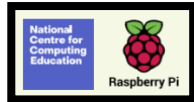


This overview is taken from






Scheme of work










# Computing Curriculum







Supplemented by



Scheme of work

|               | Autumn 1   | Autumn 2   | Spring 1  | Spring 2  | Summer 1   | Summer 2   |
|---------------|--|--|---|---|--|--|
| <b>Year 1</b> | <p><b><u>Technology All Around Us:</u></b><br/>Learners will develop their understanding of technology and how it can help them in their everyday lives. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. Learners will also consider how to use technology responsibly.</p> <p> <b><u>Online Safety:</u></b><br/><b>My Online Life</b></p> <p><b>CS, AL, SS</b></p> | <p><b><u>Digital Writing:</u></b><br/>Learners will develop their understanding of the various aspects of using a computer to create and manipulate text. They will become more familiar with using a keyboard and mouse to enter and remove text.</p> <p><b>ET, CM</b></p>                          | <p><b><u>Moving A Robot:</u></b><br/>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.</p> <p> <b><u>Online Safety:</u></b><br/><b>My Online Life</b></p> <p><b>AL, PG, SS</b></p> | <p><b><u>Grouping Data:</u></b><br/>Introduces learners to data and information. Labelling, grouping, and searching are important aspects of data and information. Searching is a common operation in many applications, and requires an understanding that to search data, it must have labels.</p> <p><b>DI, AL</b></p>   | <p><b><u>Digital Painting:</u></b><br/>Learners will develop their understanding of a range of tools used for digital painting. They then use these tools to create their own digital paintings, while gaining inspiration from a range of artists' work.</p> <p> <b><u>Online Safety:</u></b><br/><b>My Online Life</b></p> <p><b>ET, CM, SS</b></p> | <p><b><u>Programming Animations:</u></b><br/>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><b>PG, DD</b></p> |
| <b>Year 2</b> | <p><b><u>Information Technology Around Us:</u></b><br/>Learners will look at information technology at school and beyond, in settings such as shops, hospitals, and libraries. Learners will investigate how information technology improves our world, and they will learn about using information technology responsibly.</p>  | <p><b><u>Digital Photography:</u></b><br/>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><b><u>Robot Algorithms:</u></b><br/>Pupils will develop an 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.</p>   | <p><b><u>Pictograms:</u></b><br/>Learners will begin to understand what the term data means and how data 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</p> | <p><b><u>Making Music:</u></b><br/>Learners will be using a computer to create music. They will listen to a variety of pieces of music and consider how music can make them think and feel. Learners will compare creating music digitally and non-digitally. Learners will look at patterns and purposefully create music.</p>  | <p><b><u>Programming Quizzes:</u></b><br/>This unit initially recaps on learning from the Year 1 ScratchJr unit 'Programming B - Programming animations'. Learners begin to understand that sequences of commands have an outcome, and make predictions based on their learning.</p>   |

