



Computing – Curriculum Content

Early Years Foundation Stage - Early Learning Goals (linked to Computing)

Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, which focuses on the learning and development of children from birth to age five, there are many opportunities for young children to use technology to solve problems and produce creative outcomes. In particular, many areas of the framework provide opportunities for pupils to develop their ability to use computational thinking effectively. Effective teaching and learning gives children the opportunity to play and explore, participate in active learning and create and think critically. The activities outlined below have therefore been included to meet these criteria where feasible. Tasks are outlined for each area of the EYFS framework, although many other opportunities exist to use technology with younger children; particularly when linked to a topic studied within class.

Understanding the World:

Classrooms could contain a role play area with a range of technology, both functioning and model / broken devices, or a variety of electronic toys, such as remote-controlled cars, walkie-talkies and interactive pets, as part of continuous provision. Further technology could be included in conjunction with other activities, such as digital cameras for pupils to photograph their own learning, although children should ideally be given the opportunity to select and use technology for a certain purpose, rather than simply being given a device. The pedagogical approaches used in this age group should also be carefully considered, which includes the need to tinker, or play, with a device, in order to discover how it functions.

Literacy:

Bee Bots continue to be extremely popular in both EYFS and Key Stage 1, and provide a number of opportunities to develop pupils' computing knowledge within literacy sessions. Children could create a story about the Bee Bot's journey, such as around a local area or a country being studied, or they could sequence events within a story being studied. For example, children could guide the Bee Bot between different locations, characters and locations within Little Red Riding Hood. Should devices not be available, the Barefoot website has Fake Bots available, which children can use instead of a digital device. In addition to this, programming devices suitable for young children are being developed by a range of manufacturers, such as the Code-a-pillar by Fisher-Price.

Physical Development:

Many children entering Early Years settings are already familiar with tablet devices, although their ability to use a keyboard and mouse is often limited. This has recently become a more significant issue, due to the prevalence of tablet devices in the home. It is therefore important that children are given opportunities to become familiar with a range of input devices, including the keyboard and mouse, in order to develop the required fine motor skills. Usage could be linked to phonics sessions, such as through the use of drill and practice games, including Dance Mat Typing or the Animal Typing app, or more creative outcomes, as described when examining the areas below.

Communication and Language:

Unplugged activities, or those away from the machine, give children an opportunity to develop their understanding of technology without the need for expensive devices. Children could be asked to give precise instructions verbally, such as through giving instructions to a sandwich making robot, with links made to the importance of using the correct vocabulary, along with speaking clearly and precisely. Giving instructions could also form part of sessions linked to physical development activities, such as determining rules for certain playground games.

Personal, Social and Emotional Development:

Voice recorders, or the microphone built into a tablet device, could be used to record how pupils are feeling, or to discuss their relationships with others. This could be extended through pupils creating their own videos, which could also link to children giving online safety guidance to their peers on appropriate use of technology and what to do if they feel worried or concerned when using a device. A range of age-appropriate books are now available for young children to examine online safety, such as Chicken Clicking, Goldilocks (A hashtag cautionary tale) and the free Smartie the Penguin. Using voice and video recorders also allows children to self-evaluate their own speaking.

Expressive Arts and Design:

The use of painting and graphics applications can further develop pupils' keyboard and mouse skills, whilst a range of tablet-based apps are also available, such as the free Doodle Buddy. Creative outcomes can be produced, which allows pupils to take ownership of their work and could even be part of an extended project. Outputs produced could be linked to other uses of technology, such as producing mats for Bee Beets to travel around, whilst other physical computing devices, such as Spheros, can even be put into paint and controlled using a tablet device to produce images. Outfits for a device to wear, such as Bee Bot head dresses or Sphero paper cup people, could also be developed.

Mathematics:

Controlling devices provides an excellent opportunity to develop pupils' understanding of left and right, along with directional language. Pupils could be asked to guide a device around a shape, or even use activities from computing related websites, such as code.org, to develop their understanding further. However, whilst such activities can effectively engage pupils in programming tasks, their usage should be carefully considered to ensure they have a purpose.

