

# St. Bernadette's Computing Curriculum Map



**NCCE Complete Scheme of work and hyperlinks to each folder**



# St Bernadette's e-Safety Long Term Planner – Progression, Skills and Expectations

At St. Bernadette's e-safety requirements are a whole school responsibility & are taught across the curriculum, becoming part of the life of St Bernadette's – they are not just something for computing lessons. We have designed our Computing Curriculum to teach Online Safety unit at the start of each academic year and this also weaves through all the lessons that we teach within Computing but also PSHE and other curriculum areas. Please see Online Safety Tab on the class Webpage

	<b>Early Years:</b> To recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes safely.						
NC	<b>KS1:</b> To ensure that pupils in KS1 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.			<b>KS2:</b> To ensure that pupils in KS2 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.			
	Early Years	Year 1 Objectives	Year 2 Objectives	Year 3 Objectives	Year 4 Objectives	Year 5 Objectives	Year 6 Objectives
e-Safety: End of Year Expectations	<ul style="list-style-type: none"> <li>I can keep my password private.</li> <li>I can tell an adult when I see something unexpected or worrying online.</li> <li>I know that I have to be kind and polite online.</li> <li>I know that I should only use websites for my age.</li> <li>I can agree &amp; follow sensible e-safety rules.</li> </ul>	<ul style="list-style-type: none"> <li>I can keep my password private.</li> <li>I can tell you what personal information is.</li> <li>I can tell an adult when I see something unexpected or worrying online.</li> <li>I can talk about why it's important to be kind and polite.</li> <li>I can recognise an age-appropriate website.</li> <li>I can agree and follow sensible e-Safety rules.</li> </ul>	<ul style="list-style-type: none"> <li>I can explain why I need to keep my password and personal information private.</li> <li>I can describe the things that happen online that I must tell an adult about.</li> <li>I can talk about why I should go online for a short amount of time.</li> <li>I can talk about why it is important to be kind and polite online and in real life.</li> <li>I know that not everyone is who they say they are on the Internet.</li> </ul>	<ul style="list-style-type: none"> <li>I can talk about what makes a secure password and why they are important.</li> <li>I can protect my personal information when I do different things online.</li> <li>I can use the safety features of websites as well as reporting concerns to an adult.</li> <li>I can recognise websites and games appropriate for my age.</li> <li>I can make good choices about how long I spend online.</li> <li>I ask an adult before downloading files and games from the Internet.</li> <li>I can post positive comments online.</li> </ul>	<ul style="list-style-type: none"> <li>I choose a secure password when I am using a website.</li> <li>I can talk about the ways I can protect myself and my friends from harm online.</li> <li>I use the safety features of websites as well as reporting concerns to an adult.</li> <li>I know that anything I post online can be seen by others.</li> <li>I choose websites and games that are appropriate for my age.</li> <li>I can help my friends make good choices about the time they spend online.</li> <li>I can talk about why I need to ask a trusted adult before downloading files and games from the Internet.</li> <li>I comment positively and respectfully online</li> </ul>	<ul style="list-style-type: none"> <li>I protect my password and other personal information.</li> <li>I can explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult.</li> <li>I know that anything I post online can be seen, used and may affect others.</li> <li>I can talk about the dangers of spending too long online or playing a game.</li> <li>I can explain the importance of communicating kindly and respectfully.</li> <li>I can discuss the importance of choosing an age-appropriate website or game.</li> <li>I can explain why I need to protect my computer or device from harm. I know which resources on the Internet I can download and use.</li> </ul>	<ul style="list-style-type: none"> <li>I protect my password and other personal information.</li> <li>I can explain the consequences of sharing too much about myself online.</li> <li>I support my friends to protect themselves and make good choices online, including reporting concerns to an adult.</li> <li>I can explain the consequences of spending too much time online or on a game.</li> <li>I can explain the consequences to myself and others of not communicating kindly and respectfully.</li> <li>I protect my computer or device from harm on the Internet.</li> </ul>



