The Meadows Primary Academy

Computing

Core Values: Resilience, Respect, Team Work, Aspiration, Kindness, Curiosity
Curriculum Intent: RAISE

Logic	Computational logic is the process of working step-by-step to understand a problem and develop a solution. It describes the decision-making process used in programming and writing algorithms.
Abstraction	Abstraction is an important part of computer programming. In computing, abstraction is the technique used to arrange computer systems and hide the complexity of programs to make it more accessible to the everyday user.
Machines	A computing machine is a device used to perform calculations and process data.
Algorithms	An algorithm is a process or set of rules followed in calculations or other problem-solving operations, especially by a computer.
Program	A computing program is a collection of instructions that performs a specific task when executed by a computer.
Data	Data is any sequence of one or more symbols given meaning by specific acts of interpretation. Computer data is information processed or stored by a computer.

The Meadows Primary Academy - COMPUTING progression through EYFS
Understanding the World: Computing Overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking)

ELG
NO ELGs are represented for this area.

Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handing information	Vocabulary- To be used daily.
Nursery Skills	• Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as interactive screen, table top computer and tablets	• Knows how to operate simple equipment, e.g. turn on CD player, uses a remote control, can navigate touch-capable technology with support	• Know how to handle equipment safely • Begin to know that they shouldn't use devices without supervision	• Knows that information can be retrieved from digital devices and the internet	• Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images	Choices, equipment, buttons, movement, screen, keyboard, count, organise,
Nursery Knowledge	Autumn 1 Ourselves	Autumn 2 celebrations	Spring 1 Moving on up	Spring 2 What a wonderful world	Summer 1 What's the story	Summer 2 Rescue me
	•Explore different toys in role play such as telephones, cameras, keyboards.	•Can operate a simple CD player by pressing start and stop to play music.	•Understands that we can search for information on 'google' by typing in a word to find out more.	•Can use a simple I board touch programme to draw a picture by changing tools and colours using the on-screen options.	•Can operate simple games on the iPad and know to open and end a programme.	Can follow instructions when operating a device

Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility.
Role-play will be a key area where a range of technologies will be used in play - telephones, microwaves, cookers, keyboards. These should be modelled.
Interactive screen and table top computer as part of continuous provision

The Meadows Primary Academy - COMPUTING progression through EYFS
Understanding the World: Computing Overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking)

ELG
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Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handing information	Vocabulary- To be used daily.
Reception Skills	• Completes a simple program on electronic devices	• Begin to list different IT in their home	• Begin to give reasons why we need to stay safe online • Can use the internet with adult supervision to find and retrieve information of interest to them	• Can create content such as a video recording, stories, and/or draw a picture on screen	• Develops digital literacy skills by being able to access, understand and interact with a range of technologies	Internet, website, mouse, images, paint, technology, share, collect, set, sound, communicate, videos, photos, programme
Reception Knowledge	**Autumn 1** "Who am I?"	**Autumn 2** "Who am I?"	**Spring 1** "Food to fork"	**Spring 2** "Food to fork"	**Summer 1** "where will we go now? Water water everywhere"	**Summer 2** "where will we go now? Water water everywhere"
	•Can turn on an iPad or a Kindle to open a programme and follow instructions. •Can explain how to stay safe when using the internet.	•Can follow the teacher's instructions when using an online interactive programme such as paint or draw.	•To collect information about the measurement of plants and see which was the best environment for growing in.	•Can write a variety of CVC words using a keyboard.	•Can use the iPad or Kindle to take their own images •Can send a group class email to a different class and wait for a response.	•Can use 'Google' to find out more information about animals and use the images to support their own representations. .

E-Safety | Computer Skills | Programming | Word Processing skills | Data Collection

Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility.
Role-play areas will be a key area where a range of technologies will be used in play- telephones, microwaves, cookers, keyboards, tills. These should be modelled.

