliability and bias • Know that services can incur different levels of charging and be aware of possible implications of incentives being offered **ICT Project Title Flowol: Programming** • Plan an algorithm using flow chart notation and then use it to write a program. • Write a program from a given algorithm to achieve a specified outcome. Use the program to test and improve the original algorithm. • Control on screen mimics and physical devices using more than one input and predict the outputs. • Use selection structures in a program. • Create variables in a program. • Use sensors to measure an input in order to trigger a sequence and procedure. • Edit programs using procedures / subroutines to improve efficiency. **ICT Project Title Health and Weather: Data** • Complete data collection and analysis. • Select, collect, check accuracy and analyse the data through selecting appropriate data manipulation tools, and present results. • Solve problems by manipulating and interrogating data and present their findings. • Question the integrity of data and identify where data may be compromised. **ICT Project Title: Marketing: Media** • Take and edit digital images in different ways for different purposes and audiences. • Use a variety of tools and effects to change sounds and music in order to have a different impact on an audience. • Create and amend text based documents selecting an appropriate layout, fonts and tools for contrasting purposes and audience. • Incorporate hyperlinks and transitions in documents and presentations. • Plan film or animation for a specific purpose using green screen where appropriate and aiming to have a specific impact on a

and the on/off position of switches

- use recognised symbols when representing a simple circuit in a diagram.

- specified audience.
- Choose an online communication mechanism for a specific purpose and explain their reasons for choosing it.

ICT Project Title – Websites: Impact Technology
- Know how to find out who information on a web page belongs to
- Know how web sites are designed to have an impact on the audience
- Be able to evaluate web sites and the impact they are designed to have on an audience
- Know some ways to evaluate the reliability of web content
- Know about intellectual property and copyright
- Know how web pages are created and published

HUMS – Geography, History, RE

Geography	History	RE
Location Knowledge - the Prime/Greenwich Meridian and time zones (including day and night) ge60 To use appropriate geographical vocabulary. ge62 To use atlases and globes and maps and plans at a range of scales. ge63 To use and select primary and secondary sources of information and evidence, suggest conclusions and present findings in a variety of ways. **Place knowledge** understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom – links with Bristol/South west (e.g. pirates, slave trade etc ge55 Ask questions, describe and explain geographical patterns, similarities, differences and physical and human processes. ge58 Identify and explain different views ge59 Communicate in appropriate ways and explain their own views. ge60 To use appropriate geographical vocabulary. ge62 To use atlases and globes and maps and plans at a range of scales. ge63 To use and select primary and secondary sources of information and evidence, suggest conclusions and present findings in a variety of ways. **Human and physical geography** - describe and understand key aspects of:	Viking and Anglo-Saxon struggle for the Kingdom of England to the time of Edward the Confessor. This **could** include: - Viking raids and invasion - resistance by Alfred the Great and Athelstan, first king of England - further Viking invasions and Danegeld - Anglo-Saxon laws and justice Edward the Confessor and his death in 1066 hi44 Use an increasing depth of factual knowledge to describe past societies and periods and begin to make links between them. hi45 Recognise features of periods and societies studied. hi47 Identify and describe reasons for and results of, historical events, situations and changes in the periods and societies studied. hi48 Recognise that the past is represented and interpreted in different ways, and give reasons for this. hi49 Use and evaluate a range of sources. hi50 Ask and answer questions. hi51 Record information relevant to the focus of the enquiry. hi52 Recall, select and organise and communicate historical information in a variety of ways. - a study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066 e.g. Bristol & the Sea hi44 Use an increasing depth of factual knowledge to describe past societies and periods and begin to make links between	**Life's Journey** - How do different religions mark significant life events e.g. birth, marriage and death? - *How does my family mark the significant events in life's journey?* **Religions to be covered:** Christianity **and** Hinduism **Expressing and Celebrating Faith** - How do people of faith celebrate and what impact do celebrations have on individuals/ community? - How do places of worship/ worship practices differ within and between religions? - How is faith expressed through lifestyle? - How is faith expressed through the creative arts? - *How do I express my beliefs, values and commitments?* **Religions to be covered:** Christianity**,** Hinduism**,** Sikhism **Faith in a Global Community** - *How do people of faith and others respond to the needs of people in different parts of the world e.g. Fair Trade, Red Crescent etc?* - *Can we make a difference to our global community?* - *What can we learn from people with religious commitment to world peace?* **Lent and Easter** **Learning Objectives** - Pupils should learn: - about the events of Easter Day and about the different accounts of the death and resurrection of Jesus in the Gospels. - that Christians believe that Jesus died and rose again so that good triumphs over evil. - that Christians believe that because Jesus conquered death there is eternal life for all. - to express their own questions about the Christian understanding of life after death. - about the symbolism of the cross for Christians.