<p><b>Year 1</b></p>	<p>Develop your learners' understanding of technology and how it can help them. They will become more familiar with the different components of a computer by developing their keyboard and mouse skills, and also start to consider how to use technology responsibly.</p>	<p>Explore the world of digital art and its exciting range of creative tools with your learners. Empower them to create their own paintings, while getting inspiration from a range of other artists. Conclude by asking them to consider their preferences when painting with, and without, the use of digital devices.</p>	<p>Promote your learners' understanding of the various aspects of using a computer to create and change text. Learners will familiarise themselves with typing on a keyboard and begin using tools to change the look of their writing, and then they will consider the differences between using a computer and writing on paper to create text.</p>	<p>This unit introduces pupils to data and information. They will begin by using labels to put objects into groups, and labelling these groups. Pupils will demonstrate that they can count a small number of objects, before and after the objects are grouped. They will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose. Finally, pupils will use their ability to sort objects into different groups to answer questions about data.</p>	<p>This unit introduces learners to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of algorithms.</p>	<p>This unit introduces learners to on-screen programming through ScratchJr. Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs. Learners will also be introduced to the early stages of program design through the introduction of algorithms.</p>
	<p><u><a href="#">Computing systems and networks – Technology around us</a></u></p> <p><u><a href="#">Unit guide</a></u> <u><a href="#">Learning graph</a></u> <u><a href="#">Lessons</a></u></p> <p><u><a href="#">Lesson 1 Technology in our classroom</a></u></p> <p><u><a href="#">Lesson 2 Using technology</a></u></p> <p><u><a href="#">Lesson 3 Developing mouse skills</a></u></p> <p><u><a href="#">Lesson 4 Using a computer keyboard</a></u></p> <p><u><a href="#">Lesson 5 Developing keyboard skills</a></u></p> <p><u><a href="#">Lesson 6 Using a computer responsibly</a></u></p>	<p><u><a href="#">Creating media – Digital painting</a></u></p> <p><u><a href="#">Unit guide</a></u> <u><a href="#">Learning graph</a></u> <u><a href="#">Lessons</a></u></p> <p><u><a href="#">Lesson 1 How can we paint using computers?</a></u></p> <p><u><a href="#">Lesson 2 Using shapes and lines</a></u></p> <p><u><a href="#">Lesson 3 Making careful choices</a></u></p> <p><u><a href="#">Lesson 4 Why did I choose that?</a></u></p> <p><u><a href="#">Lesson 5 Painting all by myself</a></u></p> <p><u><a href="#">Lesson 6 Comparing computer art and painting</a></u></p>	<p><u><a href="#">Creating media – Digital writing</a></u></p> <p><u><a href="#">Unit guide</a></u> <u><a href="#">Learning graph</a></u> <u><a href="#">Lessons</a></u></p> <p><u><a href="#">Lesson 1 Exploring the keyboard</a></u></p> <p><u><a href="#">Lesson 2 Adding and removing text</a></u></p> <p><u><a href="#">Lesson 3 Exploring the toolbar</a></u></p> <p><u><a href="#">Lesson 4 Making changes to text</a></u></p> <p><u><a href="#">Lesson 5 Explaining my choices</a></u></p> <p><u><a href="#">Lesson 6 Pencil or keyboard</a></u></p>	<p><u><a href="#">Data and information – Grouping data</a></u></p> <p><u><a href="#">Unit guide</a></u> <u><a href="#">Learning graph</a></u> <u><a href="#">Lessons</a></u></p> <p><u><a href="#">Lesson 1 Label and match</a></u></p> <p><u><a href="#">Lesson 2 Group and count</a></u></p> <p><u><a href="#">Lesson 3 Describe an object</a></u></p> <p><u><a href="#">Lesson 4 Making different groups</a></u></p> <p><u><a href="#">Lesson 5 Comparing groups</a></u></p> <p><u><a href="#">Lesson 6 Answering questions</a></u></p>	<p><u><a href="#">Programming A – Moving a robot</a></u></p> <p><u><a href="#">Unit guide</a></u> <u><a href="#">Learning graph</a></u> <u><a href="#">Lessons</a></u></p> <p><u><a href="#">Lesson 1 Buttons</a></u></p> <p><u><a href="#">Lesson 2 Directions</a></u></p> <p><u><a href="#">Lesson 3 Forwards and backwards</a></u></p> <p><u><a href="#">Lesson 4 Four directions</a></u></p> <p><u><a href="#">Lesson 5 Getting there</a></u></p> <p><u><a href="#">Lesson 6 Routes</a></u></p>	<p><u><a href="#">Programming B – Introduction to animation</a></u></p> <p><u><a href="#">Unit guide</a></u> <u><a href="#">Learning graph</a></u> <u><a href="#">Lessons</a></u></p> <p><u><a href="#">Lesson 1 Comparing tools</a></u></p> <p><u><a href="#">Lesson 2 Joining blocks</a></u></p> <p><u><a href="#">Lesson 3 Make a change</a></u></p> <p><u><a href="#">Lesson 4 Adding sprites</a></u></p> <p><u><a href="#">Lesson 5 Project design</a></u></p> <p><u><a href="#">Lesson 6 Following my design</a></u></p>