KS1: Cycle A

NC states that in KS1, 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
- 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

Digital Literacy

- It is important to log in to a site safely and the importance of keeping passwords safe.
- Many online sites, including Purple Mash, have an area for their work that is accessible only to the user.
- An avatar is a virtual representation of them suitable for use online.
- Online platforms, such as Purple Mash, have search functionality which allows users to efficiently find resources and tools.
- Different icons in a tools bar carry out different functions.
- Many of the tools in sites such as Purple Mash will have a common design theme, and which means familiarity of the functionality of icons across different applications.
- It is important to log out when they have finished working as a way of securing personal accounts.
- The Internet is a global network of connected computers around the World.
- The World Wide Web refers to the documents and pages someone sees when using a browser. Websites can be found using a browser that contains a search engine.
- Search engines use millions of people's digital footprints to help provide more accurate results.
- To find results that we want on a search engine, we need to search effectively.
- Technology is science and engineering knowledge put into practical use to solve problems or invent useful tools.
- Technology is used within and outside of school.

Computer Science

- To achieve a specific effect when building something, accurate instructions must be followed.
- Computer programs need precise instructions to follow, and these are called algorithms. If instructions are vague, outcomes will vary for any given task.
- The order of instructions for a task affects the results.
- Correcting errors in an algorithm or program is called debugging.
- Items can be sorted using a range of criteria.
- When sorting items, a logical process should be used.
- An algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective.
- Computer programs need clear instructions, in steps, to follow.
- The instructions written for a computer program are called algorithms.
- Humans can follow algorithms to sort items such as shapes, just as computer programs can.
- Computers can be used as a way of sorting on screen objects.
- Tasks can be given to people and computers by using instructions. Computer programs work by following instructions called code known as algorithms. In both cases, these need to be clear and concise.
- There are objects and action code block in the 2Code environment and that you can make a simple program using these. Each single instruction such as 'Object Right' is called a command.
- An event is something that makes a block of code run such as a user pressing a key or clicking a screen. Event, object and action code blocks can be used together.
- When code is run this is known as code being executed.
- Debugging is when we fix code that isn't working how it was designed to.
- Scenes can be made using backgrounds and objects. Backgrounds can be changed as well as objects and that these have attributes (properties) that can be modified.
- A well thought out program should be made from a plan.

Information Technology

- There are specific features and purposes of a spreadsheet, and they can navigate around and enter data.
- Specific features in spreadsheets such as 2Calculate allow user to insert content such as images into a cell. The cells content can be locked or moved using additional features.
- The Speak and Count tools serve a specific purpose in 2Calculate
- Items can be sorted using a range of criteria.
- When sorting items, a logical process should be used.
- An algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective.
- Computer programs need clear instructions, in steps, to follow.
- The instructions written for a computer program are called algorithms.
- Humans can follow algorithms to sort items such as shapes, just as computer programs can.
- Computers can be used as a way of sorting on screen objects.
- Digital content can be presented in many forms.
- Quizzes can be made using programs such as 2Quiz.
- Digital content should be presented using a suitable format
- Digital content in one format can be re-used in other formats to present to audiences