KS1 and KS2 National Curriculum - Purpose of Study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

National Curriculum – Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.
-

KS1 Breadth of Study

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions

KS2 Breadth of Study

Pupils should be taught to:

- 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

<ul style="list-style-type: none"> • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • 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. 	<ul style="list-style-type: none"> • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • 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.
---	---

Year 1			
Term	Unit	Skills and Knowledge (Success Criteria)	National Curriculum Links
Autumn	Computing Systems and Networks - Technology Around Us	<p>To identify technology:</p> <ul style="list-style-type: none"> - 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 <p>To identify a computer and its main parts:</p> <ul style="list-style-type: none"> - 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 <p>To use a mouse in different ways:</p> <ul style="list-style-type: none"> - 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 <p>To use a keyboard to type:</p> <ul style="list-style-type: none"> - I can save my work to a file - I can tell you that writing on a computer is called typing 	<ul style="list-style-type: none"> • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • use technology safely and respectfully, keeping personal information private;

		<p>- I can type my name on a computer</p> <p>To use the keyboard to edit text:</p> <ul style="list-style-type: none"> - I can delete letters - I can open my work from a file - I can use the arrow keys to move the cursor <p>To create rules for using technology responsibly:</p> <ul style="list-style-type: none"> - 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 	<p>identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies</p>
Spring	Creating Media - Digital Painting	<p>To describe what different freehand tools do:</p> <ul style="list-style-type: none"> - I can draw lines on a screen and explain which tools I used - I can make marks on a screen and explain which tools I used - I can use the paint tools to draw a picture <p>To use the shape tool and the line tools:</p> <ul style="list-style-type: none"> - 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 <p>To make careful choices when painting a digital picture:</p> <ul style="list-style-type: none"> - I can choose appropriate shapes - I can create a picture in the style of an artist - I can make appropriate colour choices <p>To explain why I chose the tools I used:</p> <ul style="list-style-type: none"> - I can choose appropriate paint tools and colours to recreate the work of an artist - I can say which tools were helpful and why - I know that different paint tools do different jobs <p>To use a computer on my own to paint a picture:</p> <ul style="list-style-type: none"> - I can change the colour and brush sizes - I can make dots of colour on the page - I can use dots of colour to create a picture in the style of an artist on my own <p>To compare painting a picture on a computer and on paper:</p> <ul style="list-style-type: none"> - I can explain that pictures can be made in lots of different ways - I can say whether I prefer painting using a computer or using paper - I can spot the differences between painting on a computer and on paper 	<ul style="list-style-type: none"> • use technology purposefully to create, organise, store, manipulate and retrieve digital content

<p>Summer</p>	<p>Programming - Moving a Robot</p>	<p>To explain what a given command will do: - I can match a command to an outcome - I can predict the outcome of a command on a device - I can run a command on a device" To act out a given word: - I can follow an instruction - I can give directions - I can recall words that can be acted out To combine forwards and backwards commands to make a sequence: - I can compare forwards and backwards movements - I can predict the outcome of a sequence involving forwards and backwards commands - I can start a sequence from the same place 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 choose the order of commands in a sequence - I can debug my program - I can explain what my program should do 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</p>	<ul style="list-style-type: none"> • 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
<p>Ongoing Curriculum Links</p>	<p>Grouping Data</p>	<p>To label objects: - I can describe objects using labels - I can identify the label for a group of objects - I can match objects to groups To identify that objects can be counted: - I can count a group of objects - I can count objects - I can group objects" To describe objects in different ways: - I can describe a property of an object - I can describe an object</p>	<ul style="list-style-type: none"> • use technology purposefully to create, organise, store, manipulate and retrieve digital content • use technology safely and respectfully, keeping personal information private;

