**Year 5 & 6 Curriculum**

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| **SCIENCE** | | **ART** | | **D&T** | |
| **To work scientifically** | •Plan enquiries, including recognising and controlling variables where necessary.  • Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.  • Take measurements, using a range of scientific equipment, with increasing accuracy and precision.  • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models.  • Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.  • Present findings in written form, displays and other presentations.  • Use test results to make predictions to set up further comparative and fair tests.  • Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments. | **To develop ideas** | • Develop and imaginatively extend ideas from starting points throughout the curriculum.  • Collect information, sketches and resources and present ideas imaginatively in a sketch book.  • Use the qualities of materials to enhance ideas.  • Spot the potential in unexpected results as work progresses.  • Comment on artworks with a fluent grasp of visual language. | **Food** | • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).  • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.  • Demonstrate a range of baking and cooking techniques.  • Create and refine recipes, including ingredients, methods, cooking times and temperatures. |
| **To understand plants** | • Relate knowledge of plants to studies of evolution and inheritance.  • Relate knowledge of plants to studies of all living things. | **Painting** | • Sketch (lightly) before painting to combine line and colour.  • Create a colour palette based upon colours observed in the natural or built world.  • Use the qualities of watercolour and acrylic paints to create visually interesting pieces.  • Combine colours, tones and tints to enhance the mood of a piece.  • Use brush techniques and the qualities of paint to create texture.  • Develop a personal style of painting, drawing  upon ideas from other artists. | **Materials** | • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).  • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). |
| **To understand animals and humans** | • Describe the changes as humans develop to old age.  • Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.  • Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions.  • Describe the ways in which nutrients and water are transported within animals, including humans. | **Sculpture** | • Mix textures (rough and smooth, plain and  patterned).  • Combine visual and tactile qualities.  • Use ceramic mosaic materials and techniques. | **Textiles** | • Create objects (such as a cushion) that employ a seam allowance.  • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).  • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). |
| **Electricals and electronics** | • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). |
| **To investigate living things** | • 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.  • Describe how living things are classified into broad groups according to common observable characteristics.  • Give reasons for classifying plants and animals based on specific characteristics. | **Collage** | • Show life-like qualities and real-life proportions or, if more abstract, provoke different interpretations.  • Use tools to carve and add shapes, texture and pattern.  • Combine visual and tactile qualities.  • Use frameworks (such as wire or moulds) to  provide stability and form. | **Computing** | • Write code to control and monitor models or products. |
| **To understand evolution and inheritance** | • 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. | **Construction** | • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). |
| **To investigate materials** | • Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets.  • Understand how 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, oxidisation and the action of acid on bicarbonate of soda. | **Drawing** | • Use a variety of techniques to add interesting effects (e.g. reflections, shadows, direction of sunlight).  • Use a choice of techniques to depict movement, perspective, shadows and reflection.  • Choose a style of drawing suitable for the work (e.g. realistic or impressionistic).  • Use lines to represent movement. | **Mechanics** | • Convert rotary motion to linear using cams.  • Use innovative combinations of electronics (or computing) and mechanics in product designs. |
| **To design, make, evaluate and improve** | • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).  • Make products through stages of prototypes, making continual refinements.  • Ensure products have a high quality finish, using art skills where appropriate.  • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. |
| **To understand movement, forces and magnets** | Magnets  • Describe magnets as having two poles.  • Predict whether two magnets will attract or repel each other, depending on which poles are facing.  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 effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces.  • Describe, in terms of drag forces, why moving objects that are not driven tend to slow down.  • Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.  • Understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect. | **Printing** | • Build up layers of colours.  • Create an accurate pattern, showing fine detail.  • Use a range of visual elements to reflect the purpose of the work. |