<p><b>Year 2</b></p>	<p>How is information technology (IT) being used for good in our lives? With an initial focus on IT in the home, learners explore how IT benefits society in places such as shops, libraries, and hospitals. Whilst discussing the responsible use of technology, and how to make smart choices when using it.</p>	<p>Through the lessons in this unit, learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real.</p>	<p>Learners will explore how music can make them think and feel. They will make patterns and use those patterns to make music with both percussion instruments and digital tools. They will also create different rhythms and tunes, using the movement of animals for inspiration. Finally, learners will share their creations and compare creating music digitally and non-digitally.</p>	<p>This unit introduces the learners to the term 'data'. Learners will begin to understand what data means and how this can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions.</p>	<p>This unit develops pupils' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Pupils will use given commands in different orders to investigate how the order affects the outcome. Pupils will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.</p>	<p>This unit initially recaps on learning from the Year 1 Scratch Junior unit 'Programming B - Introduction to animation'. Learners begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr and realise these designs in ScratchJr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects.</p>
	<p><u>Computing systems and networks – IT around us</u></p> <p><u>Unit guide</u> <u>Learning graph</u> Lessons</p> <p><u>Lesson 1 What is information technology?</u></p> <p><u>Lesson 2 Where have we seen information technology at home?</u></p> <p><u>Lesson 3 Where have we seen information technology in the world?</u></p> <p><u>Lesson 4 How does information technology improve our world?</u></p> <p><u>Lesson 5 Demonstrate safe use of information technology</u></p> <p><u>Lesson 6 Using information technology responsibly</u></p>	<p><u>Creating media – Digital photography</u></p> <p><u>Unit guide</u> <u>Learning graph</u> Lessons</p> <p><u>Lesson 1 Devices</u></p> <p><u>Lesson 2 Landscape or portrait?</u></p> <p><u>Lesson 3 What makes a good photograph?</u></p> <p><u>Lesson 4 Lighting and focus</u></p> <p><u>Lesson 5 Effects</u></p> <p><u>Lesson 6 Is it real?</u></p>	<p><u>Creating media – Making music</u></p> <p><u>Unit guide</u> <u>Learning graph</u> Lessons</p> <p><u>Lesson 1 How music makes us feel</u></p> <p><u>Lesson 2 Rhythms and patterns</u></p> <p><u>Lesson 3 How music can be used</u></p> <p><u>Lesson 4 Notes and tempo</u></p> <p><u>Lesson 5 Creating digital music</u></p> <p><u>Lesson 6 Reviewing and editing music</u></p>	<p><u>Data and information – Pictograms</u></p> <p><u>Unit guide</u> <u>Learning graph</u> Lessons</p> <p><u>Lesson 1 Counting and comparing</u></p> <p><u>Lesson 2 Enter the data</u></p> <p><u>Lesson 3 Creating pictograms</u></p> <p><u>Lesson 4 What is an attribute?</u></p> <p><u>Lesson 5 Comparing people</u></p> <p><u>Lesson 6 Presenting information</u></p>	<p><u>Programming A – Robot algorithms</u></p> <p><u>Unit guide</u> <u>Learning graph</u> Lessons</p> <p><u>Lesson 1 Giving instructions</u></p> <p><u>Lesson 2 Same but different</u></p> <p><u>Lesson 3 Making predictions</u></p> <p><u>Lesson 4 Mats and routes</u></p> <p><u>Lesson 5 Algorithm design</u></p> <p><u>Lesson 6 Debugging</u></p>	<p><u>Programming B – An introduction to quizzes</u></p> <p><u>Unit guide</u> <u>Learning graph</u> Lessons</p> <p><u>Lesson 1 ScratchJr recap</u></p> <p><u>Lesson 2 Outcomes</u></p> <p><u>Lesson 3 Using a design</u></p> <p><u>Lesson 4 Changing a design</u></p> <p><u>Lesson 5 Designing and creating a program</u></p> <p><u>Lesson 6 Evaluating</u></p>