	<p>- I can find objects with similar properties</p> <p>To count objects with the same properties:</p> <p>- I can count how many objects share a property</p> <p>- I can group objects in more than one way</p> <p>- I can group similar objects"</p> <p>To compare groups of objects:</p> <p>- I can choose how to group objects</p> <p>- I can describe groups of objects</p> <p>- I can record how many objects are in a group</p> <p>To answer questions about groups of objects:</p> <p>- I can compare groups of objects</p> <p>- I can decide how to group objects to answer a question</p> <p>- I can record and share what I have found"</p>	<p>identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies</p>
--	---	---

Year 2			
Term	Unit	Skills and Knowledge (Success Criteria)	National Curriculum Links
Autumn	Computing Systems and Networks - Information Technology Around Us	<p>To recognise the uses and features of information technology:</p> <p>- I can describe some uses of computers</p> <p>- I can identify examples of computers</p> <p>- I can identify that a computer is a part of information technology</p> <p>To identify information technology in the home</p> <p>- I can explain the purpose of information technology in the home</p> <p>- I can move and resize images</p>	<ul style="list-style-type: none"> • use technology purposefully to create, organise, store, manipulate and retrieve digital content

		<p>- I can open a file</p> <p>To identify information technology beyond school</p> <ul style="list-style-type: none"> - I can compare types of information technology - I can find examples of information technology - I can talk about uses of information technology <p>To explain how information technology benefits us :</p> <ul style="list-style-type: none"> - I can demonstrate how information technology is used in a shop - I can explain how information technology helps people - I can recognise that information technology can be connected <p>To show how to use information technology safely:</p> <ul style="list-style-type: none"> - I can list different uses of information technology - I can recognise how to use information technology responsibly - I can say how those rules/guides can help me <p>To recognise that choices are made when using information technology:</p> <ul style="list-style-type: none"> - I can enjoy a variety of activities - I can explain simple guidance for using information technology in different environments and settings - I can identify the choices that I make when using information technology 	<ul style="list-style-type: none"> • recognise common uses of information technology beyond school • 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
Autumn	Pictograms (linked to Maths)	<p>To recognise that we can count and compare objects using tally charts:</p> <ul style="list-style-type: none"> - I can compare totals in a tally chart - I can record data in a tally chart - I can represent a tally count as a total <p>To recognise that objects can be represented as pictures:</p> <ul style="list-style-type: none"> - I can enter data onto a computer - I can use a computer to view data in a different format - I can use pictograms to answer simple questions about objects <p>To create a pictogram:</p> <ul style="list-style-type: none"> - I can explain what the pictogram shows - I can organise data in a tally chart - I can use a tally chart to create a pictogram <p>To select objects by attribute and make comparisons:</p> <ul style="list-style-type: none"> - I can answer 'more than'/'less than' and 'most/least' questions about an attribute - I can create a pictogram to arrange objects by an attribute - I can tally objects using a common attribute <p>To recognise that people can be described by attributes:</p>	<ul style="list-style-type: none"> • 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

		<ul style="list-style-type: none"> - I can choose a suitable attribute to compare people - I can collect the data I need - I can create a pictogram and draw conclusions from it <p>To explain that we can present information using a computer:</p> <ul style="list-style-type: none"> - I can give simple examples of why information should not be shared - I can share what I have found out using a computer - I can use a computer program to present information in different ways 	<p>other online technologies</p>
Spring	<p>Creating Media - Making Music</p>	<p>To say how music can make us feel:</p> <ul style="list-style-type: none"> - I can describe how music makes me feel, e.g. happy or sad - I can identify simple differences in pieces of music - I can listen with concentration to a range of music (links to the Music curriculum) <p>To identify that there are patterns in music:</p> <ul style="list-style-type: none"> - I can create a rhythm pattern - I can explain that music is created and played by humans - I can play an instrument following a rhythm pattern <p>To describe how music can be used in different ways:</p> <ul style="list-style-type: none"> - I can connect images with sounds - I can relate an idea to a piece of music - I can use a computer to experiment with pitch and duration <p>To show how music is made from a series of notes:</p> <ul style="list-style-type: none"> - I can identify that music is a sequence of notes - I can refine my musical pattern on a computer - I can use a computer to create a musical pattern using three notes <p>To create music for a purpose:</p> <ul style="list-style-type: none"> - I can describe an animal using sounds - I can explain my choices - I can save my work <p>To review and refine our computer work:</p> <ul style="list-style-type: none"> - I can explain how I made my work better - I can listen to music and describe how it makes me feel - I can reopen my work 	<ul style="list-style-type: none"> • use technology purposefully to create, organise, store, manipulate and retrieve digital content
Summer	<p>Programming - Robot Algorithms</p>	<p>To describe a series of instructions as a sequence:</p> <ul style="list-style-type: none"> - I can choose a series of words that can be enacted as a sequence - I can follow instructions given by someone else 	<ul style="list-style-type: none"> • understand what algorithms are, how they are

