

Year 1 Curriculum Overview

Computer Science	Information Technology	Digital Literacy
Programming A – Moving A Robot <i>(Uses Beebots)</i>	Creating Media - Digital Painting	Computing Systems and Networks – technology around us
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
Programming B – Introduction to Animation <i>(Scratch JR)</i>	E-Safety	
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	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.	
Optional Units: Creating Media – Digital Writing / Data and Information – Grouping Data		

Year 2 Curriculum Overview

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

Year 3 Curriculum Overview

Computer Science	Information Technology	Digital Literacy
Programming A – Sequencing Sounds <i>(Uses Scratch)</i>	Creating Media – Stop Frame Animation	Computing Systems and Networks – Connecting Computers
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.
Programming B – Events and Actions in Programs <i>(Scratch)</i>	Data and Information – Branching Databases <i>(J2E)</i>	E-Safety
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 collected 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.
Optional Unit: Creating Media – Desktop Publishing		

Year 4 Curriculum Overview

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

Year 5 Curriculum Overview

Computer Science	Information Technology	Digital Literacy
Programming B – Sensing Movement (Uses Microbit via MakeCode)	Creating Media – Video Production	Computing Systems and Networks – Systems and Searching
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.	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
Programming A – Selection in Quizzes (Scratch)	Creating Media – Introduction to Vector Graphics	E-Safety
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.
Optional Unit: Data and Information – Flat-file Databases		

Year 6 Curriculum Overview

Computer Science	Digital Literacy	Information Technology
Programming A – Variables In Games (Uses Scratch)	E-Safety	Creating Media – 3D Modelling
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	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.	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
Programming B – Intelligent Control Systems (Uses Microbit via MakeCode)	Programming C – Selection in Physical Computing (Uses Crumble via Scratch)	Data and Information – Spreadsheets
Design a program using multiple inputs and varied outputs Use selection to control flow, including nested conditions Update variables using input or sensor data Compare variables with conditional statements Plan a multi-step project using inputs, outputs, selection and variables	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	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



Test and debug to improve performance and accuracy		
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