<p><b>Year 3</b></p>	<p>Challenge your learners to develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. Start by comparing digital and non-digital devices, before introducing them to computer networks that include network infrastructure devices like routers and switches.</p>	<p>During this unit, learners will use a range of techniques to create a stop frame animation using tablets. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text.</p>	<p>During this unit, learners will become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. Learners will be introduced to the terms 'templates', 'orientation', and 'placeholders' and begin to understand how these can support them in making their own template for a magazine front cover. They will start to add text and images to create their own pieces of work using desktop publishing software. Learners will look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world.</p>	<p>During this unit, learners will develop their understanding of what a branching database is and how to create one. They will gain an understanding of what attributes are and how to use them to sort groups of objects by using yes/no questions. The learners will create physical and on-screen branching databases. Finally, they will evaluate the effectiveness of branching databases and will decide what types of data should be presented as a branching database.</p>	<p>This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design through this unit.</p>	<p>This unit explores the links between events and actions, whilst consolidating prior learning relating to sequencing. Learners will begin by moving a sprite in four directions (up, down, left and right). They will then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of pen blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with learners designing and coding their own maze tracing program.</p>
	<p><u>Computing systems and networks – Connecting computers</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  <u>Lessons</u></p> <p><u>Lesson 1 How does a digital device work?</u></p> <p><u>Lesson 2 What parts make up a digital device?</u></p> <p><u>Lesson 3 How do digital devices help us?</u></p> <p><u>Lesson 4 How am I connected?</u></p> <p><u>Lesson 5 How are computers connected?</u></p> <p><u>Lesson 6 What does our school network look like?</u></p>	<p><u>Creating media – Animation</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  <u>Lessons</u></p> <p><u>Lesson 1 Can a picture move?</u></p> <p><u>Lesson 2 Frame by frame</u></p> <p><u>Lesson 3 What's the story?</u></p> <p><u>Lesson 4 Picture perfect</u></p> <p><u>Lesson 5 Evaluate and make it great!</u></p> <p><u>Lesson 6 Lights, camera, action!</u></p>	<p><u>Creating media – Desktop publishing</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  <u>Lessons</u></p> <p><u>Lesson 1 Words and pictures</u></p> <p><u>Lesson 2 Can you edit it?</u></p> <p><u>Lesson 3 Great template!</u></p> <p><u>Lesson 4 Can you add content?</u></p> <p><u>Lesson 5 Lay it out</u></p> <p><u>Lesson 6 Why desktop publishing?</u></p>	<p><u>Data and information – Branching databases</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  <u>Lessons</u></p> <p><u>Lesson 1 Yes or no questions</u></p> <p><u>Lesson 2 Making groups</u></p> <p><u>Lesson 3 Creating a branching database</u></p> <p><u>Lesson 4 Structuring a branching database</u></p> <p><u>Lesson 5 Using a branching database</u></p> <p><u>Lesson 6 Presenting information</u></p>	<p><u>Programming A – Sequence in music</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  <u>Lessons</u></p> <p><u>Lesson 1 Introduction to Scratch</u></p> <p><u>Lesson 2 Programming sprites</u></p> <p><u>Lesson 3 Sequences</u></p> <p><u>Lesson 4 Ordering commands</u></p> <p><u>Lesson 5 Looking good</u></p> <p><u>Lesson 6 Making an instrument</u></p>	<p><u>Programming B – Events and actions</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  <u>Lessons</u></p> <p><u>Lesson 1 Moving a sprite</u></p> <p><u>Lesson 2 Maze movement</u></p> <p><u>Lesson 3 Drawing lines</u></p> <p><u>Lesson 4 Adding features</u></p> <p><u>Lesson 5 Debugging movement</u></p> <p><u>Lesson 6 Making a project</u></p>