| **To understand light and seeing** | • 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 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.  *• 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.* | **Textiles** | • Show precision in techniques.  • Choose from a range of stitching techniques.  • Combine previously learned techniques to create pieces. |
| **To investigate sound and hearing** | • Find patterns between the pitch of a sound and features of the object that produced it.  • Find patterns between the volume of a sound and the strength of the vibrations that produced it.  • Recognise that sounds get fainter as the distance from the sound source increases. | **Digital Media** | • Enhance digital media by editing (including sound, video, animation, still images and installations). | **To take inspiration from design throughout history** | • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.  • Create innovative designs that improve upon existing products.  • Evaluate the design of products so as to suggest improvements to the user experience. |
| **To understand electrical circuits** | • 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.. | **Inspiration from the greats** | • Give details (including own sketches) about the style of some notable artists, artisans and designers.  • Show how the work of those studied was influential in both society and to other artists.  • Create original pieces that show a range of influences and styles. |
| **To understand the Earth’s movement in 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.* |

**Year 3 & 4 Curriculum**

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| **GEOGRAPHY** | | **MUSIC** | | **PE** | |
| **To investigate places** | • Collect and analyse statistics and other information in order to draw clear conclusions about locations.  • Identify and describe how the physical features affect the human activity within a location.  • Use a range of geographical resources to give detailed descriptions and opinions of the characteristic features of a location.  • Use different types of fieldwork sampling (random and systematic) to observe, measure and record the human and physical features in the local area. Record the results in a range of ways.  • Analyse and give views on the effectiveness of different geographical representations of a location (such as aerial images compared with maps and topological maps - as in London’s Tube map).  • Name and locate some of the countries and cities of the world and their identifying human and physical characteristics, including hills, mountains, rivers, key topographical features and land-use patterns; and understand how some of these aspects have changed over time.  • Name and locate the countries of North and South America and identify their main physical and human characteristics. | **To perform** | • Sing or play from memory with confidence.  • Perform solos or as part of an ensemble.  • Sing or play expressively and in tune.  • Hold a part within a round.  • Sing a harmony part confidently and accurately.  • Sustain a drone or a melodic ostinato to accompany singing.  • Perform with controlled breathing (voice) and skillful playing (instrument). | **Games** | • Choose and combine techniques in game situations (running, throwing, catching, passing, jumping and kicking, etc.).  • Work alone, or with team mates in order to gain points or possession.  • Strike a bowled or volleyed ball with accuracy.  • Use forehand and backhand when playing racket games.  • Field, defend and attack tactically by anticipating the direction of play.  • Choose the most appropriate tactics for a game.  • Uphold the spirit of fair play and respect in all competitive situations.  • Lead others when called upon and act as a good role model within a team. |
| **To compose** | • Create songs with verses and a chorus.  • Create rhythmic patterns with an awareness of timbre and duration.  • Combine a variety of musical devices, including melody, rhythm and chords.  • Thoughtfully select elements for a piece in order to gain a defined effect.  • Use drones and melodic ostinati (based on the pentatonic scale).  • Convey the relationship between the lyrics and the melody.  • Use digital technologies to compose, edit and refine pieces of music. | **Dance** | • Compose creative and imaginative dance sequences.  • Perform expressively and hold a precise and strong body posture.  • Perform and create complex sequences.  • Express an idea in original and imaginative ways.  • Plan to perform with high energy, slow grace or other themes and maintain this throughout a piece.  • Perform complex moves that combine strength and stamina gained through gymnastics activities (such as cartwheels or handstands). |
