	KS1	Lower key stage 2	Upper key stage 2	Year 6
FOCUS:	What is the technology around us?	How can we connect computers?	Sharing Information	Internet communication
NATIONAL CURRICULUM LINKS:	- Recognise common uses of information technology beyond school - Use technology purposefully to create, organise, store, manipulate, and retrieve digital content - Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	- use sequence, selection, and repetition in programs; work with variables and various forms of input and output - understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration - select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - Use sequence, selection, and repetition in programs; work with variables and various forms of input and output - Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration - Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information - Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration - Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information - Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
VOCABULARY:	*Technology, mouse, keyboard, screen, monitor, click and drag, program, file, cursor*	*Digital device, input, output, computer network, connection, switch, server, wireless access point*	*Computer, system, process, input, output, network, packets, IP address, working online/offline, public private, internet communication*	*Search engines, web crawlers, index, data centre, ranking, communication, one way-two way, one to one, one to many*

END POINTS:	Impact of technology	Computer systems	Computer systems	Effective use of tools/ Networks
	Impact of technology	**Computer systems**	**Computer systems**	**Effective use of tools/ Networks**
	- I can explain how these technology examples help us - I can explain technology as something that helps us - I can locate examples of technology in the classroom **Computer systems** - I can name the main parts of a computer - I can switch on and log into a computer - I can use a mouse to click and drag **Effective use of tools** - I can click and drag to make objects on a screen - I can use a mouse to create a picture - I can use a mouse to open a program - I can save my work to a file - I can say what a keyboard is for - I can type my name on a computer - I can save my work to a file - I can say what a keyboard is for - I can type my name on a computer - I can discuss how we benefit from these rules - I can give examples of some of these rules - I can identify rules to keep us safe and healthy when we are using technology in and beyond the home	- I can explain that digital devices accept inputs - I can explain that digital devices produce outputs - I can follow a process - I can classify input and output devices - I can describe a simple process - I can design a digital device - I can explain how I use digital devices for different activities - I can recognise similarities between using digital devices and non-digital tools - I can suggest differences between using digital devices and non-digital tools **Impact of technology** - I can explain how I use digital devices for different activities - I can recognise similarities between using digital devices and non-digital tools - I can suggest differences between using digital devices and non-digital tools **Networks** - I can discuss why we need a network switch - I can explain how messages are passed through multiple connections - I can recognise different connections - I can demonstrate how information can be passed between devices - I can explain the role of a switch, server, and wireless access point in a network - I can recognise that a computer network is made up of a number of devices - I can identify how devices in a network are connected together - I can identify networked devices around me - I can identify the benefits of computer networks	- I can explain the benefits of a given computer system - I can identify tasks that are managed by computer systems - I can identify the human elements of a computer system - I can describe that a computer system features inputs, processes, and outputs - I can explain that computer systems communicate with other devices - I can explain that systems are built using a number of parts **Networks** - I can explain that data is transferred over networks in packets - I can explain that networked digital devices have unique addresses - I can recognise that data is transferred using agreed methods **Impact of technology** - I can explain that the internet allows different media to be shared - I can recognise that connected digital devices can allow us to access shared files stored online - I can send information over the internet in different ways **Effective use of tools** - I can compare working online with working offline - I can make thoughtful suggestions on my group's work - I can suggest strategies to ensure successful group work **Design and Development** - I can explain how the internet enables effective collaboration - I can identify different ways of working together online - I can recognise that working together on the internet can be public or private	- I can compare results from different search engines - I can complete a web search to find specific information - I can refine my search - I can explain why we need tools to find things online - I can recognise the role of web crawlers in creating an index - I can relate a search term to the search engine's index - I can explain that a search engine follows rules to rank relevant pages - I can explain that search results are ordered - I can suggest some of the criteria that a search engine checks to decide on the order of results - I can describe some of the ways that search results can be influenced - I can explain how search engines make money - I can recognise some of the limitations of search engines - I can choose methods of communication to suit particular purposes - I can explain the different ways in which people communicate - I can identify that there are a variety of ways of communicating over the internet - I can compare different methods of communicating on the internet - I can decide when I should and should not share - I can explain that communication on the internet may not be private