|        |  |   |  |  |   |  |
|--------|--|---|--|--|---|--|
|        |  <p><u>Online Safety:</u><br/>My Online Life</p> <p>NW,CS,SS</p>  | <p>ET,CM</p>  |  <p><u>Online Safety:</u><br/>My Online Life</p> <p>AL,PG,SS</p>  | <p>presented to answer questions.</p> <p>DI,ET</p>   |  <p><u>Online Safety:</u><br/>My Online Life</p> <p>CM,DD,SS</p>   | <p>PG,DD</p>   |
| Year 3 | <p><b><u>Connecting Computers:</u></b><br/>Learners will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They will also compare digital and non-digital devices. Next, learners will be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. Finally, learners will discover the benefits of connecting devices in a network.</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>NW,CS,SS</p> | <p><b><u>Stop-Frame Animation:</u></b><br/>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>ET,CM</p> | <p><b><u>Sequencing Sounds:</u></b><br/>Learners are introduced to 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.</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>PG,DD,SS</p> | <p><b><u>Branching Databases:</u></b><br/>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.</p> <p>DI,ET</p> | <p><b><u>Desktop Publishing:</u></b><br/>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.</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>ET,CM,SS</p> | <p><b><u>Events And Action In Programming:</u></b><br/>Learners will explore the links between events and actions, while consolidating prior learning relating to sequencing. Learners begin by moving a sprite in four directions (up, down, left, and right). They 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.</p> <p>PG,DD</p> |
| Year 4 | <p><b><u>The Internet:</u></b><br/>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</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>NW,CS,SS</p>   | <p><b><u>Photo Editing:</u></b><br/>Learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images</p> <p>ET,CM</p>  | <p><b><u>Repetition In Shapes:</u></b><br/>Learners 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><u>Online Safety:</u><br/>My Online Life</p> <p>PG,DD,SS</p>  | <p><b><u>Data Logging:</u></b><br/>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</p> <p>DI,ET</p>  | <p><b><u>Audio Editing:</u></b><br/>Learners will initially examine devices capable of recording digital audio, which will include identifying the input device (microphone) and output devices (speaker or headphones) and will discuss the ownership of</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>ET,CM,SS</p>   | <p><b><u>Repetition In Games:</u></b><br/>Learners will explore the concept of repetition in programming using the Scratch environment and look at the difference between count-controlled and infinite loops, and use</p> <p>PG,DD</p>  |

|                      |   |   |  |  |  |   |
|----------------------|---|---|--|--|--|---|
|                      | <p>internet, and will be given opportunities to explore the World Wide Web for themselves.</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>NW,SS</p>   | <p>can have, and evaluate the effectiveness of their choices.</p> <p>ET,CM</p>  |  <p><u>Online Safety:</u><br/>My Online Life</p> <p>AL,PG</p>   | <p>environment. Pupils will collect data as well as access data captured over long periods of time.</p> <p>CS,DI</p>   |  <p><u>Online Safety:</u><br/>My Online Life</p> <p>ET,CM,SS</p>  | <p>their knowledge to modify existing animations and games using repetition.</p> <p>PG,DD</p>   |
| <p><b>Year 5</b></p> | <p><b><u>Sharing Information:</u></b><br/>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.</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>NW,ET,SS</p> | <p><b><u>Video Editing:</u></b><br/>Learners will learn how to create short videos by working in pairs or 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.</p> <p>CM,DD</p> | <p><b><u>Selection In Physical Computing:</u></b><br/>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.</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>PG,CS,SS</p> | <p><b><u>Flat-File Databases:</u></b><br/>Learners will discover 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>DI,ET</p> | <p><b><u>Vector Drawing:</u></b><br/>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.</p>  <p><u>Online Safety:</u><br/>My Online Life</p> <p>ET,CM,SS</p> | <p><b><u>Selection In Quizzes:</u></b><br/>Pupils will develop their knowledge of 'selection' by revisiting how 'conditions' can be used in programming, 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'.</p> <p>AL,PG</p> |

**Year  
6**

**Internet Communication:**

Pupils 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.



Online Safety:  
My Online Life

NW,ET,SS

**Webpage Creation:**

Learners will be introduced to creating 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.

CM,DD

**Variables In Games:**

Learners will explore the concept of variables in programming through games in Scratch. Pupils will learn what variables are, and relate them to real-world examples of values that can be set and changed.



Online Safety:  
My Online Life

PG,DD,SS

**Introduction To  
Spreadsheets:**

Learners will be introduced 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.

ET,DI

**3D Modelling:**

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.



Online Safety:  
My Online Life

ET,CM,SS

**Sensing:**

Learners bring 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, while also utilising a physical device – the micro:bit.

PG,CS

**Key:**

AL: Algorithms  
CS: Computer Systems  
CM: Creating Media  
DI: Data and Information

DD: Design and Development  
ET: Effective use of Tools  
NW: Networks  
PG: Programming

SS: Safety and Security  
IT: Impact of Technology