- physical geography, including: volcanoes and earthquakes.
- 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 – **link with Place knowledge**
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ge55 Ask questions, describe and explain geographical patterns, similarities, differences and physical and human processes.

ge57 Analyse evidence and draw conclusions.

ge58 Identify and explain different views.

ge59 Communicate in appropriate ways and explain their own views.

ge60 To use appropriate geographical vocabulary.

ge63 To use and select primary and secondary sources of information and evidence, suggest conclusions and present findings in a variety of ways.

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

- use fieldwork to observe, measure and record the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies.

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ge55 Ask questions, describe and explain geographical patterns, similarities, differences and physical and human processes.

ge57 Analyse evidence and draw conclusions.

ge59 Communicate in appropriate ways and explain their own views.

ge60 To use appropriate geographical vocabulary.

ge61 To use appropriate field work techniques and instruments.

ge62 To use atlases and globes and maps and plans at a range of scales.
ge63 To use and select primary and secondary sources of information and evidence, suggest conclusions and present findings in a variety of ways.
ge64 To draw plans and maps at a range of scales

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them.

hi45 Recognise features of periods and societies studied.
hi46 Recognise social, cultural, religious and ethnic diversity in societies.

hi48 Recognise that the past is represented and interpreted in different ways, and give reasons for this.

hi49 Use and evaluate a range of sources.

hi50 Ask and answer questions.

hi51 Record information relevant to the focus of the enquiry.

hi52 Recall, select and organise and communicate historical information in a variety of ways.

Learning Outcomes
Pupils should be able to:
- identify differences and similarities in the Gospel accounts.
- explain how the Christian belief in the resurrection of Jesus affects the lives of Christians today.
- raise their own questions about their own beliefs and how these affect the way they live.

Christmas
Key Question------How is the Christian belief in the Incarnation of God expressed in words, symbols and images.

The children will be able to
• Describe the differences between Matthew and Like
• Explain and ask questions about different images of Jesus
• Express their own interpretation of particular images of Jesus and explain their choice

Creative Development – Art, Music, DT

Art			Music	DT
Drawing	Painting	Printing		
Focus: Close and more detailed observational drawings from different views. **Dr 7i** Use a viewfinder for observational drawing, introduce technique of perspective. **Dr 7ii** Identifying close and specific detail. **Dr iii** Develop own style and compare with other artists and peers. **Art and Design over arching focus:** **Create sketch books to record observations and use to review and revisit ideas.** **Great artists, architects and designers in history.**	**Focus:** Choice of painting media. **Pt7i** Choose appropriate colours, media and equipment for a given brief. **Pt7ii** Independent selection of tools and equipment. Use paint in a focussed way e.g large areas first, working lighter to darker colours. Develop perspective drawing and awareness of receding tones. **Pt7iii** To show some understanding of how work is affected by the medium used and what the artist set out to achieve.	**Focus:** Press prints, found object prints, mono prints (positive and negative) Press prints, found object prints. (1 colour repeat, random, organised) Block prints, pattern, mono prints (over own work or other stimuli) Block prints, 2 colour, mono print adding texture by drawing into. Transferring drawing or image onto press print. Explore styles and types of printing using a variety of shapes and texture. In addition to creating line images within press printing, show texture by using dots, crosses and lines. Repeat printing in one colour either organised or randomly. Make own printing block. Re-create own or others work on Perspex over original and take mono-print. Create 2 colour patterns, looking at different ways to place the print and create texture. Extend mono-print experience by adding texture. Creating own designs using various objects/ materials and use these to explore printing. Create own designs, making them more complex. Discuss objects used within own work and positive response to friends work.. Discuss techniques used. Ask and answer questions about starting points e.g whether particular objects/ textures will print effectively. Predict. Make connections between their own work and real life observations/ similarities e.g. wallpaper, paper bags. Create printing techniques with particular attention to detail. Discuss possible improvements. **Pr7ii** Independently select appropriate tools to develop ideas. **Pr7iii** To show some understanding of how work is affected by the technique and texture used.	Classroom Jazz Fresh Prince of Bel Air Make you Feel my Love **Play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control & expression.** • Sing songs in a variety of styles with confidence • Sing an increasing number from memory • Sing with awareness of phrasing • Sing call and response • Make up words and actions to go with well-known songs • Understand that posture, breathing and diction are important • Show increasing accuracy of pitch and awareness of the shape of melody • Convey the mood or meaning of the song • Demonstrate an awareness of character or style in performance • Adapt and improve a musical performance • <mark>Understand and perform a steady beat</mark> • Understand the difference between rhythm and pulse • Explore accompaniment devices **Improvise and compose music for a range of purpose using inter-related dimensions of music** • Consolidate the concepts of using long-short/fast-slow/high-low/, loud and quiet sounds when exploring and creating music using voices or	**Electrical Systems:More complex switches or circuits** *Prior learning* • *Understanding of the essential characteristics of a series circuit and experience of creating a battery powered, functional, electrical product.* • *Initial experience of using computer control software and an interface box or a standalone box, e.g. writing and modifying a program to make a light flash on and off.* **Designing** • Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost. • Generate and develop innovative ideas and share and clarify these through discussion. • Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. **Making** • Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. • Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. • Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. **Evaluating** • Continually evaluate and modify the working features of the product to match the initial design specification. • Test the system to demonstrate its effectiveness for the intended user and purpose. • Investigate famous inventors who developed ground-breaking electrical systems and components. **Technical knowledge and understanding** • Understand and use electrical systems in their products. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project. **Mechanical Systems: Pulleys or Gears** **Prior learning** • *Experience of axles, axle holders and wheels that are fixed or free moving.* • *Basic understanding of electrical circuits, simple switches and components.* • *Experience of cutting and joining techniques with a range of materials including card, plastic and wood.* • *An understanding of how to strengthen and stiffen structures.* **Designing** • Generate innovative ideas by