		<p>- I can give clear and unambiguous instructions</p> <p>To explain what happens when we change the order of instructions:</p> <ul style="list-style-type: none"> - I can create different algorithms for a range of sequences (using the same commands) - I can show the difference in outcomes between two sequences that consist of the same commands - I can use an algorithm to program a sequence on a floor robot <p>To use logical reasoning to predict the outcome of a program (series of commands):</p> <ul style="list-style-type: none"> - I can compare my prediction to the program outcome - I can follow a sequence - I can predict the outcome of a sequence <p>To explain that programming projects can have code and artwork :</p> <ul style="list-style-type: none"> - I can explain the choices I made for my mat design - I can identify different routes around my mat - I can test my mat to make sure that it is usable <p>To design an algorithm:</p> <ul style="list-style-type: none"> - I can create an algorithm to meet my goal - I can explain what my algorithm should achieve - I can use my algorithm to create a program <p>To create and debug a program that I have written:</p> <ul style="list-style-type: none"> - I can plan algorithms for different parts of a task - I can put together the different parts of my program - I can test and debug each part of the program 	<p>implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</p> <ul style="list-style-type: none"> • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs • use technology purposefully to create, organise, store, manipulate and retrieve digital content
--	--	---	---

Year 3			
Term	Unit	Skills and Knowledge (Success Criteria)	National Curriculum Links

<p>Autumn</p>	<p>Computing Systems and Networks - Connecting Computers</p>	<p>To explain how digital devices function:</p> <ul style="list-style-type: none"> - I can explain that digital devices accept inputs - I can explain that digital devices produce outputs - I can follow a process <p>To identify input and output devices :</p> <ul style="list-style-type: none"> - I can classify input and output devices - I can design a digital device - I can model a simple process <p>To recognise how digital devices can change the way we work:</p> <ul style="list-style-type: none"> - 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 <p>To explain how a computer network can be used to share information:</p> <ul style="list-style-type: none"> - I can discuss why we need a network switch - I can explain how messages are passed through multiple connections - I can recognise different connections <p>To explore how digital devices can be connected:</p> <ul style="list-style-type: none"> - 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 <p>To recognise the physical components of a network:</p> <ul style="list-style-type: none"> - I can identify how devices in a network are connected with one another - I can identify networked devices around me - I can identify the benefits of computer networks 	<ul style="list-style-type: none"> • 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
<p>Spring</p>	<p>Creating Media - Desktop Publishing</p>	<p>To recognise how text and images convey information:</p> <ul style="list-style-type: none"> - 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 <p>To recognise that text and layout can be edited:</p> <ul style="list-style-type: none"> - I can change font style, size, and colours for a given purpose - I can edit text - I can explain that text can be changed to communicate more clearly 	<ul style="list-style-type: none"> • 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

