



St Joseph's Curriculum Year Five Key Skills

Learning Objectives, Milestones and Opportunities are split up into the following subject areas: Personal Development, Music, Computing, Physical Education, Art and Design, Design Technology, History, Geography, Languages (for KS2 only) and Science. The Multi-faith lessons that should be covered in each year group are also included.

Learning Objectives, Milestones and Opportunities are taken from the following website:

<http://www.essentials.uk.com/Carousel.php>

Year 1 and 2 skills are taken from milestone 1, Year 3 and 4 are taken from milestone 2 and Year 5 and 6 are taken from milestone 3.

Teachers are to use the skills to help plan progressive lessons and can refer to the website if more or less challenging milestones are needed. (There are also 'support' milestones available.)

Challenge milestones are available on the website (based on the Year 7,8 and 9 curriculum) and these are also available on the Y5 and Y6 skills sheets, where suitable. These challenge objectives are highlighted in blue.

The learning objectives are recommended by Chris Quigley, however they can be changed to suit the learning and can be made more specific.

Teachers can choose topics through which to teach the skills. Some topics work well in certain year groups and so have been mentioned on the skills sheets. These are typed in green font.

The skills for each subject are set out in no particular order and should be highlighted when they have been taught. There are also some skills that will run throughout the year within different units, for example: design, make and evaluate in Design Technology lessons, using sources of evidence in History and working scientifically in Science. The skills are not allocated in terms of time.

The milestones for Personal Development do not need to all be covered, but planning should take into the account the needs of the class and the skills should be integrated into all subject areas.

Skills for swimming can be found on the Year 3 sheet, as this is the year group that will attend swimming lessons.

For Religious Education lessons, we will continue to follow the 'Learning and Growing as the People of God scheme.'

Personal Development

Learning Objectives

- To try new things
- To work hard
- To concentrate
- To push oneself
- To imagine
- To improve
- To understand others
- To not give up

Milestones and Opportunities

- Discuss and learn techniques to improve in the eight 'areas of success' –see below.
- Study role models who have achieved success.
- Study those who have lost success and relate this to the eight 'areas of success'.

To try new things

- Enjoy new things and take opportunities wherever possible.
- Find things to do that give energy.
- Become fully involved in clubs or groups.
- Meet up with others who share interests in a safe environment.

To work hard

- Have fun working hard.
- Understand the benefits of effort and commitment.
- Continue to practise even when accomplished.
- Encourage others by pointing out how their efforts gain results.

To concentrate

- Give full concentration.
- 'Tune out' most distractions.
- Understand techniques and methods that aid concentration.
- Develop expertise and deep interest in some things.

To push themselves

- Find ways to push past doubts, fears, or a drop in motivation even in challenging circumstances.
- Push oneself in areas that are not so enjoyable.
- Listen to others who encourage and help, thanking them for their advice.
- Reflect upon how pushing past doubts, fears or a drop in motivation leads to a different outlook.

To imagine

- Generate lots of ideas.
- Show a willingness to be wrong.
- Know which ideas are useful and have value.
- Act on ideas.
- Ask lots of questions.

To improve

- Clearly identify own strengths.
- Identify areas for improvement.
- Seek the opinion of others to help identify improvements.
- Show effort and commitment in refining and adjusting work.

To understand others

- Listen first to others before trying to be understood.
- Change behaviours to suit different situations.
- Describe and understand others' points of view.

To not give up

- Show a determination to keep going, despite failures or set backs.
- Reflect upon the reasons for failures and find ways to bounce back.
- Stick at an activity even in the most challenging of circumstances.
- See possibilities and opportunities even after a disappointment.
- Consider oneself to be lucky and understand the need to look for luck.

Music

Learning Objectives

To perform

To compose

To transcribe

To describe music

Milestones and Opportunities

To Perform

- Play and perform in solo and ensemble contexts, using voice and playing instruments with increasing accuracy, control and expression.
- 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 skilful playing (instrument).
- Identify and use expressively the inter-related dimensions of music with increasing sophistication (such as through extended use of tonalities, different types of scales and other musical devices).
- Develop vocal and/or instrumental fluency, accuracy and expressiveness.

To compose

- Improvise and compose music using the inter-related dimensions of music separately and in combination.
- 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.
- Compose, extend and develop musical ideas by drawing on a range of musical structures, styles, genres and traditions.