PRIOR LEARNING:	This unit progresses students' knowledge and understanding of technology and how they interact with it in school. Learners will build their knowledge of parts of a computer and develop the basic skills needed to effectively use a computer keyboard and mouse. This unit directly precedes the Y2 Computer systems and networks unit, IT around us	This unit progresses learners' knowledge and understanding of technology by focusing on digital and non-digital devices, and introducing the concept of computers connected together as a network. Following this unit, learners will explore the internet as a network of networks.	This unit progresses learners' knowledge and understanding of computing systems and online collaborative working.	This unit progresses students' knowledge and understanding of computing systems and online collaborative working.
EXPERIENCES:	Drawing of myself and name	Creating a network map of our school	Working collaboratively using TEAMS	N/A
Cross-curricular		**Maths (Lesson 1)** ● **Number and place value:** solve number problems and practical problems involving these ideas. **Art (Lesson 3)** ● to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]		

CYCLE A	TERM Two Creating media		
	Key stage 1	**Lower Keystage 2**	**Upper Key stage 2**
FOCUS:	How can we paint digitally?	How do we create an animation?	How do we edit a video?
NATIONAL CURRICULUM LINKS:	● Use technology purposefully to create, organise, store, manipulate, and retrieve digital content	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information ● use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ● Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information ● Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

VOCABULARY:	Screen, tools, paint, cursor, mouse, keyboard, shape, picture, colour, adjust	Animation, frame, sequencing, storyboard, ipad, app, software, onion skinning, media, export	Videos, features, camera, angles, recording, microphone, sounds, techniques, scenes, editing, shooting, software, hardware
END POINTS:	To describe what different freehand tools do • I can make marks on a screen and explain which tools I used • I can draw lines on a screen and explain which tools I used • I can use the paint tools to draw a picture To use the shape tool and the line tools • I can make marks with the square and line tools • I can use the shape and line tools effectively • I can use the shape and line tools to recreate the work of an artist To make careful choices when painting a digital picture • I can choose appropriate shapes • I can make appropriate colour choices • I can create a picture in the style of an artist To explain why I chose the tools I used • I can explain that different paint tools do different jobs • I can choose appropriate paint tools and colours to recreate the work of an artist • I can say which tools were helpful and why To use a computer on my own to paint a picture • I can make dots of colour on the page	*Effective use of tools/Design and development/creating media* - I can create an effective flip book—style animation - I can draw a sequence of pictures - I can explain how an animation/flip book works - I can create an effective stop-frame animation - I can explain why little changes are needed for each frame - I can predict what an animation will look like - I can break down a story into settings, characters and events - I can create a storyboard - I can describe an animation that is achievable on screen - I can break down a story into settings, characters and events - I can create a storyboard - I can describe an animation that is achievable on screen - *I can evaluate the quality of my animation* - *I can review a sequence of frames to check my work* - *I can use onion skinning to help me make small changes between frames* - - I can evaluate another learner's animation - I can explain ways to make my animation better - I can improve my animation based on feedback - I can add other media to my animation - I can evaluate my final film - I can explain why I added other media to my animation	*Creating media/ design and development/ computing systems* - I can compare features in different videos - I can explain that video is a visual media format - I can identify features of videos - I can experiment with different camera angles - I can identify and find features on a digital video recording device - I can make use of a microphone - I can capture video using a range of filming techniques - I can review how effective my video is - I can suggest filming techniques for a given purpose - I can create and save video content - I can decide which filming techniques I will use - I can outline the scenes of my video - I can explain how to improve a video by reshooting and editing - I can select the correct tools to make edits to my video - I can store, retrieve, and export my recording to a computer - I can evaluate my video and share my opinions - I can make edits to my video and improve the final outcome - I can recognise that my choices when making a video will impact on the quality of the final outcome