		<p>To choose appropriate page settings:</p> <ul style="list-style-type: none"> - 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 <p>To add content to a desktop publishing publication:</p> <ul style="list-style-type: none"> - 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 <p>To consider how different layouts can suit different purposes:</p> <ul style="list-style-type: none"> - I can choose a suitable layout for a given purpose - I can identify different layouts - I can match a layout to a purpose <p>To consider the benefits of desktop publishing:</p> <ul style="list-style-type: none"> - 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 	<p>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</p>
<p>Summer</p>	<p>Programming - Sequence in Music</p>	<p>To explore a new programming environment:</p> <ul style="list-style-type: none"> - 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 <p>I can identify that each sprite is controlled by the commands I choose:</p> <ul style="list-style-type: none"> - I can choose a word which describes an on-screen action for my design - I can create a program following a design - I can identify that each sprite is controlled by the commands I choose <p>To explain that a program has a start:</p> <ul style="list-style-type: none"> - 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 <p>To recognise that a sequence of commands can have an order:</p> <ul style="list-style-type: none"> - I can combine sound commands - I can explain what a sequence is - I can order notes into a sequence <p>To change the appearance of my project:</p> <ul style="list-style-type: none"> - I can build a sequence of commands 	<ul style="list-style-type: none"> • 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

		<ul style="list-style-type: none"> - I can decide the actions for each sprite in a program - I can make design choices for my artwork <p>To create a project from a task description:</p> <ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> • 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
--	--	---	--

Year 4			
Term	Unit	Skills and Knowledge (Success Criteria)	National Curriculum Links
Autumn	Computing Systems and Networks - The internet	<p>To describe how networks physically connect to other networks:</p> <ul style="list-style-type: none"> - I can demonstrate how information is shared across the internet - I can describe the internet as a network of networks - I can discuss why a network needs protecting <p>To recognise how networked devices make up the internet:</p> <ul style="list-style-type: none"> - I can describe the different networked devices and how they connect - I can explain how the internet allows us to view the World Wide Web - I can recognise that the World Wide Web is the part of the internet that contains websites and web pages <p>To outline how websites can be shared via the World Wide Web:</p> <ul style="list-style-type: none"> - I can describe how to access websites on the WWW 	<ul style="list-style-type: none"> • 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

		<p>- I can describe where websites are stored when uploaded to the WWW</p> <p>- I can explain the types of media that can be shared on the World Wide Web (WWW)</p> <p>To describe how content can be added and accessed on the World Wide Web:</p> <p>- I can create media which can be found on websites</p> <p>- I can explain that new content can be created online</p> <p>- I can recognise that I can add content to the WWW</p> <p>To recognise how the content of the WWW is created by people:</p> <p>- I can explain that there are rules to protect content</p> <p>- I can explain that websites and their content are created by people</p> <p>- I can suggest who owns the content on websites</p> <p>To evaluate the consequences of unreliable content:</p> <p>- I can explain that not everything on the World Wide Web is true.</p> <p>- I can explain why I need to think carefully before I share or reshare content</p> <p>- I can explain why some information I find online may not be honest, accurate, or legal.</p>	<p>discerning in evaluating digital content</p> <ul style="list-style-type: none"> • 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
Spring	Creating Media - Audio Editing	<p>To identify that sound can be digitally recorded:</p> <p>- I can identify digital devices that can record sound and play it back</p> <p>- I can identify the inputs and outputs required to play audio or record sound</p> <p>- I can recognise the range of sounds that can be recorded</p> <p>To use a digital device to record sound:</p> <p>- I can discuss what other people include when recording sound for a podcast</p> <p>- I can suggest how to improve my recording</p> <p>- I can use a device to record audio and play back sound</p> <p>To explain that a digital recording is stored as a file:</p> <p>- I can discuss why it is useful to be able to save digital recordings</p> <p>- I can plan and write the content for a podcast</p> <p>- I can save a digital recording as a file</p> <p>To explain that audio can be changed through editing:</p> <p>- I can discuss ways in which audio recordings can be altered</p> <p>- I can edit sections of an audio recording</p> <p>- I can open a digital recording from a file</p>	<ul style="list-style-type: none"> • 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