To transcribe

- Use and understand the basics of the staff and other musical notations.
- Use the standard musical notation of crotchet, minim and semibreve to indicate how many beats to play.
- Read and create notes on the musical staff.
- Understand the purpose of the treble and bass clefs and use them in transcribing compositions.
- Understand and use the # (sharp) and \flat (flat) symbols.
- Use and understand simple time signatures.
- Use the staff and other relevant notations appropriately and accurately in a range of musical styles, genres and traditions.

To describe music

- Listen with attention to detail and recall sounds with increasing aural memory.
- Appreciate and understand a wide range of high-quality live and recorded music from different traditions and from great musicians and composers.
- Develop an understanding of the history of 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.
- Listen with increasing discrimination to a wide range of music from great composers.
- Develop a deep understanding of the music that they perform and listen to, and its history.
- Understand musical structures, styles, genres and traditions and identify the expressive use of musical elements.
- Appreciate and understand a wide range of musical contexts and styles to inform judgments.

Computing

Learning Objectives

- To code
- To connect
- To communicate
- To collect

Key Stage Two Opportunities

- Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- Use sequence, selections and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs.
- Use logical reasoning to explain how a simple algorithm works, detect and correct errors in algorithms and programs.
- Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.
- Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- Use a range of devices and applications across all curriculum subjects.
- Further develop coding skills and applications.
- Communicate a wide range of ideas to a variety of audiences.
- Collect, manipulate and analyse data.

Year Five / Six Milestones

To code (using Scratch)

Motion

- Set IF conditions for movements. Specify types of rotation giving the number of degrees.

Looks

- Change the position of objects between screen layers (send to back, bring to front).

Sound

- Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.

Draw

- Combine the use of pens with movement to create interesting effects.

Events

- Set events to control other events by 'broadcasting' information as a trigger.

Control

- Use IF THEN ELSE conditions to control events or objects.

Sensing

- Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.

Variables and lists

- Use lists to create a set of variables.

Operators

- Use the Boolean operators: $() < ()$ $() = ()$ $() > ()$ $() \text{and} ()$ $() \text{or} ()$ $\text{Not} ()$ to define conditions.
 - Use the Reporter operators $() + ()$ $() - ()$ $() * ()$ $() / ()$ to perform calculations.
 - Pick Random $()$ to $()$
 - Join $()$ $()$
 - Letter $()$ of $()$
 - Length of $()$
 - $() \text{ Mod } ()$ This reports the remainder after a division calculation
 - Round $()$
 - $()$ of $()$.
- Design and use computer abstractions that model real world problems and physical systems.
 - Understand some key algorithms for sorting and searching.
 - Use a number of programming languages to solve a variety of computational problems.
 - Use data structures such as tables or arrays.
 - Use procedures to write modular programs.
 - Understand Boolean logic (such as AND, OR and NOT) and its use in determining which parts of a program are executed.
 - Explain how instructions are stored and executed within a computer system.

To connect

- Collaborate with others online on sites approved and moderated by teachers.

- Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.
- Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.
- Understand the effect of online comments and show responsibility and sensitivity when online.
- Understand how simple networks are set up and used.
- Understand the devices and applications that make up networked computer systems and how they interact.
- Explain how networks such as the internet work.
- Understand how computers can monitor and control physical systems.

To communicate

- Choose the most suitable applications and devices for the purposes of communication.
- Use many of the advanced features in order to create high quality, professional or efficient communications.
- Undertake creative projects that involve selecting, using and combining multiple applications, across a range of devices, to achieve goals.
- Create, reuse, revise and repurpose digital information and content with attention to design, intellectual property and audience.

To collect

- Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.
- Explain how data of various types can be represented and manipulated in the form of binary digits including numbers, text, sounds and pictures.
- Collect and analyse data.

Physical Education

Learning Objectives

To develop practical skills in order to participate, compete and lead a healthy lifestyle.

Milestones and Opportunities

To develop practical skills in order to participate, compete and lead a healthy lifestyle

- Develop techniques and improve performances.
- Compare performances with previous ones to achieve a personal best.
- Become more competent, confident and expert in techniques.
- Understand what makes a performance effective and apply these principles to own and others' work.
- Take part in competitive sports and activities outside school through community links or sports clubs.
- Develop the confidence and interest to get involved in exercise and sports and activities out of school and in later life.