	• I can change the colour and brush sizes • I can use dots of colour to create a picture in the style of an artist on my own To compare painting a picture on a computer and on paper • I can explain that pictures can be made in lots of different ways • I can spot the differences between painting on a computer and on paper I can say whether I prefer painting using a computer or using paper		
PRIOR LEARNING:	Learners should be familiar with: • How to switch their device on • Usernames • Passwords For an introduction to keyboard and mouse skills, learners may benefit from completing the Year 1 Computing Systems & Networks unit prior to this unit.	This unit progresses students' knowledge and understanding of using digital devices to create media, exploring how they can create stop-frame animations. Following this unit, learners will further develop their video editing skills in Year 5.	This unit progresses learners' knowledge and understanding of creating media by guiding them systematically through the process involved in creating a video. The unit builds on the Year 4 unit 'Photo editing' where composition is introduced and the Year 3 unit 'Stop-frame animation' where learners explored some of the features of video production. By the end of this unit, learners will have developed the skills required to plan, record, edit, and share a video.
EXPERIENCES:	Digital paintings	Animation	Short film
Cross-curricular	**KS1 Art and Design** Pupils should be taught: • To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space • About the work of a range of artists, craft makers, and designers, describing the differences and similarities between different practices and disciplines and making links to their own work	**Literacy links** • Pupils should be taught to: draft and write by: in narratives, creating settings, characters and plot • Pupils should be taught to: proof-read for spelling and punctuation errors **History** • The Roman Empire and its impact on Britain	

	Key stage 1	Lower Keystage 2	Upper Key stage 2
	**CYCLE A	TERM THREE| Programming A**		
FOCUS:	How can we move a robot?	How to sequence sounds?	Selection in physical computing
NATIONAL CURRICULUM LINKS:	- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions - Create and debug simple programs - Use logical reasoning to predict the behaviour of simple programs - Recognise common uses of information technology beyond school	- Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - Use sequence, selection, and repetition in programs; work with variables and various forms of input and output - Use logical reasoning to explain how some simple algorithms work, and to detect and correct errors in algorithms and programs - Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	- Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - Use sequence, selection, and repetition in programs; work with variables and various forms of input and output - Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information
VOCABULARY:	*Algorithms, digital, devices, debug, programs, technology, command, outcome, turns, bee-bot*	*Debug, physical systems, decomposing, selection, repetition, variables, inputs, outputs, logical reasoning, design, collecting, analysing, presenting*	*Controlling, simulating, physical systems, sequence, selection, repetition, programs, variables, detect, alogrithms,,* collecting, analysing, evaluating
END POINTS:	To explain what a given command will do - I can predict the outcome of a command on a device - I can match a command to an outcome - I can run a command on a device To act out a given word - I can follow an instruction - I can recall words that can be acted out	**Design and development/creating media/programming** - I can explain that objects in Scratch have attributes (linked to) - I can identify the objects in a Scratch project (sprites, backdrops) - I can recognise that commands in Scratch are represented as blocks - I can choose a word which describes an on-screen action for my plan - I can create a program following a design - I can identify that each sprite is controlled by the commands I choose	*Computer systems/programming* - I can create a simple circuit and connect it to a microcontroller - I can explain what an infinite loop does - I can program a microcontroller to make an LED switch on - I can connect more than one output component to a microcontroller - I can design sequences that use count-controlled loops - I can use a count-controlled loop to control outputs - I can design a conditional loop - I can explain that a condition is either true or - I can program a microcontroller to respond to an input

	• I can give directions
	To combine forwards and backwards commands to make a sequence
	    • I can compare forwards and backwards movements
	    • I can start a sequence from the same place
	    • I can predict the outcome of a sequence involving forwards and backwards commands
	To combine four direction commands to make sequences
	    • I can compare left and right turns
	    • I can experiment with turn and move commands to move a robot
	    • I can predict the outcome of a sequence involving up to four commands
	To plan a simple program
	    • I can explain what my program should do
	    • I can choose the order of commands in a sequence
	    • I can debug my program
	To find more than one solution to a problem
	    • I can identify several possible solutions
	    • I can plan two programs
	I can use two different programs to get to the same place
		- I can create a sequence of connected commands
		- I can explain that the objects in my project will respond exactly to the code
		- I can start a program in different ways
		- I can combine sound commands
		- I can explain what a sequence is
		- I can order notes into a sequence
		- I can build a sequence of commands
		- I can decide the actions for each sprite in a program
		- I can make design choices for my artwork
		- I can identify and name the objects I will need for a project
		- I can implement my algorithm as code
		- I can relate a task description to a design
			- I can explain that a condition being met can start an action
			- I can identify a condition and an action in my project
			- I can use selection (an 'if…then…' statement) to direct the flow of a program
			- I can create a detailed drawing of my project
			- I can describe what my project will do
			- I can identify a real-world example of a condition starting an action
			- I can test and debug my project
			- I can use selection to produce an intended outcome
			- I can write an algorithm that describes what my model will do