<p><b>Year 4</b></p>	<p>During this unit learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and be given opportunities to explore the World Wide Web for themselves to learn about who owns content and what they can access, add, and create. Finally they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information.</p>	<p>In this unit, learners will initially examine devices capable of recording digital audio, which will include identifying the input device (microphone) and output devices (speaker or headphones) if available. Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, learners will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. Finally, learners will evaluate their work and give feedback to their peers.</p>	<p>In this unit, pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.</p>	<p>In this unit, pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.</p>	<p>This unit is the first of the two programming units in Year 4, and looks at repetition and loops within programming. Pupils will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language.</p>	<p>This unit explores the concept of repetition in programming using the Scratch environment. It begins with a Scratch activity similar to that carried out in Logo in Programming unit A, where learners can discover similarities between two environments. Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout.</p>
	<p><u>Computing systems and networks – The Internet</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  Lessons</p> <p><u>Lesson 1 Connecting networks</u></p> <p><u>Lesson 2 What is the internet made of?</u></p> <p><u>Lesson 3 Sharing information</u></p> <p><u>Lesson 4 What is a website?</u></p> <p><u>Lesson 5 Who owns the web?</u></p> <p><u>Lesson 6 Can I believe what I read?</u></p>	<p><u>Creating media – Audio editing</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 Digital recording</u></p> <p><u>Lesson 2 Recording sounds</u></p> <p><u>Lesson 3 Creating a podcast</u></p> <p><u>Lesson 4 Editing digital recordings</u></p> <p><u>Lesson 5 Combining audio</u></p> <p><u>Lesson 6 Evaluating podcasts</u></p>	<p><u>Creating media – Photo editing</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 Changing digital images</u></p> <p><u>Lesson 2 Changing the composition of images</u></p> <p><u>Lesson 3 Changing images for different uses</u></p> <p><u>Lesson 4 Retouching images</u></p> <p><u>Lesson 5 Fake images</u></p> <p><u>Lesson 6 Making and evaluating a publication</u></p>	<p><u>Data and information – Data logging</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 Answering questions</u></p> <p><u>Lesson 2 Data collection</u></p> <p><u>Lesson 3 Logging</u></p> <p><u>Lesson 4 Analysing data</u></p> <p><u>Lesson 5 Data for answers</u></p> <p><u>Lesson 6 Answering my question</u></p>	<p><u>Programming A – Repetition in shapes</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  Lessons</p> <p><u>Lesson 1 Programming a screen turtle</u></p> <p><u>Lesson 2 Programming letters</u></p> <p><u>Lesson 3 Patterns and repeats</u></p> <p><u>Lesson 4 Using loops to create shapes</u></p> <p><u>Lesson 5 Breaking things down</u></p> <p><u>Lesson 6 Creating a program</u></p>	<p><u>Programming B – Repetition in games</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 Using loops to create shapes</u></p> <p><u>Lesson 2 Different loops</u></p> <p><u>Lesson 3 Animate your name</u></p> <p><u>Lesson 4 Modifying a game</u></p> <p><u>Lesson 5 Designing a game</u></p> <p><u>Lesson 6 Creating our games</u></p>