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.
- Play competitive games, modified where appropriate and apply basic principles suitable for attacking and defending.
- Use a range of tactics and strategies to overcome opponents in face-to-face competition through team and individual games.

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).

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).

Athletics

- Combine sprinting with low hurdles over sixty 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.

Outdoor and Adventurous Activity

- Show an ability to both lead and form part of a team and work independently.
- 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.

Art and Design

Learning Objectives

To develop ideas.

To master techniques.

To take inspiration from the greats.

Milestones and Opportunities

To develop ideas

- Use experiences, other subjects across the curriculum and ideas as inspiration for artwork.
- 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.

To master techniques:

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.

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.

Collage

- Mix textures (rough and smooth, plain and patterned).
- Combine visual and tactile properties.
- Use ceramic mosaic materials and techniques.

Print (William Morris)

- 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.

Digital media

- Enhance digital media quality by editing (including animation and still images).

To take inspiration from the great artists (classic and modern):

- 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.
- Learn about the great artists, architects and designers in history.

Challenge Milestones:

- Use a range of drawing techniques to record observations and to generate ideas.
- Use a range of media including oils, watercolours, videos and installations.
- Study the history of art, craft and design, including major movements from ancient to modernist periods.
- Develop ideas and increase proficiency in their execution.
- Develop a critical understanding of artists, architects and designers, expressing reasoned judgments that can inform work.
- Increase proficiency in drawing and in handling different materials.
- Analyse and evaluate work to strengthen the visual impact.
- Apply knowledge and ideas from the great artists, architects and designers from ancient to modernist periods.

Design and Technology

Learning Objectives

To master practical skills.

To design, make, evaluate and improve.

To take inspiration from design throughout history.

Milestones and Opportunities

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. Children should be taught the skills of designing, making and evaluating.

To master practical skills:

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.
- Understand and apply the principles of a healthy and varied diet.
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

Materials

- Cut materials with precision and refine and 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).

Computing

- Write codes to control and monitor models or products.
- Apply their understanding of computing to programme, monitor and control their products.

Construction (Moving toys)

- Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Mechanics

- Convert rotary motion to linear using cams.
- Use innovative combinations of electronics (or computing) and mechanics in product designs.
- Understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages.

- Increase skills, knowledge and competence in using materials, machinery, technique and processes.
- Complete common practical, diagnostic, repair and maintenance tasks and multi-stage processes.
- Develop well-conceived and well-executed practical solutions.
- Select and use complex tools, equipment, machinery and techniques skillfully.
- Develop sophisticated practical skills and carry out diagnostic, repair and maintenance tasks in a range of contexts.
- Explore materials and technological developments, and experiment with using them.
- Understand the importance of nutrition, a balanced diet and about the characteristics of a broad range of ingredients in choosing and preparing food.
- Cook a repertoire of savoury meals and become confident in a range of cooking techniques.

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.
- 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.
- Select from and use a wider range of tools and equipment to perform practical tasks, such as 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.

- 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.
- Plan, design, make and evaluate a range of quality products, in a variety of materials that are fit for purpose.
- Communicate ideas and designs skilfully and accurately in 2D and 3D, using a variety of techniques, including computing.

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
- Understand how key events and individuals in design and technology have helped shape the world.
- Analyse the work of others, including iconic designs, to inform work.
- Use historical and contextual references to influence and improve work.
- Understand developments in design and technology and the responsibilities of designers, including environmental responsibilities.

History

Learning Objectives

To investigate and interpret the past.

To build an overview of world history.

To understand chronology.

To communicate historically.

Milestones and Opportunities

Study:

- Britain's settlement by Anglo-Saxons and Scots.
- Ancient Greece
- A non- European society that contrasts with British history chosen from: Early Islamic Civilization, Mayan Civilization or Benin

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.
- Sift evidence and select appropriate sources.
- Understand the need to use a range of information from a wide variety of sources.
- Evaluate the reliability of sources.
- Create and test hypotheses, using evidence to make claims.

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.
- Build upon a growing knowledge about the significant people and events that have shaped our nation and the world.
- Look at history from different cultural perspectives.
- Understand how some of the political, religious, social and economic circumstances that prevail today may be linked to past events throughout history.

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.
- Understand the changes within and between time periods.
- Understand how some changes take centuries whilst others are more rapid and give examples with evidence.

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 an exceptional standard in order to communicate information about the past.
- Use original ways to present information and ideas.
- Become fluent in the use of historical vocabulary and techniques.