		<p>To show that different types of audio can be combined and played together:</p> <ul style="list-style-type: none"> - I can choose suitable sounds to include in a podcast - I can discuss sounds that other people combine - I can use editing tools to arrange sections of audio <p>To evaluate editing choices made:</p> <ul style="list-style-type: none"> - I can discuss the features of a digital recording I like - I can explain that digital recordings need to be exported to share them - I can suggest improvements to a digital recording 	<p>acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p>
<p>Summer</p>	<p>Programming - Repetition in Games</p>	<p>To develop the use of count-controlled loops in a different programming environment:</p> <ul style="list-style-type: none"> - I can list an everyday task as a set of instructions including repetition - I can modify a snippet of code to create a given outcome - I can predict the outcome of a snippet of code <p>To explain that in programming there are infinite loops and count controlled loops:</p> <ul style="list-style-type: none"> - I can choose when to use a count-controlled and an infinite loop - I can modify loops to produce a given outcome - I can recognise that some programming languages enable more than one process to be run at once <p>To develop a design which includes two or more loops which run at the same time:</p> <ul style="list-style-type: none"> - I can choose which action will be repeated for each object - I can evaluate the effectiveness of the repeated sequences used in my program - I can explain what the outcome of the repeated action should be <p>To modify an infinite loop in a given program:</p> <ul style="list-style-type: none"> - I can explain the effect of my changes - I can identify which parts of a loop can be changed - I can re-use existing code snippets on new sprites <p>To design a project that includes repetition:</p> <ul style="list-style-type: none"> - I can develop my own design explaining what my project will do - I can evaluate the use of repetition in a project - I can select key parts of a given project to use in my own design <p>To create a project that includes repetition:</p>	<ul style="list-style-type: none"> • 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

		<ul style="list-style-type: none"> - I can build a program that follows my design - I can evaluate the steps I followed when building my project - I can refine the algorithm in my design 	
--	--	---	--

Year 5			
Term	Unit	Skills and Knowledge (Success Criteria)	National Curriculum Links
Autumn	Computing Systems and Networks - Sharing Information	<p>To explain that computers can be connected together to form systems:</p> <ul style="list-style-type: none"> - 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 <p>To recognise the role of computer systems in our lives:</p> <ul style="list-style-type: none"> - 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 <p>To recognise how information is transferred over the internet:</p> <ul style="list-style-type: none"> - 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 <p>To explain how sharing information online lets people in different places work together:</p> <ul style="list-style-type: none"> - 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 <p>To contribute to a shared project online:</p> <ul style="list-style-type: none"> - 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 <p>To evaluate different ways of working together online:</p>	<ul style="list-style-type: none"> • 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

		<ul style="list-style-type: none"> - 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 	<p>goals, including collecting, analysing, evaluating and presenting data and information</p> <ul style="list-style-type: none"> • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
Spring	Creating Media - Video Editing	<p>To recognise video as moving pictures, which can include audio:</p> <ul style="list-style-type: none"> - I can explain that a video can include both visual and audio media - I can explain the benefits of adding audio to a video - I can plan a video project using a storyboard <p>To identify digital devices that can record video:</p> <ul style="list-style-type: none"> - I can choose the most suitable digital device for recording my project - I can identify and name digital devices that can record video and sound - I can locate and identify the working features of a digital device that can record video <p>To capture video using a digital device:</p> <ul style="list-style-type: none"> - I can demonstrate suitable methods of using a digital device to capture my video - I can demonstrate the safe use and handling of devices - I can select a suitable device and software to capture my video <p>To recognise the features of an effective video:</p> <ul style="list-style-type: none"> - I can explain why lighting and angle are important in creating an effective video - I can list some of the features of an effective video - I can record a video that demonstrates some of the features of an effective video <p>To identify that video can be improved through reshooting and editing:</p> <ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> • 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