PRIOR LEARNING:	This unit progresses students' knowledge and understanding of giving and following instructions. It moves from giving instructions to each other to giving instructions to a robot by programming it.	This unit assumes that learners will have some prior experience of programming; the KS1 NCCE units cover floor robots and ScratchJr. However, experience of other languages or environments may also be useful.	
EXPERIENCES:	Moving and programming a robot	Making a piece of music	Microcontroller
Cross-curricular			**Design and Technology (Key stage 2)** Design • Generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and

exploded diagrams, prototypes, pattern pieces, and computer-aided design

Make
- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining, and finishing], accurately
- Select from and use a wider range of materials and components, including construction materials, textiles, and ingredients, according to their functional properties and aesthetic qualities

Evaluate
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

Technical knowledge
- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers, and motors]
- Apply their understanding of computing to program, monitor, and control their products

CYCLE A | TERM FOUR| DATA & INFORMATION			
	Key stage 1	**Lower Keystage 2**	**Upper Key stage 2**
FOCUS:	How do we group data?	Branching databases	Flat-file databases
NATIONAL CURRICULUM LINKS:	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Use technology safely and respectfully	• Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information • Use technology safely, respectfully, and responsibly	• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information
VOCABULARY:	*Technology, organise, store, manipulate, digital content, safe, respect, labels, database*	*Select, use, software, programs, systems, data, branching database*	*Search technologies, selection , ranking, field, record, flat file,*

END POINTS:	To label objects • I can describe objects using labels • I can match objects to groups • I can identify the label for a group of objects To identify that objects can be counted • I can count objects • I can group objects • I can count a group of objects To describe objects in different ways • I can describe an object • I can describe a property of an object • I can find objects with similar properties To count objects with the same properties • I can group similar objects • I can group objects in more than one way • I can count how many objects share a property To compare groups of objects • I can choose how to group objects • I can describe groups of objects • I can record how many objects are in a group To answer questions about groups of objects • I can decide how to group objects to answer a question • I can compare groups of objects • I can record and share what I have found	**Design and development/effective use of tools/ data and information** - I can create two groups of objects separated by one attribute - I can investigate questions with yes/no answers - I can make up a yes/no question about a collection of objects - I can arrange objects into a tree structure - I can create a group of objects within an existing group - I can select an attribute to separate objects into groups - I can group objects using my own yes/no questions - I can prove my branching database works - I can select objects to arrange in a branching database - I can compare two branching database structures - I can create yes/no questions using given attributes - I can explain that questions need to be ordered carefully to split objects into similarly sized groups - I can create questions and apply them to a tree structure - I can select a theme and choose a variety of objects - I can use my branching database to answer questions - I can compare two ways of presenting information - I can explain what a branching database tells me - I can explain what a pictogram tells me	*Effective use of tools/ data and information/ design and development* - I can create multiple questions about the same field - I can explain how information can be recorded - I can order, sort, and group my data cards - I can choose which field to sort data by to answer a given question - I can explain what a 'field' and a 'record' is in a database - I can navigate a flat-file database to compare different views of information - I can combine grouping and sorting to answer more specific questions - I can explain how information can be grouped - I can group information to answer questions - I can choose multiple criteria to answer a given question - I can choose which field and value are required to answer a given question - I can outline how 'AND' and 'OR' can be used to refine data selection - I can explain the benefits of using a computer to create graphs - I can refine a chart by selecting a particular filter - I can select an appropriate chart to visually compare data - I can ask questions that will need more than one field to answer - I can present my findings to a group
PRIOR LEARNING:	This unit will introduce learners to data and information. It will introduce learners to the concept of labelling and grouping objects based on their properties. Learners will develop their understanding that objects can be given labels, which is fundamental to their future learning concerning databases and spreadsheets. In addition, learners will begin to improve their ability to use dragging and	This unit progresses students' knowledge and understanding of presenting information. It builds on their knowledge of data and information from key stage 1. They continue to develop their understanding of attributes and begin to construct and interrogate branching databases as a means of displaying and retrieving information.	This unit progresses pupils' knowledge and understanding of why and how information might be stored in a database, and looks at how tools within a database can help us to answer questions about our data. It moves on to demonstrate how a database can help us display data visually, and how real-life databases can be used to help us solve problems. Finally, the pupils create a presentation showing understanding and application of all the tools used within the unit.