KS1 Cycle A		
Unit	**End points**	**Key skills**
Online safety and exploring (1.1)	• It is important to log in to a site safely and the importance of keeping passwords safe. • Many online sites, including Purple Mash, have an area for their work that is accessible only to the user. • An avatar is a virtual representation of them suitable for use online. • Online platforms, such as Purple Mash, have search functionality which allows users to efficiently find resources and tools. • Different icons in a tools bar carry out different functions. • Many of the tools in sites such as Purple Mash will have a common design theme, and which means familiarity of the functionality of icons across different applications. • It is important to log out when they have finished working as a way of securing personal accounts.	• Give reasons why it is important to keep a password safe and not share it • Explain why passwords display as ****** on the screen. • Save work in their folder. heir own avatar considering why an avatar is better than a photo online • Open the file by double clicking on it. • Locate the search bar and search for a given resource. • Use a variety of tools. • Save their work in their work folder using an appropriate file name. • Recognise the common icons for New, Open, Save, Export, Print and Share. • Identify the drop-down menu containing the Log Out icon.
Effective searching (2.5)	• The Internet is a global network of connected computers around the World. • The World Wide Web refers to the documents and pages someone sees when using a browser. Websites can be found using a browser that contains a search engine. • Search engines use millions of people's digital footprints to help provide more accurate results. • To find results that we want on a search engine, we need to search effectively.	• Answer questions accurately about what the Internet is by completing a quiz. • Explain the difference between the Internet and the World Wide Web • Recognise a web browser. • Recognise a search engine and the key elements they contain. • With guidance, enter a search query in a search engine. • Review results from a search query and results page • Search using words and questions.
Lego builders (1.4)	• To achieve a specific effect when building something, accurate instructions must be followed. • Computer programs need precise instructions to follow, and these are called algorithms. If instructions are vague, outcomes will vary for any given task. • The order of instructions for a task affects the results. • Correcting errors in an algorithm or program is called debugging.	• Recognise whether instructions have been followed correctly • Give clear, precise and concise building instructions for someone to follow. • Test that instructions have been followed by comparing the results of something built with the instructions. • Follow the simple and list of instruction • Explore the possible outcomes of following incorrectly sequenced instructions. • Correct the algorithm sequence by re-ordering it. • Recognise when an algorithm has been debugged.
Spreadsheets (1.8)	• There are specific features and purposes of a spreadsheet, and they can navigate around and enter data. • Specific features in spreadsheets such as 2Calculate allow user to insert content such as images into a cell. The cells content can be locked or moved using additional features. • The Speak and Count tools serve a specific purpose in 2Calculate	• Talk about the function of a spreadsheet and give examples. • Open a blank sheet from the front screen of 2Calculate. • Enter numbers and words into a sheet. • Navigate from cell to cell using the arrows or by clicking in the cell. • Add background colour to cells. • Navigate around the sheet and are aware of what is meant by rows and columns. • Locate the clipart library and add an appropriate image to a single cell. • Select multiple cells to add repeated versions of the same image. • Lock an image to a cell so it can't be moved. • Use the count tool to count how many of the images are in the sheet.
Technology outside school (1.9)	• Technology is science and engineering knowledge put into practical use to solve problems or invent useful tools. • Technology is used within school. • • Technology is used outside of school.	• Recognise technology. • Identify common types of technology such as electronic devices. • Describe the function of common types of technology. • Identify technology within school and describe the function of it • Explain how technology is helpful. • Identify technology outside school and describe the function of it
Grouping and sorting (1.2)	• Items can be sorted using a range of criteria. • When sorting items, a logical process should be used.	• Describe physical items that are needing to be sorted thinking about all the different ways they could be described. • Identify criteria that can be used to sort items into two groups.