<p><b>Year 5</b></p>	<p>In this unit, learners will develop their understanding of computer systems and how information is transferred between systems and devices. Learners will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Learners will also take part in a collaborative online project with other class members and develop their skills in working together online.</p>	<p>In this unit learners will find out that vector images are made up of shapes. They will learn how to use the different drawing tools and how images are created in layers. They will explore the ways in which images can be grouped and duplicated to support them in creating more complex pieces of work. This unit is planned using the Google Drawings app other alternative pieces of software are available.</p>	<p>This unit gives learners the opportunity to learn how to create short videos in groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Learners are guided with step-by-step support to take their idea from conception to completion. At the teacher's discretion, the use of green screen can be incorporated into this unit. At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video.</p>	<p>This unit looks at how a flat-file database can be used to organise data in records. Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others.</p>	<p>In this unit, learners will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program components (including output devices- LEDs and motors) through the application of their existing programming knowledge. Learners are introduced to conditions as a means of controlling the flow of actions and make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the if, then structure).</p>	<p>In this unit, pupils develop their knowledge of selection by revisiting how conditions can be used in programs and then learning how the If... Then... Else structure can be used to select different outcomes depending on whether a condition is true or false. They represent this understanding in algorithms and then by constructing programs using the Scratch programming environment. They use their knowledge of writing programs and using selection to control outcomes to design a quiz in response to a given task and implement it as a program.</p>
	<p><u>Computing systems and networks – Sharing information</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  Lessons</p> <p><u>Lesson 1 Systems</u></p> <p><u>Lesson 2 Computer systems and us</u></p> <p><u>Lesson 3 Transferring information</u></p> <p><u>Lesson 4 Working together</u></p> <p><u>Lesson 5 Better working together</u></p> <p><u>Lesson 6 Shared working</u></p>	<p><u>Creating media – Vector drawing</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 The drawing tools</u></p> <p><u>Lesson 2 Create a vector drawing</u></p> <p><u>Lesson 3 Being effective</u></p> <p><u>Lesson 4 Layers and objects</u></p> <p><u>Lesson 5 Manipulating objects</u></p> <p><u>Lesson 6 Get designing</u></p>	<p><u>Creating media – Video editing</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 What is video?</u></p> <p><u>Lesson 2 Identifying devices</u></p> <p><u>Lesson 3 Using a device</u></p> <p><u>Lesson 4 Features of an effective video</u></p> <p><u>Lesson 5 Importing and editing video</u></p> <p><u>Lesson 6 Video evaluation</u></p>	<p><u>Data and information – Flat-file databases</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  Lessons</p> <p><u>Lesson 1 Creating a paper-based database</u></p> <p><u>Lesson 2 Computer databases</u></p> <p><u>Lesson 3 Using a database</u></p> <p><u>Lesson 4 Using search tools</u></p> <p><u>Lesson 5 Comparing data visually</u></p> <p><u>Lesson 6 Databases in real life</u></p>	<p><u>Programming A – Selection in physical computing</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 Connecting Crumbles</u></p> <p><u>Lesson 2 Combining output devices</u></p> <p><u>Lesson 3 Controlling with conditions</u></p> <p><u>Lesson 4 Starting with selection</u></p> <p><u>Lesson 5 Drawing designs</u></p> <p><u>Lesson 6 Writing and testing algorithms</u></p>	<p><u>Programming B – Selection in quizzes</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  Lessons</p> <p><u>Lesson 1 Exploring conditions</u></p> <p><u>Lesson 2 Selecting outcomes</u></p> <p><u>Lesson 3 Asking questions</u></p> <p><u>Lesson 4 Planning a quiz</u></p> <p><u>Lesson 5 Testing a quiz</u></p> <p><u>Lesson 6 Evaluating a quiz</u></p>