	dropping skills on a device. Following this unit, in year 2, learners will present data graphically in pictograms.		
EXPERIENCES:	Grouping and sorting objects	Branching databases using yes/no questions	Creating charts
Cross-curricular			

CYCLE A | TERM FIVE| CREATING MEDIA 2			
	Key stage 1	**Lower Keystage 2**	**Upper Key stage 2**
FOCUS:	How can we write digitally?	Desktop publishing	Vector Drawing
NATIONAL CURRICULUM LINKS:	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Use technology safely and respectfully, keeping personal information private	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information	• Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information.
VOCABULARY:	*Technology, create, organise, store, manipulate, retrieve, store, processor, backspace, space keys, toolbar, double-click, click and drag*	*Text, images, communication, template, page orientation, placeholders, content, desktop publishing*	*Vector drawing, drawing tools, resize, modify, duplicating,*
END POINTS:	To use a computer to write • I can open a word processor • I can recognise keys on a keyboard • I can identify and find keys on a keyboard To add and remove text on a computer • I can enter text into a computer • I can use letter, number, and Space keys • I can use Backspace to remove text To identify that the look of text can be changed on a computer • I can type capital letters	**Creating media/design and development/effective use of tools/impact of technology** - I can explain the difference between text and images - I can identify the advantages and disadvantages of using text and images - I can recognise that text and images can communicate messages clearly - I can explain the difference between text and images - I can identify the advantages and disadvantages of using text and images - I can recognise that text and images can communicate messages clearly	*Effective use of tools/ creating media* - I can discuss how a vector drawing is different from paper-based drawings - I can identify the main drawing tools - I can recognise that vector drawings are made using shapes - I can explain that each element added to a vector drawing is an object - I can identify the shapes used to make a vector drawing - I can move, resize, and rotate objects I have duplicated - I can explain how alignment grids and resize handles can be used to improve consistency - I can modify objects to create different effects - I can use the zoom tool to help me add detail to my drawings - I can change the order of layers in a vector drawing - I can identify that each added object creates a new layer in the drawing

	- I can explain what the keys that I have already learnt about do - I can identify the toolbar and use bold, italic, and underline To make careful choices when changing text - I can select a word by double-clicking - I can select all of the text by clicking and dragging - I can change the font To explain why I used the tools that I chose - I can say what tool I used to change the text - I can decide if my changes have improved my writing - I can use 'Undo' to remove changes To compare typing on a computer to writing on paper - I can make changes to text on a computer - I can explain the differences between typing and writing I can say why I prefer typing or writing	- I can create a template for a particular purpose - I can define the term 'page orientation' - I can recognise placeholders and say why they are important - I can choose the best locations for my content - I can make changes to content after I've added it - I can paste text and images to create a magazine cover - I can choose a suitable layout for a given purpose - I can identify different layouts - I can match a layout to a purpose - I can compare work made on desktop publishing to work created by hand - I can identify the uses of desktop publishing in the real world - I can say why desktop publishing might be helpful	- I can identify which objects are in the front layer or in the back layer of a drawing - I can copy part of a drawing by duplicating several objects - I can group to create a single object - I can reuse a group of objects to further develop my vector drawing - I can apply what I have learned about vector drawings - I can suggest improvements to a vector drawing - I create alternatives to vector drawings
PRIOR LEARNING:	**English – writing (Y1)** Write sentences by: - saying out loud what they are going to write about - composing a sentence orally before writing it - sequencing sentences to form short narratives - re-reading what they have written to check that it makes sense	This unit progresses learners' knowledge and understanding of using digital devices to combine text and images building on work from the following units; Digital Writing Year 1, Digital painting Year 1, and Digital Photography Year 2.	This unit progresses learners' knowledge and understanding of digital painting and has some links to the Year 3 'Creating media – Desktop publishing' unit, in which learners used digital images. In this Year 5 unit, learners create images that could be used in desktop publishing documents. Please see the learning graph for this unit for more information about progression.
EXPERIENCES:			
Cross-curricular	**English – writing (Y1)** Write sentences by: saying out loud what they are going to write about		

