

## Year 1 Curriculum Overview (September 2022)

Computer Science	Information Technology	Digital Literacy
<b>Programming A – Moving A Robot</b> <i>(Uses Beebots)</i>	<b>Creating Media - Digital Painting</b>	<b>Computing Systems and Networks – technology around us</b>
Explain what a command will do  Follow and give directions  Make a sequence using forwards and backwards  Make a sequence using four directions  Plan a simple program  Find more than one solution to a program	Describe what different freehand tools do  Use the shape and line tools  Make careful choices when painting a digital picture  Explain why I chose the tools I used  Paint my own picture using a computer  Compare painting a picture on a computer and paper	Identify technology  Identify a computer and its main parts  To use a mouse in different ways  Use a keyboard to type on a computer  Use the keyboard to edit text  Create rules for using technology responsibly
<b>Programming B – Introduction to Animation</b> <i>(Scratch JR)</i>	<b>Data and Information – Grouping Data</b> <i>(can be taught ‘unplugged’)</i>	<b>E-Safety</b>
Choose a command for a given purpose  Join a series of commands together  Know what happens when I change a value  Include more than one sprite in a program  Design a project by creating an algorithm  Use my algorithm to create a program	Label objects  Identify objects that can be counted  Describe objects in different ways  Count objects with the same ‘properties’  Compare groups of objects  Answer questions about groups of objects	Privacy: log into a computer.  Privacy: know what personal information it is important to keep private online.  Privacy: know who to talk to if I am scared or find bad things on a computer.  Targeting: type a URL into a browser.  Targeting: search for information on the Internet using a browser.
<b>Optional Unit: Creating Media – Digital Writing</b>		

## Year 2 Curriculum Overview (September 2022)

Computer Science	Information Technology	Digital Literacy
<b>Programming A – Robot Algorithms</b> <i>(Uses Beebots)</i>	<b>Creating Media - Digital Photography</b>	<b>Computing Systems and Networks – IT Around Us</b> <i>(can be taught ‘unplugged’)</i>
Describe a series of instructions as a sequence  Explain what happens when we change the order of instructions  Predict the outcome of a program (using logical reasoning)  Explain that projects must have code and artwork  Design an algorithm  Create and ‘debug’ a program I have written	Use a digital device to take a photograph  Make choices about orientation when taking a photograph  Describe what makes a good photograph  Decide how to use lighting to improve photographs  Use tools to change an image  Know how to identify real photos from edited photos	Recognise the uses and features of information technology  Identify the uses of information technology in our school  Identify information technology beyond our school  Explain how information technology helps us  Explain how to use information technology safely  Choose which type of IT to use for different purposes
<b>Programming B – An Introduction to Quizzes</b> <i>(Scratch JR)</i>	<b>Data and Information – Pictograms</b>	<b>E-Safety</b>
Explain that a sequence of commands has a start  Explain that a sequence of commands has an outcome  Create a program using a given design  Change characters and backgrounds in a given design  Create a program using my own design  Decide how my project can be improved	Record and compare objects using a tally chart  Recognise that objects can be represented as pictures  Create a pictogram  Select and compare objects by different ‘attributes’  Choose attributes and collect data  Explain how we can present information using a computer	Social: explain some of the different ways people can talk to each other using technology and the Internet ( <i>e.g. email, text, WhatsApp, chat program</i> ).  Social: know that some of the people who may contact me while online may be ‘anonymous’.  Social: know that some people online are not always who they say they are.  Privacy: explain some of the things we should never share or discuss online.  Targeting: use search engines and other search technologies with growing independence.
<b>Optional Unit: Creating Media – Making Music</b>		