	• An algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective. • Computer programs need clear instructions, in steps, to follow. • The instructions written for a computer program are called algorithms. • Humans can follow algorithms to sort items such as shapes, just as computer programs can. • Computers can be used as a way of sorting on screen objects.	• Check that items sorted into two categories are correct using the criteria decided upon. • Look at an algorithm a human has followed to sort shapes and compare it to the algorithm a computer program has used to identify if the shapes are correctly sorted. • Follow a human algorithm to sorting shapes. • Follow a computer program algorithm checking shapes have been sorted correctly.
Creating pictures (2.6)	• Computer drawing programs contain palettes. Palettes are the range of colours or shapes available to the users. • Computer drawing programs may have a choice of painting effects. Painting effects can be combined to help a user make pictures. • The size of an onscreen painting tool brush stroke can be manipulated. • Intensity of colours can be manipulated. • Outline features in drawing programs help a user with the formation of paintings. • Fill tools speed up the process of colouring enclosed areas on a painting. • Pattern tools can be used to create repeating patterns and manipulate how a pattern is arranged. • An eCollage template is available in programs like 2Paint that let's a user create stamps that can be used to add to a picture or build up a picture.	• Explore the range of painting effects on offer in 2Paint. • Observe how the painting effects give different results. • Produce a range of paintings formed from different painting effects. • Identify the outline tool and use it to outline, select, resize and paint • Use the fill tool to place colour into enclosed areas on a drawing. • Locate the pattern template. Draw within the square. • Change the arrangement of the pattern using the arrangement choice options. • Increase or decrease the size of the pattern and how often it is repeated by using the pattern slider. • Select the eCollage template. • Draw within the square. • Combine drawing by using the clipart library.
Coding (1.7)	• Tasks can be given to people and computers by using instructions. Computer programs work by following instructions called code known as algorithms. In both cases, these need to be clear and concise. • There are objects and action code block in the 2Code environment and that you can make a simple program using these. Each single instruction such as 'Object Right' is called a command. • An event is something that makes a block of code run such as a user pressing a key or clicking a screen. Event, object and action code blocks can be used together. • When code is run this is known as code being executed. • Debugging is when we fix code that isn't working how it was designed to. • Scenes can be made using backgrounds and objects. Backgrounds can be changed as well as objects and that these have attributes (properties) that can be modified. • A well thought out program should be made from a plan.	• Give clear instructions that others can follow. • Receive instructions that others can follow. • Draw symbols to represent instructions. • Can recognise an object and action in printed code block form. • Can arrange a printed object block next to a printed action block e.g. 'Tuna left'. • Can recognise the set of code blocks arranged to create actions is known as an algorithm. • Make a command in 2Code by using an object and action together. • Recognise and arrange When Clicked code block as an event block. • Execute code by clicking the Run button • Stop code executing by clicking the Stop button. • Analyse where their code isn't working properly. Arrange blocks into different places. • Can execute code and test if changes have debugged a simple program. • Select a background using the background icon. • Create a program from a plan that includes objects, actions and a When Clicked event. • Execute the program and test if it is doing what is intended in the plan. • Debug the program if the program isn't working how it was planned.
Presenting ideas (2.8)	• Digital content can be presented in many forms. • Quizzes can be made using programs such as 2Quiz. • Digital content should be presented using a suitable format • Digital content in one format can be re-used in other formats to present to audiences	• Compare and discuss differences between a traditional book with an e-book and can talk about the differences. • Recognise digital concept maps and their use for organising ideas. • Explore the front screen of 2Quiz and identify the key areas such as introductory screen, delete, clone, add questions, preview and play quiz. • Add a question type to 2Quiz. • Recognise some of the differences between question types. • Compare, discuss and explain a digital mind map in 2Connect with a digital fact file in 2Publish. • Use font tools, clipart, page settings and images to enhance digital content in the digital publishing file.

Cycle A - Key Vocabulary		
Digital literacy	Information technology	Computer science
Alert, avatar, button, device, file name, filter, home screen, icon, login, log out, menu, notification, password, private, saving, search, textbox, tool bar, typing, browser, digital footprint, internet, network, web page, web site, web address, computer, techonology	Button, calculations, cell, clip art, column, count tool, data, delete, image, lock cell, move cell, row, select, spreadsheet, value, clip art, dilute, fill, horizontal, impressionism, line, palette, parallel, repeating pattern, stamp, style, symmetry, vertical	Algorithm, code, computer, debugging, instructions, machine, program, recipe, sequence, criteria, describe, equal, groups, sort, action, background, click, code, coding, command, debug, event, execute, instruction, object, output, run, scale, scene, software, when clicked

