The Eliot Bank and Gordonbrock Schools Federation

COMPUTING CURRICULUM OVERVIEW

Curriculum Map

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Computing systems and networks - Technology around us	Creating media - Digital painting	Creating media - Digital writing	Data and information - Grouping data	Programming A - Moving a robot	Programming B - Introduction to animation
Year 2	Computing systems and networks - IT around us	Creating media - Digital photography	Creating media - Making music	Data and information - Pictograms	Programming A - Robot algorithms	Programming B - An introduction to quizzes
Year 3	Computing systems and networks - Connecting computers	Creating media - Animation	Creating media - Desktop publishing	Data and information - Branching databases	Programming A - Sequence in music	Programming B - Events and actions
Year 4	Computing systems and networks - The Internet	Creating media - Audio editing	Creating media - Photo editing	Data and information - Data logging	Programming A - Repetition in shapes	Programming B - Repetition in games
Year 5	Computing systems and networks - Sharing information	Creating media - Vector drawing	Creating media - Video editing	Data and information - Flat-file databases	Programming A - Selection in physical computing	Programming B - Selection in quizzes
Year 6	Computing systems and networks - Communication	Creating media - 3D modelling	Creating media - Web page creation	Data and information - Spreadsheets	Programming A - Variables in games	Programming B - Sensing

Progression of knowledge and skills

Computing systems and networks

	Knowledge	Skills
Reception	**PSED:** • To know and talk about the different factors that support their overall health and wellbeing (sensible amounts of 'screen time') • **To explain the reasons for rules, know right from wrong and try to behave accordingly [ELG]**	**PSED:** • To show resilience and perseverance in the face of a challenge • **To be confident to try new activities and show independence, resilience and perseverance in the face of challenge [ELG]** **FMS:** • To develop their small motor skills so that they can use a range of tools competently, safely and confidently **EA&D:** • To explore, use and refine a variety of artistic effects to express their ideas and feelings • **To safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function [ELG]**
Year 1	• To identify technology • To identify a computer and its main parts	• To use a mouse in different ways • To use a keyboard to type on a computer • To use the keyboard to edit text • To create rules for using technology responsibly
Year 2	• To identify technology • To identify a computer and its main parts •	• To use a mouse in different ways • To use a keyboard to type on a computer • To use the keyboard to edit text • To create rules for using technology responsibly
Year 3	• To identify input and output devices • To recognise how digital devices can change the way we work • To recognise the physical components of a network	• To explain how digital devices function • To explain how a computer network can be used to share information • To explore how digital devices can be connected

Year 4	• To describe how networks physically connect to other networks • To outline how websites can be shared via the World Wide Web (WWW) • To describe how content can be added and accessed on the World Wide Web (WWW) • To recognise how networked devices make up the internet • To recognise how the content of the WWW is created by people	• To evaluate the consequences of unreliable content
Year 5	• To recognise the role of computer systems in our lives • To recognise how information is transferred over the internet	• To explain that computers can be connected together to form systems • To explain how sharing information online lets people in different places work together • To contribute to a shared project online • To evaluate different ways of working together online
Year 6	• To identify how to use a search engine • To recognise why the order of results is important, and to whom • To recognise how we communicate using technology • To describe how search engines select results	• To explain how search results are ranked • To evaluate different methods of online communication

Creating media

	Knowledge	Skills
Year 1	• To describe what different freehand tools do • To identify that the look of text can be changed on a computer	• To use the shape tool and the line tools • To make careful choices when painting a digital picture • To explain why I chose the tools I used • To use a computer on my own to paint a picture • To compare painting a picture on a computer and on paper • To use a computer to write • To add and remove text on a computer

		• To make careful choices when changing text • To explain why I used the tools that I chose • To compare typing on a computer to writing on paper
Year 2	• To describe what makes a good photograph • To recognise that photos can be changed • To identify that there are patterns in music	• To use a digital device to take a photograph • To make choices when taking a photograph • To decide how photographs can be improved • To use tools to change an image • To say how music can make us feel • To show how music is made from a series of notes • To create music for a purpose • To review and refine our computer work
Year 3	• To recognise how text and images convey information • To recognise that text and layout can be edited • To identify the need to work consistently and carefully	• To explain that animation is a sequence of drawings or photographs • To relate animated movement with a sequence of images • To plan an animation • To review and improve an animation • To evaluate the impact of adding other media to an animation • To choose appropriate page settings • To add content to a desktop publishing publication • To consider how different layouts can suit different purposes • To consider the benefits of desktop publishing
Year 4	• To describe how images can be changed for different uses • To identify that sound can be digitally recorded • To recognise that not all images are real	• To use a digital device to record sound • To explain that a digital recording is stored as a file • To explain that audio can be changed through editing • To show that different types of audio can be combined and played together • To evaluate editing choices made • To explain that digital images can be changed • To change the composition of an image • To make good choices when selecting different tools • To evaluate how changes can improve an image