		<p>To consider the impact of the choices made when making and sharing a video:</p> <ul style="list-style-type: none"> - 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 	
Summer	Programming - Selection in Quizzes	<p>To explain how selection is used in computer programs:</p> <ul style="list-style-type: none"> - I can identify conditions in a program - I can modify a condition in a program - I can recall how conditions are used in selection <p>To relate that a conditional statement connects a condition to an outcome:</p> <ul style="list-style-type: none"> - 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 <p>To explain how selection directs the flow of a program:</p> <ul style="list-style-type: none"> - 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 <p>To design a program which uses selection:</p> <ul style="list-style-type: none"> - 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 <p>To create a program which uses selection:</p> <ul style="list-style-type: none"> - 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 <p>To evaluate my program:</p> <ul style="list-style-type: none"> - I can extend my program further - I can identify ways the program could be improved - I can identify what setup code my project needs 	<ul style="list-style-type: none"> • 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

Year 6

Term	Unit	Skills and Knowledge (Success Criteria)	National Curriculum Links
Autumn	Computing Systems and Networks - Communication	<p>To identify how to use a search engine:</p> <ul style="list-style-type: none"> - I can compare results from different search engines - I can complete a web search to find specific information - I can refine my search <p>To describe how search engines select results:</p> <ul style="list-style-type: none"> - 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 <p>To explain how search results are ranked:</p> <ul style="list-style-type: none"> - 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 <p>To recognise why the order of results is important, and to whom:</p> <ul style="list-style-type: none"> - 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 <p>To recognise how we communicate using technology:</p> <ul style="list-style-type: none"> - 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 <p>To evaluate different methods of online communication:</p> <ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> • 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

			<ul style="list-style-type: none"> • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
Spring	Creating Media - Web Page Creation	<p>To review an existing website and consider its structure:</p> <ul style="list-style-type: none"> - I can discuss the different types of media used on websites - I can explore a website - I know that websites are written in HTML <p>To plan the features of a web page:</p> <ul style="list-style-type: none"> - I can draw a web page layout that suits my purpose - I can recognise the common features of a web page - I can suggest media to include on my page <p>To consider the ownership and use of images (copyright):</p> <ul style="list-style-type: none"> - I can describe what is meant by the term 'fair use' - I can find copyright-free images - I can say why I should use copyright-free images <p>To recognise the need to preview pages:</p> <ul style="list-style-type: none"> - I can add content to my own web page - I can evaluate what my web page looks like on different devices and suggest/make edits. - I can preview what my web page looks like <p>To outline the need for a navigation path:</p> <ul style="list-style-type: none"> - I can describe why navigation paths are useful - I can explain what a navigation path is - I can make multiple web pages and link them using hyperlinks <p>To recognise the implications of linking to content owned by other people</p> <ul style="list-style-type: none"> - I can create hyperlinks to link to other people's work - I can evaluate the user experience of a website - I can explain the implication of linking to content owned by others 	<ul style="list-style-type: none"> • 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
Summer	Programming - Sensing Movement	<p>To create a program to run on a controllable device:</p> <ul style="list-style-type: none"> - I can apply my knowledge of programming to a new environment - I can test my program on an emulator 	<ul style="list-style-type: none"> • design, write and debug programs that accomplish specific goals,

	<p>- I can transfer my program to a controllable device</p> <p>To explain that selection can control the flow of a program:</p> <ul style="list-style-type: none"> - I can determine the flow of a program using selection - I can identify examples of conditions in the real world - I can use a variable in an if... then... else... statement to select the flow of a program <p>To update a variable with a user input:</p> <ul style="list-style-type: none"> - I can experiment with different physical inputs - I can explain that if you read a variable, the value remains - I can use a condition to change a variable <p>To use an conditional statement to compare a variable to a value:</p> <ul style="list-style-type: none"> - I can explain the importance of the order of conditions in else if statements - I can modify a program to achieve a different outcome - I can use an operand (e.g. <=>) in an if... then... statement <p>To design a project that uses inputs and outputs on a controllable device:</p> <ul style="list-style-type: none"> - I can decide what variables to include in a project - I can design the algorithm for my project - I can design the program flow for my project <p>To develop a program to use inputs and outputs on a controllable device:</p> <ul style="list-style-type: none"> - I can create a program based on my design - I can test my program against my design - I can use a range of approaches to find and fix bugs 	<p>including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <ul style="list-style-type: none"> • 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
--	--	---