KS1: Cycle B	
NC states that in KS1, 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 • 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	<u>Digital Literacy</u> • It is important to log in to a site safely and the importance of keeping passwords safe. • Many online sites, including Purple Mash, have an area for their work that is accessible only to the user. • An avatar is a virtual representation of them suitable for use online. • Online platforms, such as Purple Mash, have search functionality which allows users to efficiently find resources and tools. • Different icons in a tools bar carry out different functions. • Many of the tools in sites such as Purple Mash will have a common design theme, and which means familiarity of the functionality of icons across different applications. • It is important to log out when they have finished working as a way of securing personal accounts. • Searches can be refined so it is easier to find something. • Work can be shared in a variety of ways. • Email is a way of communicating and know that in this form of communication, as with others, you need to be considerate of the user. • The term digital footprint relates to information that a user puts online, and that this footprint may remain even when we think we have removed the information.
Computer Science • You can move a character (turtle) within specific computer programs around a computer screen such as 2Go by using direction keys. When a direction key is used it is known as a command. • On screen direction keys can have eight possible directions which includes diagonal movements. • Number keys can be combined with direction keys to give a program more accurate instructions and avoid less command clicks. Each square on a grid relates to 1 unit and that when using number keys this should be referenced. • Lists can be made with directional instructions within 2Go and these are known as algorithms. These lists can be changed to improve the instructions which is known as debugging. • In computing, a set of instructions is known as an algorithm. Steps in an algorithm must be followed in order to achieve the intended outcome. • Code can be created that detects when two objects have collided. This code can have an action associated with it. For example, if an alien ship (object) collides with a planet (object) a crash sound is heard (Action). We call this collision detection in 2Code. • Programs follow a sequence of instructions (commands) in order. Timers can be introduced into programs to make parts of the program run after a set time. In 2Code, you can use a timer after command to delay the number of seconds until specific parts of a program are run. • A computer program in 2Code can include objects that are different types. Each object type will have attributes (properties) that can be modified.	Information Technology • There are differences between traditional books and ebooks. • Images can be created within e-book software. • Animations can be included in e-books. • E-book software allows pages to be added and overwriting of work. • Audio such as sound effects, voice recordings and music can be included within e-books. • Backgrounds can be included in e-books to help engage an audience. • Text fonts and sizes can be changed in e-books to suit an intended audience. • Copy and paste features in e-book software can be used to speed up creation of additional pages. • Pictograms created through software or physically are of limited use beyond answering simple questions. • Information can be separated by using yes/no questions. • A binary tree is a simple way of sorting information into two categories. When using a binary tree, users can only ask yes/no questions to find a specific piece of information. • Databases are a computerised system that make it easy to search, select and store information. Databases contain records which have a variety of information about a specific entry. • Users can search a database using simple and more complex search questions. • You can move a character (turtle) within specific computer programs around a computer screen such as 2Go by using direction keys. When a direction key is used it is known as a command. • On screen direction keys can have eight possible directions which includes diagonal movements.

• Events in computer programs cause a block of code to be run. Events could be the result of a user pressing a key or clicking the screen. Event commands in 2Code are used to create blocks of code that are run when an event happens. • There are different event command blocks in 2Code. • Buttons are an object type in 2Code. Buttons use the 'When Clicked' event and will run a piece of code when they are clicked on. • Bugs when referring to computer programs, are bits of code that are stopping a program from working how it was intended. Debugging is the process of looking for any problems in code, fixing the problems and repeatedly testing them.	• Number keys can be combined with direction keys to give a program more accurate instructions and avoid less command clicks. Each square on a grid relates to 1 unit and that when using number keys this should be referenced. • Lists can be made with directional instructions within 2Go and these are known as algorithms. These lists can be changed to improve the instructions which is known as debugging. • Music can be made digitally using programs like 2Sequence. • Sounds can be incorporated into music programs to make a melody. • The speed of a digital musical composition known as tempo can be altered. • The volume of instruments/sounds on a track can be changed when using music programs. • Additional features, such as changing the number of bars and looping a composition, are available in music programs. • Music programs let users incorporate their own sounds into a composition. • Building on previous knowledge spreadsheet files can be opened, saved and edited. • There are keyboard shortcuts for copy, past and cut. • The totalling tool counts all the cells behind the tool. • A spreadsheet will automatically work out how much various items will cost when bought. • Data in a table table can be edited and then use this data to create a block graph.

KS1 Cycle B		
Unit	**End points**	**Key skills**
Online safety and exploring (1.1)	• It is important to log in to a site safely and the importance of keeping passwords safe. • Many online sites, including Purple Mash, have an area for their work that is accessible only to the user. • An avatar is a virtual representation of them suitable for use online. • Online platforms, such as Purple Mash, have search functionality which allows users to efficiently find resources and tools. • Different icons in a tools bar carry out different functions. • Many of the tools in sites such as Purple Mash will have a common design theme, and which means familiarity of the functionality of icons across different applications. • It is important to log out when they have finished working as a way of securing personal accounts.	• Give reasons why it is important to keep a password safe and not share it • Explain why passwords display as ****** on the screen. • Save work in their folder. • Make and edit their own avatar considering why an avatar is better than a photo online • Open the file by double clicking on it. • Locate the search bar and search for a given resource. • Use a variety of tools. • Save their work in their work folder using an appropriate file name. • Recognise the common icons for New, Open, Save, Export, Print and Share. • Identify the drop-down menu containing the Log Out icon.
Animated story books (1.6)	• There are differences between traditional books and ebooks. • Images can be created within e-book software. • Animations can be included in e-books. • E-book software allows pages to be added and overwriting of work. • Audio such as sound effects, voice recordings and music can be included within e-books. • Backgrounds can be included in e-books to help engage an audience. • Text fonts and sizes can be changed in e-books to suit an intended audience. • Copy and paste features in e-book software can be used to speed up creation of additional pages.	• Identify differences and similarities between traditional books and e-books. • Open 2Create a Story and explain what the common tools such as eraser, undo/redo do and the textured pens. • Test each animation effect within the animation tool for a selected image and apply • Overwrite any work that was done previously if needed such as changing an image. • Add additional pages using the add page button, scroll between pages and save changes • Record sound using the microphone and apply to a page. • Insert a sound effect from the gallery and apply to a page or insert music • Select or create a background • Apply any text changes to a page that contains text. • Select copy to perform a copy of a page. • Use the next page button to locate where the copied page should be pasted. • Locate and click the paste button.