instruments

- **Compose short pieces of music in groups – exploring and using the elements of music – texture, tempo & structure**
- Create simple compositions combining rhythm and melody
- Explore rhythmic ostinato patterns
- Explore pitch notes moving by step and by leap in songs and music
- Explore timbre and identify percussion and orchestral instruments
- Explore making music to represent pictures/stories or create mood, e.g. tense or calm sounds
- **Improvise short simple musical pieces using tuned and untuned instruments**
- Combine sounds, movements and words (narrative)
- Use a range of IT to sequence, compose, record and share work.

Listen with attention to detail and recall sounds with increasing aural memory

- Listen to and recall a short musical sequence
- Describe the main features of longer pieces of music
- Identify, where appropriate: A steady beat, a specific rhythm pattern, the speed (tempo) the volume(dynamics) and the melody (pitch)
- Explore more abstract use of sounds
- Listen to and talk about musical features within music which picture a character or scene, e.g. peter and the wolf, carnival for the animals etc.

carrying out
research using surveys, interviews, questionnaires and web-based resources.
• Develop a simple design specification to guide their thinking.
• Develop and communicate ideas through
discussion, annotated drawings, exploded
drawings and drawings from different views.
Making
• Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
• Select from and use a range of tools and
equipment to make products that that are
accurately assembled and well finished. Work within the constraints of time, resources and cost.
Evaluating
• Compare the final product to the original design specification.
• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
• Consider the views of others to improve their work.
• Investigate famous manufacturing and engineering companies relevant to the project.
Technical knowledge and understanding
• Understand that mechanical and electrical systems have an input, process and an output.
• Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.
• Know and use technical vocabulary relevant to the project.

			• Listen for the verse and chorus structure of songs **Use and understand staff & other musical notations** • Explore graphics notation • <mark>Explore rhythm patterns using standard notation to record using crotchets, quavers, minims and semi-breves</mark> • Follow simple hand directions from a leader indicating pitch and tempo • Use music technology to record or compose **Appreciate and understand a wide range of hig-quality live and recorded music drawn from different traditions & from great composers and musicians** • Listen and discuss the style of music from around the british isles – Scotland, Wales, Ireland and England. What makes this music sound *Scottish*? **Develop an understanding of the history of music** • Listen with concentration to longer pieces/extracts of music • Explore the music that was being played at the time of a history topic being studied in class	