<p><b>Year 6</b></p>	<p>In this unit, the class will learn about the World Wide Web as a communication tool. First, they will learn how we find information on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. They will then investigate different methods of communication, before focusing on internet-based communication. Finally, they will evaluate which methods of internet communication to use for particular purposes.</p>	<p>During this unit, learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, including combining 3D objects to make a house and examining the differences between working digitally with 2D and 3D graphics. Learners will progress to making accurate 3D models of physical objects, such as a pencil holder, which include using 3D objects as placeholders. Finally, learners will examine the need to group 3D objects, then go on to plan, develop, and evaluate their own 3D model of a photo frame.</p>	<p>This unit introduces learners to the creation of websites for a chosen purpose. Learners identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths.</p>	<p>This unit introduces the learners to spreadsheets. They will be supported in organising data into columns and rows to create their own data set. Learners will be taught the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data. Learners will be taught how to apply formulas that include a range of cells, and apply formulas to multiple cells by duplicating them. Learners will use spreadsheets to plan an event and answer questions. Finally, learners will create graphs and charts, and evaluate their results in comparison to questions asked.</p>	<p>This unit explores the concept of variables in programming through games in Scratch. First, pupils will learn what variables are, and relate them to real-world examples of values that can be set and changed. Pupils will then use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, pupils will experiment with variables in an existing project, then modify them, then they will create their own project. In Lesson 4, pupils will focus on design. Finally, in Lesson 6, pupils will apply their knowledge of variables and design to improve their game in Scratch.</p>	<p>This unit is the final KS2 programming unit and brings together elements of all the four programming constructs: sequence from year 3, repetition from year 4, selection from year 5 and variables, introduced in year 6, programming A. It offers learners the opportunity to use all of these constructs in a different, but still familiar environment whilst also utilising a physical device - the micro:bit. The unit begins with a simple program which learners build in and test in the programming environment before transferring it to their micro:bit. Learners then take on three new projects in lessons 2, 3 and 4, with each lesson adding more depth.</p>
	<p><u>Computing systems and networks – Communication</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  Lessons</p> <p><u>Lesson 1 Searching the web</u></p> <p><u>Lesson 2 Selecting search results</u></p> <p><u>Lesson 3 How search results are ranked</u></p> <p><u>Lesson 4 How are searches influenced?</u></p> <p><u>Lesson 5 How we communicate</u></p> <p><u>Lesson 6 Communicating responsibly</u></p>	<p><u>Creating media – 3D Modelling</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 What is 3D Modelling?</u></p> <p><u>Lesson 2 Making changes</u></p> <p><u>Lesson 3 Rotation and position</u></p> <p><u>Lesson 4 Making holes</u></p> <p><u>Lesson 5 Planning my own 3D model</u></p> <p><u>Lesson 6 Making my own 3D model</u></p>	<p><u>Creating media – Web page creation</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 What makes a good website?</u></p> <p><u>Lesson 2 How would you layout your web page?</u></p> <p><u>Lesson 3 Copyright or CopyWRONG?</u></p> <p><u>Lesson 4 How does it look?</u></p> <p><u>Lesson 5 Follow the breadcrumbs</u></p> <p><u>Lesson 6 Think before you link</u></p>	<p><u>Data and information – Spreadsheets</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  Lessons</p> <p><u>Lesson 1 What is a spreadsheet?</u></p> <p><u>Lesson 2 Modifying spreadsheets</u></p> <p><u>Lesson 3 What's the formula?</u></p> <p><u>Lesson 4 Calculate and duplicate</u></p> <p><u>Lesson 5 Event planning</u></p> <p><u>Lesson 6 Presenting data</u></p>	<p><u>Programming A – Variables in games</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Summative assessment</u>  <u>Summative answers</u>  Lessons</p> <p><u>Lesson 1 Introducing variables</u></p> <p><u>Lesson 2 Variables in programming</u></p> <p><u>Lesson 3 Improving a game</u></p> <p><u>Lesson 4 Designing a game</u></p> <p><u>Lesson 5 Design to code</u></p> <p><u>Lesson 6 Improving and sharing</u></p>	<p><u>Programming B – Sensing</u>  <u>Unit guide</u>  <u>Learning graph</u>  <u>Rubric</u>  Lessons</p> <p><u>Lesson 1 The micro:bit</u></p> <p><u>Lesson 2 Go with the flow</u></p> <p><u>Lesson 3 Sensing inputs</u></p> <p><u>Lesson 4 Finding your way</u></p> <p><u>Lesson 5 Designing a step counter</u></p> <p><u>Lesson 6 Making a step counter</u></p>



Computing Systems and Networks

Multimedia skills (Creating media)

Data and information

Programming