		composing a sentence orally before writing it		
		• sequencing sentences to form short narratives		
		• re-reading what they have written to check that it makes sense		

	Key stage 1	Lower Keystage 2	Upper Key stage 2
FOCUS:	How can we create animations?	Events and actions in programs	Selection in quizzes
NATIONAL CURRICULUM LINKS:	• Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
VOCABULARY:	*Algorithms, programs, instructions, debug, sprites, blocks*	*Program, debug, sequence, selection, repetition, features*	*Program, conditions, selection, infinite loop, flow, share, export*
END POINTS:	• I can find the commands to move a sprite • I can use commands to move a sprite	**Programming/design and development/effective use of tools** - I can choose which keys to use for actions and explain my choices - I can explain the relationship between an event and an action - I can identify a way to improve a program	**Design and development/programming/algorithms** - I can identify conditions in a program - I can modify a condition in a program - I can recall how conditions are used in selection

	• I can compare different programming tools • I can use more than one block by joining them together • I can use a **Start** block in a program • I can run my program • I can find blocks that have numbers • I can change the value • I can say what happens when I change a value • I can show that a project can include more than one sprite • I can delete a sprite • I can add blocks to each of my sprites • I can choose appropriate artwork for my project • I can decide how each sprite will move • I can create an algorithm for each sprite • I can use sprites that match my design • I can add programming blocks based on my algorithm • I can test the programs I have created	- I can choose a character for my project - I can choose a suitable size for a character in a maze - I can program movement - I can choose blocks to set up my program - I can consider the real world when making design choices - I can use a programming extension - I can build more sequences of commands to make my design work - I can choose suitable keys to turn on additional features - I can identify additional features (from a given set of blocks) - I can match a piece of code to an outcome - I can modify a program using a design - I can test a program against a given design - I can evaluate my project - I can implement my design - I can make design choices and justify them	- I can create a program with different outcomes using selection - I can identify the condition and outcomes in an 'if... then... else...' statement - I can use selection in an infinite loop to check a condition - I can design the flow of a program which contains 'if... then... else...' - I can explain that program flow can branch according to a condition - I can show that a condition can direct program flow in one of two ways - I can identify the outcome of user input in an algorithm - I can outline a given task - I can use a design format to outline my project - I can implement my algorithm to create the first section of my program - I can share my program with others - I can test my program - I can extend my program further - I can identify the setup code I need in my program - I can identify ways the program could be improved
PRIOR LEARNING:	This unit progresses learners' knowledge and understanding of programming and follows on from 'Programming A – Moving a robot', where children will have learned to program a floor robot using instructions.	This unit assumes that learners will have some prior experience of programming. The key stage 1 National Centre for Computing Education units focus on floor robots and ScratchJr, however experience of other languages or environments may also be useful. The Year 3 — Programming A unit introduces the Scratch programming environment and the concept of sequences.	This unit assumes that learners will have prior experience of programming using block-based construction (eg Scratch), understand the concepts of 'sequence' and 'repetition', and have some experience of using 'selection'. Ideally, learners will have completed 'Programming A – Selection in physical computing' before undertaking this unit, as this will provide them with the required knowledge of 'selection'.
EXPERIENCES:	Animation- characters movement	Writing algorithms and programs	Creating an interactive quiz
Cross-curricular			

	EYFS					
Term	1	2	3	4	5	6
Learning	Understand, identify and use technology at home and at school	Explore class iPad's	Begin to use mouse on a desktop/	Use a keyboard for basic typing	Use a trackpad on a laptop	Bee-bots early programming