Personal, Emotional & Physical Development – PE, PSHE

PSHE & Citizenship	PE			
	REAL PE		**Outdoor and Adventurous Activities**	**Swimming Activities and Water Safety Years 5 & 6**
SRE: Review of all areas and vocab covered. Continue to use vocabulary including; penis, vagina, testicles, pubic hair, periods and breasts, wet dreams & periods Look at stereotypes and media influences	Unit 1- Cognitive Skills (Ball Handling) To take a ball around one leg/alternate legs 16 times in 20 seconds, complete figures of 8 with ball around legs. (Agility: Reaction/Response) To be able to catch and balance on one leg (both legs) from a variety of distances, to catch with stepping and catching across the body. (Game Skills) To throw and catch with both hands, catch with balance. Unit 2- Creative Skills (Static Balance: Seated) To transfer an object from one side to the other using the same hand/pick up an object arms distance away and swap		**Yr 6 Residential** **Acquiring and Developing skills** **oa28** Find solutions to problems and challenges. **Selecting & Applying skills, tactics &**	**Acquiring and Developing skills** **1** Understand basic water safety. **2** Take care and be aware of themselves and others in and around water.

SEAL
1a) to recognise their worth as individuals, by identifying positive things about themselves and their achievements, seeing their mistakes, making amends and setting personal goals;
2a) why and how rules and laws are made and enforced, why different rules are needed in different situations and how to take part in making and changing rules;
4c) to be aware of different types of relationships, including marriage and those between friends and families, and to develop the skills to be effective in relationships;

3e) to recognise the different risks in different situations and then decide how to behave responsibly;
4d) to realise the nature and consequences of racism, teasing, bullying, and aggressive behaviours and how to respond to them and
ask for help;
2c) to realise the consequences of antisocial and aggressive behaviours, such as bullying and racism, on individuals and communities;
4a) that their actions affect themselves and others, to care about other people's feelings and to try to see things from their points of view;

1c) to face new challenges positively by collecting information, looking for help, making responsible choices and taking action;

4b) To think about the lives of people living in other places and times, and people with different values and customs.
2e) to reflect on spiritual, moral, social and cultural issues, using imagination to understand other people's experiences;

hands.
(Static Balance: Floor Work): To hold a full front support position and transfer a cone on and off my back.
(Game Skills): To catch and then send the ball and sometimes play the game from a front support position.

Unit 3- Social Skills
(Dynamic Balance- FUNS Station 5): To perform a marching action, lifting knees up and elbows to a 90 degree angle/be able to walk fluidly and use heel to toe landing.
(Counter Balance- FUNS Station 7): To hold a counter balance with a partner, with a short base and holding with 2 hands, then 1 hand with eyes closed.
(Game Skills): To use hoops or similar large equipment as stepping stones/To have a go at entering opponent's zone (attacking)

Unit 4- Applying Physical Skills
(Dynamic Balance to Agility): To jump from 2 feet to 2 feet with 180 degree turn in both directions and land in balance. To perform a tuck jump and land with balance.
(Static Balance- 1 leg standing): To balance for 30 seconds on either leg with eyes closed/to do 5 90 degree squats on either leg.
(Game Skills): To perform single jumps with controlled landings/perform 'simple' jump, roll and balance sequences.

Unit 5- Health and Fitness
(Static Balance: Small Base): To maintain balance while: picking up alternate knees 5 times/catching and throwing a large ball to a partner.
(Coordination: Floor Movement): To be able to hop-scotch, alternating hopping leg/do a 3 step zigzag pattern forward and backwards.
(Game Skills): To pick up and place using dominant hand/throw and catch with 2 hands, using a larger ball.

Unit 6- Personal Skills
(Coordination with Equipment): To be able to strike a large, soft ball along the ground with alternate hands, 5 times in a rally. To be able to roll 2 balls alternately (using both hands), sending one as the other is returning.
(Agility- Ball Chasing): To react and chase a large ball rolled by a partner/to roll a tennis ball myself, chase it, let it roll through my legs and then collect it facing the opposite direction.
(Game Skills): To play with dominant hand/foot and choose basic equipment. To choose equipment/technique to enable regular strikes of the ball.

compositional ideas
oa29 Prepare physically and organisationally for challenges they are set, taking into account group safety.

Knowledge & Understanding of fitness and health
oa30 Identify and respond to events as they happen.

Evaluating and improving performance
oa31 Evaluate effective responses and solutions.

3 Enter water carefully.

4 Move in water.

5 Float and move with and without swimming aids.

6 Feel the buoyancy of water without swimming aids.

7 Move self on and below the water using different swimming aids, arm and leg actions and basic strokes.

8 Propel self on and below the water using different swimming aids, arm and leg actions and basic strokes.

9 Swim 5m to 20m, first with aids and then without.