



St Paul's CE VC Junior School – Progression of skills

Subject: Computing

Three strands: **Computer Science**, **Information Technology** and **Digital Literacy**

Year 3

Computing Systems and Networks - Connecting Computers

- To explain how digital devices function
- To identify input and output devices
- To recognise how digital devices can change the way we work
- To explain how a computer network can be used to share information
- To explore how digital devices can be connected
- To recognise the physical components of a network

Creating Media – Stop Frame Animation

- 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 identify the need to work consistently and carefully
- To review and improve an animation
- To evaluate the impact of adding other media to an animation

Programming A - Sequencing Sounds

- To explore a new programming environment
- I can identify that each sprite is controlled by the commands I choose
- To explain that a program has a start
- To recognise that a sequence of commands can have an order
- To change the appearance of my project
- To create a project from a task description

Data and Information - Branching Databases

- 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 identify objects using a branching database
- To identify the object attributes needed to collect relevant data
- To compare the information shown in a pictogram with a branching database

Creating Media - Desktop Publishing

- To recognise how text and images convey information
- To recognise that text and layout can be edited
- 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

Programming B - Events and Actions in Programs

Year 4

Computing Systems and Networks - The Internet

- To outline how websites can be shared via the World Wide Web
- To describe how content can be added and accessed on the World Wide Web
- To recognise how the content of the WWW is created by people
- To evaluate the consequences of unreliable content

Creating Media - Audio Production

- To identify that sound can be digitally recorded
- 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

Programming A - Repetition in Shapes

- 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 program into parts
- To create a program that uses count-controlled loops to produce a given outcome

Data and Information - Data Logging

- 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 identify the data needed to answer questions
- To use collected data to answer questions

Creating Media - Photo Editing

- To explain that digital images can be changed
- To change the composition of an image
- To describe how images can be changed for different uses
- To make good choices when selecting different tools
- To recognise that not all images are real
- To evaluate how changes can improve an image

Programming B - Repetition in Games

- 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 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 identify and fix bugs in a program
- To design and create a maze based (given) challenge
- To decide how my project can be improved

- To develop a design which 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

Computing Systems and Networks - Systems and Searching

- To explain that computers can be connected together to form systems
- To recognise the role of computer systems in our lives
- To recognise how information is transferred over the internet
- 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

Creating Media - Video Production

- To recognise video as moving pictures, which can include audio
- To identify digital devices that can record video
- To capture video using a digital device
- To recognise the features of an effective video
- To identify that video can be improved through reshooting and editing
- To consider the impact of the choices made when making and sharing a video

Programming A - Selection in Physical Computing

- 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, e.g. number of times
- To conclude that a loop can be used to repeatedly check whether a condition has been met
- To design a physical project which includes selection
- To create a controllable system which includes selection

Data and Information - Flat-file Databases

- To use a form to record information
- To compare paper and computer-based databases
- To apply my knowledge of a database to ask and answer real-world questions
- To explain that tools can be used to select data to answer questions
- To apply my knowledge of a database to ask and answer real-world questions
- To apply my knowledge of a database to ask and answer real-world questions

Creating Media - Introduction to Vector Graphics

- To identify that drawing tools can be used to produce different outcomes
- To create a vector drawing by combining shapes
- To use tools to achieve a desired effect
- To recognise that vector drawings consist of layers
- To group objects to make them easier to work with
- To evaluate my vector drawing

Programming B - Selection in Quizzes

- To explain how selection is used in computer programs
- To relate that a conditional statement connects a condition to an outcome

Year 6

Computing Systems and Networks - Communication and Collaboration

- To explain the importance of internet addresses
- To explain how data is transferred across the internet
- To explain how sharing information online can help people work together
- To evaluate different ways of working together online
- To recognise how we communicate using technology
- To evaluate different methods of online communication

Creating Media - Webpage Creation

- 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 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

Programming A - Variables in Games

- 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

Data and Information - Spreadsheets

- To create a data set in a spreadsheet
- To build a data set in a spreadsheet
- To explain that formulae should be used to produce calculated data
- To apply formulae to data
- To create a spreadsheet to plan an event
- To choose suitable ways to present data

Creating Media - 3D Modelling

- To recognise that you can work in 3D on a computer
- To identify that digital 3d objects can be modified
- To recognise that objects can be combined in a 3d model
- To create a 3d model for a given purpose
- To plan my own 3d model

Programming B - Sensing Movement

- To create a program to run on a controllable device
- To explain that selection can control the flow of a program
- To update the variable with a user input
- To use a conditional statement to compare a variable to a value

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

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