| **To investigate patterns** | • Identify and describe the geographical significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, and time zones (including day and night).  • Understand some of the reasons for geographical similarities and differences between countries.  • Describe how locations around the world are changing and explain some of the reasons for change.  • Describe geographical diversity across the world.  • Describe how countries and geographical regions are interconnected and interdependent. | **To transcribe** | • Use the standard musical notation of crotchet, minim and semibreve to indicate how many beats to play.  • Read and create notes on the musical stave.  • Understand the purpose of the treble and bass clefs and use them in transcribing compositions.  • Understand and use the # (sharp) and ♭ (flat) symbols.  • Use and understand simple time signatures. | **Gymnastics** | • Create complex and well-executed sequences that include a full range of movements including:  • travelling  • balances  • swinging  • springing  • flight  • vaults  • inversions  • rotations  • bending, stretching and twisting  • gestures  • linking skills.  •Hold shapes that are strong, fluent and expressive.  • Include in a sequence set pieces, choosing the most appropriate linking elements.  • Vary speed, direction, level and body rotation during floor performances.  • Practise and refine the gymnastic techniques used in performances (listed above).  • Demonstrate good kinesthetic awareness (placement and alignment of body parts is usually good in well-rehearsed actions).  • Use equipment to vault and to swing (remaining upright) |
| **To describe music** | • Choose from a wide range of musical vocabulary to accurately describe and appraise music including:  • pitch  • dynamics  • tempo  • timbre  • texture  • lyrics and melody  • sense of occasion  • expressive  • solo  • rounds  • harmonies  • accompaniments  • drones  • cyclic patterns  • combination of musical elements  • cultural context.  • Describe how lyrics often reflect the cultural context of music and have social meaning. |
| **To communicate geographically** | • 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: settlements, land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals, and water supplies.  • Use the eight points of a compass, four-figure grid references, symbols and a key (that uses standard Ordnance Survey symbols) to communicate knowledge of the United Kingdom and the world.  • Create maps of locations identifying patterns (such as: land use, climate zones, population densities, height of land). |  |  |
| **HISTORY** | |  |  | **Swimming** |  |
| **To investigate and interpret the past** | • Use sources of evidence to deduce information about the past.  • Select suitable sources of evidence, giving reasons for choices.  • Use sources of information to form testable hypotheses about the past.  • Seek out and analyse a wide range of evidence in order to justify claims about the past.  • Show an awareness of the concept of propaganda and how historians must understand the social context of evidence studied.  • Understand that no single source of evidence gives the full answer to questions about the past.  • Refine lines of enquiry as appropriate. |  |  |
| **To build an overview of world history** | • Identify continuity and change in the history of the locality of the school.  • Give a broad overview of life in Britain from medieval until the Tudor and Stuarts times.  • Compare some of the times studied with those of the other areas of interest around the world.  • Describe the social, ethnic, cultural or religious diversity of past society.  • Describe the characteristic features of the past, including ideas, beliefs, attitudes and experiences of men, women and children. |  |  | **Athletics** | • Combine sprinting with low hurdles over 60 metres.  • Choose the best place for running over a variety of distances.  • Throw accurately and refine performance by analysing technique and body shape.  • Show control in take off and landings when jumping.  • Compete with others and keep track of personal best performances, setting targets for improvement. |
| **To understand chronology** | • Describe the main changes in a period of history (using terms such as: social, religious, political, technological and cultural).  • Identify periods of rapid change in history and contrast them with times of relatively little change.  • Understand the concepts of continuity and change over time, representing them, along with evidence, on a time line.  • Use dates and terms accurately in describing events. |  |  | **Outdoor and adventurous activities** | • Select appropriate equipment for outdoor and adventurous activity.  • Identify possible risks and ways to manage them, asking for and listening carefully to expert advice.  • Embrace both leadership and team roles and gain the commitment and respect of a team.  • Empathise with others and offer support without being asked. Seek support from the team and the experts if in any doubt.  • Remain positive even in the most challenging circumstances, rallying others if need be.  • Use a range of devices in order to orientate themselves.  • Quickly assess changing conditions and adapt plans to ensure safety comes first. |
| **To communicate historically** | • Use appropriate historical vocabulary to communicate, including:  • dates  • time period  • era  • chronology  • continuity  • change  • century  • decade  • legacy.  • Use literacy, numeracy and computing skills to a exceptional standard in order to communicate information about the past.  • Use original ways to present information and ideas. |  |  |