Questioning (2.4)	• Pictograms created through software or physically are of limited use beyond answering simple questions. • Information can be separated by using yes/no questions. • A binary tree is a simple way of sorting information into two categories. When using a binary tree, users can only ask yes/no questions to find a specific piece of information. • Databases are a computerised system that make it easy to search, select and store information. Databases contain records which have a variety of information about a specific entry. • Users can search a database using simple and more complex search questions.	• Create a class pictogram using 2Count. • Identify questions we can't and can ask and find the information for on the pictogram. • Create suitable yes/no questions for a collection of physical data such as avatars of children on individual paper records. • Can use yes/no questions to find individual paper records. • Design a binary tree physically using paper to sort simple pieces of information such as animals or children. • Identify the records which make up a database. • Identify fields as pieces of information collected for a record. • Reference given questions to find specific records that meet a search query by: • Locating the find tool. • Using the drop-down lists for record fields in the search tool. • Combine more than one identifier such as 'has glasses' and 'brown hair'.
Maze explorers (1.5)	• You can move a character (turtle) within specific computer programs around a computer screen such as 2Go by using direction keys. When a direction key is used it is known as a command. • On screen direction keys can have eight possible directions which includes diagonal movements. • Number keys can be combined with direction keys to give a program more accurate instructions and avoid less command clicks. Each square on a grid relates to 1 unit and that when using number keys this should be referenced. • Lists can be made with directional instructions within 2Go and these are known as algorithms. These lists can be changed to improve the instructions which is known as debugging.	• Open 2Go and be familiar with its environment. • Use the direction keys to make a character (turtle) on the screen move in different directions and experiment with moving the character • Make use of diagonal key commands when moving a character to help move the character to a desired location with the least number of commands. • In 2Go use the direction keys combined with number keys to get an object to a specific place on a screen. • Reference an onscreen grid with number keys when creating commands. • Identify where a character needs to go and formulate instructions • Drag instructions into the algorithm box. • Run the instructions and test they achieve the correct result. • Debug by modifying the instructions so that the character moves to the correct location.
Making music (2.7)	• Music can be made digitally using programs like 2Sequence. • Sounds can be incorporated into music programs to make a melody. • The speed of a digital musical composition known as tempo can be altered. • The volume of instruments/sounds on a track can be changed when using music programs. • Additional features, such as changing the number of bars and looping a composition, are available in music programs. • Music programs let users incorporate their own sounds into a composition.	• Observe what happens on the screen when composition is playing • Explore the sounds and instruments category. • Drag sounds into the playable area. • Play and experiment with the organisation of sounds on each track. • Locate the beats per minute slider and experiment with changing the slider's position. • Listen in play mode to how changing the position of the slider affects a composition. • Locate each bar in a composition. • Locate the volume sliders for each bar and adjust. • Play the composition and test the effect of altering the volume of individual tracks. • Locate the bar selector and change the number of bars for a composition • Experiment with the looping feature and identify how this affects a composition. • Use the record button to incorporate own sound from a microphone.
Pictograms (1.3)	• Data is a collection of information, used to help answer questions. • A pictogram is a visual way of representing data. • We can look at data represented in pictograms and ask questions as a way of interrogating data. • • Programs such as 2Count enable people to create pictograms on a computer. This has the advantage of being able to easily modify data and share it with lots of people.	• Collect data on a common theme such as how children travel to school. • When collecting data, recognise that there are efficient ways of collecting data such as writing it down or entering it into a computer program. • Represent data collected as a class using physically created pictograms. • Interpret and interrogate a pictogram by comparing amounts of different categories. • Look at a pictogram and compare each category. • Identify the totals in each category. • Change an image representing a piece of data. • Create a suitable title for a pictogram and save it
Online safety (2.2)	• Searches can be refined so it is easier to find something.	• Locate the search bar and type in simple terms.