## Year 3 Curriculum Overview (September 2022)

Computer Science	Information Technology	Digital Literacy
<b>Programming A – Sequencing Sounds</b> <i>(Uses Scratch)</i>	<b>Creating Media – Stop Frame Animation</b>	<b>Computing Systems and Networks – Connecting Computers</b>
Explore objects and commands in Scratch  Create a program with an outcome  Start a program in different ways  Put a sequence of commands in an order  Change the appearance of my project  Create a project from a task description.	Explain that an animation is a sequence of drawings or photographs  Relate animated movement with a sequence of images  Plan an animation  Review a sequence of frames to check my work  Review and improve an animation  Add other media to an animation	Explain how digital devices function  Identify input and output devices  Know how digital devices can change the way we work  Explain how a computer network can share information  Explore how digital devices can be connected  Recognize the physical components of a network.
<b>Programming B – Events and Actions in Programs</b> <i>(Scratch)</i>	<b>Data and Information – Branching Databases</b> <i>(J2E)</i>	<b>E-Safety</b>
Explain how a sprite moves  Create a program to move a sprite in four directions  Adapt a program to a new context  Develop my program by adding features  Identify and fix bugs in a program  Design and create a maze-based challenge	Create questions with yes/no answers  Identify attributes needed to collect data about an object  Create a branching database  Explain why a database needs to be well-structured  Plan the structure of a branching database  Independently create an identification tool	Social: explain how we might be able to tell whether someone we are talking to online is who they say they are.  Social: know that people may behave differently online than they do in real-life, and consider why.  Data: know that hardware and software can collect information about me when I am using a computer.  Targeting: know that some of the top results from search engines will be adverts paid for by companies.  Persuasion: consider how games, apps or social media platforms may be designed to keep people using them for as long as possible.
<b>Optional Unit: Creating Media – Desktop Publishing</b>		

## Year 4 Curriculum Overview (September 2022)

Computer Science	Information Technology	Digital Literacy
<b>Programming A – Repetition in Shapes</b> <i>(Uses Logo)</i>	<b>Creating Media – Photo Editing</b>	<b>Computing Systems and Networks – IT Around Us</b>
<p>Identify the importance of accuracy in programming</p> <p>Create a program in a text-based language</p> <p>Explain what ‘repeat’ means’</p> <p>Modify a loop to produce a given outcome</p> <p>Decompose a task into small steps</p> <p>Create a program that uses count-controlled loops</p>	<p>Explain the composition of digital images can be changed</p> <p>Explain how colours can be changed in digital images</p> <p>Know how cloning can be used in photo editing</p> <p>Explain that images can be combined</p> <p>Combine images for a purpose</p> <p>Evaluate how changes can improve an image</p>	<p>Describe how networks physically connect to other networks</p> <p>Recognise how networked devices make up the Internet</p> <p>Explain how websites can be shared via the World Wide Web</p> <p>Describe how content can be added to the World Wide Web</p> <p>Recognise World Wide Web content is created by people</p> <p>Evaluate the consequences of unreliable content</p>
<b>Programming B – Repetition in Games</b> <i>(Uses Scratch)</i>	<b>Data and Information – Data Logging</b>	<b>E-Safety</b>
<p>Use count-controlled loop in a different programming environment</p> <p>Understand the difference between infinite loops and count-controlled loops</p> <p>Develop a design that uses two or more simultaneous loops</p> <p>Modify an infinite loop in a given program</p> <p>Redesign a project that includes repetition</p> <p>Create a project that includes repetition</p>	<p>Explain that data gathered over time can help answer questions</p> <p>Use a digital device to collect data automatically</p> <p>Understand a data logger collects ‘data points’ from sensors over time</p> <p>Recognise how a computer can help us analyse data</p> <p>Identify the data needed to answer questions</p> <p>Use data from sensors to answer questions</p>	<p>Social: consider what constitutes acceptable or unacceptable behaviour when chatting online.</p> <p>Social: explain the risks of carrying out and watching ‘live streaming’ content.</p> <p>Data: know what cookies are and how they can have positive or negative effects.</p> <p>Data: explain why it is important to pay attention to the boxes you may tick when you use a game, app or website for the first time.</p> <p>Persuasion: explain the advantages and potential dangers of user feedback and review systems.</p> <p>Persuasion: recognise that the majority of games, apps and social media platforms are actually businesses designed to make money.</p>
<b>Optional Unit: Creating Media – Audio Production</b>		