Year 5	• To recognise that vector drawings consist of layers • To identify digital devices that can record video • To identify that video can be improved through reshooting and editing • To identify that drawing tools can be used to produce different outcomes	• To explain what makes a video effective • To capture video using a range of techniques • To create a storyboard • To consider the impact of the choices made when making and sharing a video • To create a vector drawing by combining shapes • To use tools to achieve a desired effect • To group objects to make them easier to work with • To evaluate my vector drawing
Year 6	• To recognise the need to preview pages • To outline the need for a navigation path • To recognise the implications of linking to content owned by other people • To identify that physical objects can be broken down into a collection of 3D shapes	• To review an existing website and consider its structure • To plan the features of a web page • To consider the ownership and use of images (copyright) • To use a computer to create and manipulate three-dimensional (3D) digital objects • To compare working digitally with 2D and 3D graphics • To construct a digital 3D model of a physical object • To design a digital model by combining 3D objects • To develop and improve a digital 3D model

Data and information

	Knowledge	Skills
Year 1	• To label objects • To identify that objects can be counted • To describe objects in different ways •	• To count objects with the same properties • To compare groups of objects • To answer questions about groups of objects
Year 2	• To recognise that we can count and compare objects using tally charts • To recognise that objects can be represented as pictures	• To create a pictogram • To select objects by attribute and make comparisons

	• To recognise that people can be described by attributes	• To explain that we can present information using a computer
Year 3	• To identify the object attributes needed to collect relevant data • To identify objects using a branching database	• To create questions with yes/no answers • To create a branching database • To explain why it is helpful for a database to be well structured • To compare the information shown in a pictogram with a branching database
Year 4	• To identify the data needed to answer questions	• To explain that data gathered over time can be used to answer questions • To use a digital device to collect data automatically • To explain that a data logger collects 'data points' from sensors over time • To use data collected over a long duration to find information • To use collected data to answer questions
Year 5	• To outline how grouping and then sorting data allows us to answer questions	• To use a form to record information • To compare paper and computer-based databases • To explain that tools can be used to select specific data • To explain that computer programs can be used to compare data visually • To apply my knowledge of a database to ask and answer real-world questions
Year 6	• To identify questions which can be answered using data	• To explain that objects can be described using data • To explain that formulas can be used to produce calculated data • To apply formulas to data, including duplicating • To create a spreadsheet to plan an event • To choose suitable ways to present data

Programming

	Knowledge	Skills
Year 1	• To identify the effect of changing a value	• To explain what a given command will do • To act out a given word • To combine forwards and backwards commands to make a sequence • To combine four direction commands to make sequences • To plan a simple program • To find more than one solution to a problem • To choose a command for a given purpose • To show that a series of commands can be joined together • To explain that each sprite has its own instructions • To design the parts of a project • To use my algorithm to create a program
Year 2	• To describe a series of instructions as a sequence	• To explain what happens when we change the order of instructions • To use logical reasoning to predict the outcome of a program (series of commands) • To explain that programming projects can have code and artwork • To design an algorithm • To create and debug a program that I have written • To explain that a sequence of commands has a start • To explain that a sequence of commands has an outcome • To create a program using a given design • To change a given design • To create a program using my own design • To decide how my project can be improved
Year 3	• To identify that commands have an outcome • To recognise that a sequence of commands can have an order • To identify and fix bugs in a program	• To explore a new programming environment • To explain that a program has a start • To change the appearance of my project • To create a project from a task description • To explain how a sprite moves in an existing project • To create a program to move a sprite in four directions

		• To adapt a program to a new context • To develop my program by adding features • To design and create a maze-based challenge
Year 4	• To identify that accuracy in programming is important	• To create a program in a text-based language • To explain what 'repeat' means • To modify a count-controlled loop to produce a given outcome • To decompose a task into small steps • To create a program that uses count-controlled loops to produce a given outcome • To develop the use of count-controlled loops in a different programming environment • To explain that in programming there are infinite loops and count controlled loops • To develop a design that includes two or more loops which run at the same time • To modify an infinite loop in a given program • To design a project that includes repetition • To create a project that includes repetition
Year 5		• To control a simple circuit connected to a computer • To write a program that includes count-controlled loops • To explain that a loop can stop when a condition is met • To explain that a loop can be used to repeatedly check whether a condition has been met • To design a physical project that includes selection • To create a program that controls a physical computing project • To explain how selection is used in computer programs • To relate that a conditional statement connects a condition to an outcome • To explain how selection directs the flow of a program • To design a program which uses selection • To create a program which uses selection

		• To evaluate my program
Year 6	• To define a 'variable' as something that is changeable	• To explain why a variable is used in a program • To choose how to improve a game by using variables • To design a project that builds on a given example • To use my design to create a project • To evaluate my project • To create a program to run on a controllable device • To explain that selection can control the flow of a program • To update a variable with a user input • To use an conditional statement to compare a variable to a value • To design a project that uses inputs and outputs on a controllable device • To develop a program to use inputs and outputs on a controllable device

The Eliot Bank and Gordonbrock Schools Federation Computing curriculum is based on Teach Computing's primary teacher toolkit.