Geography

Learning Objectives

To investigate places.

To investigate patterns.

To communicate geographically.

Milestones and Opportunities

To investigate places

- Identify and describe how the physical features affect the human activity within 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 using a range of methods. Record the results in a range of ways (including sketch maps, plans and graphs and digital technologies).
- 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 America and identify their main physical and human characteristics.
- Understand geographical similarities and differences through the study of the human and physical geography of a region or area within North or South America.
- Locate the geographic zones of the world and understand the significance of them.

To investigate patterns

- Describe how locations around the world are changing and explain some of the reasons for change. (Global warming)
- Describe geographical diversity across the world.
- Describe how countries and geographical regions are interconnected and interdependent. (Trade links)
- Use a wide range of geographical sources in order to investigate places and patterns.

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).
- Communicate knowledge of complex geographical systems.

Languages

Learning Objectives

To read fluently

To write imaginatively

To speak confidently

To understand the culture of the countries in which the language is spoken

Milestones and Opportunities

To read fluently.

- Read and understand the main points and some of the detail in short written texts.
- Use the context of a sentence or a translation dictionary to work out the meaning of unfamiliar words.
- Show confidence in reading aloud, and in using reference materials.

To write imaginatively

- Write short texts on familiar topics.
- Use dictionaries or glossaries to check words.
- Convey meaning (although there may be some mistakes, the meaning can be understood with little or no difficulty).

To speak confidently

- Understand the main points and opinions in spoken passages.
- Give a short prepared talk that includes opinions.
- Take part in conversations to seek and give information.

To understand the culture of the countries in which language is spoken

- Give detailed accounts of customs, history and culture of the countries and communities where the language is spoken.
- Describe, with interesting detail, some similarities and differences between countries and communities where the language is spoken and this country.

Science

(Also see Notes and Guidance (Non-statutory requirements from the National Curriculum))

Programmes of Study

- **Working Scientifically – to be covered throughout the units**
- Living things and their habitats
- Animals, including humans
- Properties and changes of materials
- Earth and Space
- Forces

Learning Objectives

- To work scientifically
- To understand plants
- To understand animals and humans
- To investigate living things
- To understand evolution and inheritance
- To investigate materials
- To understand movement, forces and magnets
- To understand the Earth's movement in space
- To investigate light and seeing
- To investigate sound and hearing
- To understand electrical circuits

Milestones and Opportunities

Working Scientifically

- Plan different types of scientific enquiries to answer questions, 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, taking repeat readings where appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models.
- Use test results to make predictions to set up further comparative and fair tests.
- Report and present findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.
- Ask questions and develop lines of enquiry based on observations.
- Make predictions using scientific knowledge and understanding.
- Plan and design investigations and experiments to make observations and test predictions.
- Identify independent, dependent and control variables and other factors to be taken into account when collecting evidence and data.
- Select appropriate techniques, apparatus, and materials during fieldwork and laboratory work, working safely.
- Make and record observations and measurements using a range of methods for different investigations.
- Evaluate the reliability of methods and suggest possible improvements.
- Present observations and data using appropriate methods, including tables and graphs.
- Interpret observations and data.
- Present reasoned explanations.
- Evaluate data, showing awareness of potential errors.
- Identify questions arising from results of investigations.
- Work objectively with concern for validity.
- Understand the need for collaborative research and peer review.
- Evaluate risks.
- Understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature.
- Use and derive simple equations.
- Undertake data analysis.

Living things and their habitats

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

Animals, including humans

- Describe the changes as humans develop from birth to old age.

Properties and changes of materials

- Compare and group together everyday materials based on evidence from comparative and fair tests and on the basis of their properties, including their hardness, solubility, transparency, 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, oxidation and the action of acid on bicarbonate of soda.

Earth and Space

- Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.
- Describe the movement of the Moon relative to the Earth.
- Describe the Sun, Earth and Moon as approximately spherical bodies.
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Forces

- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces.
- Recognise that some mechanics, including levers, pulleys and gears, allow a smaller force to have a greater effect.
- 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.

Multi-Faith

Islam

- Ramadan (dates vary)
- Eid-ul-Fitr (dates vary)
- Eid-UI-Adha (Oct / Nov)
- Al-Hijira (Nov)
- Milad un Nabi - Birthday of the Prophet Muhammad (Feb)