

# Lower Key Stage 2 - Computing Progression of Skills

## Computer Science Steps from NCCE Lesson Plans (Teach Computing)

### Lower Key Stage 2 NCCE Learning Objectives

Year 3		Year 4	
Programming A - Sequencing Sounds	To explore a new programming environment	Programming A - Repetition in Shapes	To identify that accuracy in programming is important
	I can identify that each sprite is controlled by the commands I choose		To create a program in a text-based language
	To explain that a program has a start		To explain what 'repeat' means
	To recognise that a sequence of commands can have an order		To modify a count-controlled loop to produce a given outcome
	To change the appearance of my project		To decompose a program into parts
	To create a project from a task description		To create a program that uses count-controlled loops to produce a given outcome
Y3		Y4	
Programming B - Events and Actions in Programs	To explain how a sprite moves in an existing project	Programming B - Repetition in Games	To develop the use of count-controlled loops in a different programming environment
	To create a program to move a sprite in four directions		To explain that in programming there are infinite loops and count controlled loops
	To adapt a program to a new context		To develop a design which includes two or more loops which run at the same time
	To develop my program by adding features		To modify an infinite loop in a given program
	To identify and fix bugs in a program		To design a project that includes repetition
	To design and create a maze based (given) challenge		To create a project that includes repetition
<b>DL &amp; IT Steps</b>			
Year 3		Year 4	
Creating Media - Desktop Publishing	To recognise how text and images convey information	Creating Media - Photo Editing	To explain that digital images can be changed
	To recognise that text and layout can be edited		To change the composition of an image
	To choose appropriate page settings		To describe how images can be changed for different uses
	To add content to a desktop publishing publication		To make good choices when selecting different tools
	To consider how different layouts can suit different purposes		To recognise that not all images are real
	To consider the benefits of desktop publishing		To evaluate how changes can improve an image
Y3		Y4	
Creating Media - Stop-Frame Animation	To explain that animation is a sequence of drawings or photographs	Creating Media - Audio Production	To identify that sound can be digitally recorded
	To relate animated movement with a sequence of images		To use a digital device to record sound
	To plan an animation		To explain that a digital recording is stored as a file
	To identify the need to work consistently and carefully		To explain that audio can be changed through editing
	To review and improve an animation		To show that different types of audio can be combined and played together
	To evaluate the impact of adding other media to an animation		To evaluate editing choices made
Y3		Y4	
Computing Systems and Networks - Connecting Computers	To explain how digital devices function	Computing Systems & Networks - The Internet	To describe how networks physically connect to other networks
	To identify input and output devices		To recognise how networked devices make up the internet
	To recognise how digital devices can change the way we work		To outline how websites can be shared via the World Wide Web
	To explain how a computer network can be used to share information		To describe how content can be added and accessed on the World Wide Web
	To explore how digital devices can be connected		To recognise how the content of the WWW is created by people
	To recognise the physical components of a network		To evaluate the consequences of unreliable content
Y3		Y4	
Information - Branching Databases	To create questions with yes/no answers	Information - Data Logging	To explain that data gathered over time can be used to answer questions
	To create a branching database		To use a digital device to collect data automatically
	To explain why it is helpful for a database to be well structured		To explain that a data logger collects 'data points' from sensors over time
	To identify objects using a branching database		To use data collected over a long duration to find information

# Upper Key Stage 2 - Computing Progression of Skills

## Computer Science Steps from NCCE Lesson Plans (Teach Computing)

### Upper Key Stage 2 NCCE Learning Objectives

Year 5		Year 6	
Programming A - Selection in Physical Computing	To control a simple circuit connected to a computer	Programming A - Variables in Games	To define a 'variable' as something that is changeable
	To write a program that includes count-controlled loops		To explain why a variable is used in a program
	To explain that a loop can stop when a condition is met, e.g. number of times		To choose how to improve a game by using variables
	To conclude that a loop can be used to repeatedly check whether a condition has been met		To design a project that builds on a given example
	To design a physical project which includes selection		To use my design to create a project
	To create a controllable system which includes selection		To evaluate my project
Y5		Y6	
Programming B - Selection in Quizzes	To explain how selection is used in computer programs	Programming B - Sensing Movement	To create a program to run on a controllable device
	To relate that a conditional statement connects a condition to an outcome		To explain that selection can control the flow of a program
	To explain how selection directs the flow of a program		To update a variable with a user input
	To design a program which uses selection		To use an conditional statement to compare a variable to a value
	To create a program which uses selection		To design a project that uses inputs and outputs on a controllable device
	To evaluate my program		To develop a program to use inputs and outputs on a controllable device
<b>DL &amp; IT Steps</b>			
Year 5		Year 6	
Creating Media - Introduction to Vector Graphics	To identify that drawing tools can be used to produce different outcomes	Creating Media - 3D Modelling	To recognise that you can work in three dimensions on a computer
	To create a vector drawing by combining shapes		To identify that digital 3D objects can be modified
	To use tools to achieve a desired effect		To recognise that objects can be combined in a 3D model
	To recognise that vector drawings consist of layers		To create a 3D model for a given purpose
	To group objects to make them easier to work with		To plan my own 3D model
	To evaluate my vector drawing		To create my own digital 3D model
Y5		Y6	
Creating Media - Video Production	To explain what makes a video effective	Creating Media - Web Page Creation	To review an existing website and consider its structure
	To use a digital device to record video		To plan the features of a web page
	To capture video using a range of techniques		To consider the ownership and use of images (copyright)
	To create a storyboard		To recognise the need to preview pages
	To identify that video can be improved through reshooting and editing		To outline the need for a navigation path
	To consider the impact of the choices made when making and sharing a video		To recognise the implications of linking to content owned by other people
Y5		Y6	
Computing Systems & Networks - Systems and Searching	To explain that computers can be connected together to form systems	Computing Systems and Networks - Communication	To identify how to use a search engine
	To recognise the role of computer systems in our lives		To describe how search engines select results
	To identify how to use a search engine		To explain how search results are ranked
	To describe how search engines select results		To recognise why the order of results is important, and to whom
	To explain how search results are ranked		To recognise how we communicate using technology
	To recognise why the order of results is important, and to whom		To evaluate different methods of online communication
Y5		Y6	
Information - Flat-file Databases	To use a form to record information	Information - Spreadsheets	To identify questions which can be answered using data
	To compare paper and computer-based databases		To explain that objects can be described using data
	To outline how you can answer questions by grouping and then sorting data		To explain that formula can be used to produce calculated data
	To explain that tools can be used to select specific data		To apply formulas to data, including duplicating

Data and	To identify the object attributes needed to collect relevant data	Data and In	To identify the data needed to answer questions
	To compare the information shown in a pictogram with a branching database		To use collected data to answer questions

Data and Information	To explain that computer programs can be used to compare data visually	Data and Information	To create a spreadsheet to plan an event
	To use a real-world database to answer questions		To choose suitable ways to present data