## Year 5 Curriculum Overview (September 2022)

Computer Science	Information Technology	Digital Literacy
<b>Programming A – Selection in Physical Computing</b> <i>(Uses Crumble via Scratch)</i>	<b>Creating Media – Video Production</b>	<b>Computing Systems and Networks – Systems and Searching</b>
Control a simple circuit connected to a computer  Write a program that includes count-controlled loops  Explain that a loop can stop when a condition is met  Explain that a loop can be used to continuously check whether a condition is met  Design a physical project that includes selection  Create a program that controls a physical computing project	Explain what makes a video effective  Identify digital device that can record video  Capture video using a range of techniques  Create a storyboard  Recognise video can be improved through reshooting and editing  Evaluate my video and share my opinions	Explain that computers can be connected to form systems  Recognise the role of computer systems in our lives  Experiment with search engines  Describe how search engines select results  Explain how search results are ranked  Recognise why the order of results is important, and to whom
<b>Programming B – Selection in Quizzes</b> <i>(Scratch)</i>	<b>Creating Media – Introduction to Vector Graphics</b>	<b>E-Safety</b>
Explain how selection is used in computer programs  Understand that a conditional statement connects a condition to an outcome  Explain how selection directs the flow of a program  Design a program that uses selection  Create program that uses selection  Evaluate my program	Identify that drawing tools can be used to produce different outcomes  Create a vector drawing by combining shapes  Use tools to achieve a desired effect  Recognise that vector drawings consist of layers  Group objects to make them easier to work with  Apply what I have learned about vector drawings	Social: understand what ‘trolling’ and ‘cyberbullying’ are how it may be anonymous.  Data: Understand why some companies may wish to gather and share our personal data. (e.g. targeted advertisements)  Fraud/scam: understand methods to help identify fake or insecure websites, and the dangers of using insecure websites.  Privacy: explain the features of strong and weak passwords.  Privacy: recognise the importance of using multi-factor identification or other methods to help protect and recover passwords.  Persuasion: discuss some of the risks related to online gambling, including ‘loot boxes’ and other paid-content in games.
<b>Optional Unit: Data and Information – Flat-file Databases</b>		

## Year 6 Curriculum Overview (September 2022)

Computer Science	Information Technology	Digital Literacy
<b>Programming A – Variables In Games</b> <i>(Uses Scratch)</i>	<b>Creating Media – 3D Modelling</b>	<b>Computing Systems and Networks – Communication and Collaboration</b>
Define a 'variable' as something that can be changed  Explain why a variable is used in a program  Choose how to improve a game by using variables  Design a project that builds on a given example  Use my design to create a project  Evaluate my project	Recognise that you can work in three dimensions on a computer  Modify 3D objects by moving, resizing and recolouring them  Recognise that objects can be combined in a 3D model  Create a 3D model for a given purpose  Plan my own 3D model  Create my own digital 3D model	Explain the importance of Internet addresses  Recognise how data is transferred across the Internet  Explain how sharing information online can help people work together  Evaluate different ways of working together online  Recognise different ways of communication using the Internet  Evaluate different methods of online communication
<b>Programming B – Sensing Movement</b> <i>(Uses Microbit)</i>	<b>Data and Information – Spreadsheets</b>	<b>E-Safety</b>
Create a program to run on a controllable device  Explain that selection can control the flow of a program  Update a variable with user input  Use a conditional statement to compare a variable to a variable  Design a project that uses inputs and outputs on a controllable device	Create a data set in a spreadsheet  Build a data set in a spreadsheet  Explain that formulae can be used to produce calculated data  Apply formulae to data  Create a spreadsheet to plan an event  Choose suitable ways to present data	Evaluate the probability and severity of different E-Safety dangers.  Persuasion: recognise the impact of comparing ourselves to unrealistic online images and information.  Social: know that online content may glamourize dangerous activities (e.g. drugs, gang membership and eating disorders.)  Privacy: understand that things we post online may be used against us and affect our digital footprint  Social: identify types of individuals and groups who may be especially vulnerable online.

Understand why false information may be shared online and how its accuracy could be checked.

Fraud/scam: understand what identity fraud, scams and phishing are, and how children may be targeted to access their parents' details.

CSAE: understand the key indicators of 'grooming' and how to report it or find support.

**Optional Unit: Creating Media – Web Page Creation**