	• Work can be shared in a variety of ways. • Email is a way of communicating and know that in this form of communication, as with others, you need to be considerate of the user. • The term digital footprint relates to information that a user puts online, and that this footprint may remain even when we think we have removed the information.	• Look at the ways to narrow down the search to a specific year group or subject. • Explain why a search on the Internet may not be a safe search. • Tell a trusted adult if they search for something the results are inappropriate or upsetting. • Define what is meant by sharing work. • Explain what email is and advantages of it over other forms of communication. • Talk about what a Digital Footprint is. • Explain what kind of information may be left on a digital footprint and how this could be used to identify them.
Spreadsheets (2.3)	• Building on previous knowledge spreadsheet files can be opened, saved and edited. • There are keyboard shortcuts for copy, past and cut. • The totalling tool counts all the cells behind the tool. • A spreadsheet will automatically work out how much various items will cost when bought. • Data in a table table can be edited and then use this data to create a block graph.	• Explain what a row and column is in spreadsheets. • Open and save a sheet and give it an appropriate name. • Add a given image to a sheet or draw their own. • Allocate a value to an image and then recap the use of the count tool. • Make a simple spreadsheet counting machine. • Use shortcuts • Know what is meant by totalling numbers in a row or column and use tool • Practically apply the knowledge to make a magic number square
Coding (2.1)	• In computing, a set of instructions is known as an algorithm. Steps in an algorithm must be followed in order to achieve the intended outcome. • Code can be created that detects when two objects have collided. This code can have an action associated with it. For example, if an alien ship (object) collides with a planet (object) a crash sound is heard (Action). We call this collision detection in 2Code. • Programs follow a sequence of instructions (commands) in order. Timers can be introduced into programs to make parts of the program run after a set time. In 2Code, you can use a timer after command to delay the number of seconds until specific parts of a program are run. • A computer program in 2Code can include objects that are different types. Each object type will have attributes (properties) that can be modified. • Events in computer programs cause a block of code to be run. Events could be the result of a user pressing a key or clicking the screen. Event commands in 2Code are used to create blocks of code that are run when an event happens. • There are different event command blocks in 2Code. • Buttons are an object type in 2Code. Buttons use the 'When Clicked' event and will run a piece of code when they are clicked on. • Bugs when referring to computer programs, are bits of code that are stopping a program from working how it was intended. Debugging is the process of looking for any problems in code, fixing the problems and repeatedly testing them.	• Follow a written algorithm on a plan and interpret it. • Predict what will happen if the planned algorithm was converted to code. • Use the correct code within 2Code to implement the algorithm which includes event 'when clicked', objects and actions. • Recognise the collision detection block as part of the event category blocks. • Drag a collision detection block into a program and assign objects and events • Recognise the timer block as part of the control category blocks. • Drag a timer command block into a program. Use the time after command and set a number of seconds. • Observe placing two separate timer commands in a program and identify that they will run independently of one another if a timer isn't nested inside another timer. • Place up to four different objects, change the size. • Recognise the event command blocks – When Key Event, When Swiped Event, When Clicked Event and Collision Detection. • Run code and test that when the event occurs e.g. 'click up arrow', all four objects move. • Enter design mode and locate the button object under 'Form/Text' tab. • Insert a button into design mode scene that contains other object types. • Drag the button command object when in code view into a program and notice that it contains the When Clicked Event. • Nest code within the When Clicked Button that makes an object carry out an action when the button is clicked. • Recognise what a program in 2Code is supposed to do. Run the code and check that the program is operating correctly.

KS1 Cycle B - Key Vocabulary		
Digital literacy	Information technology	Computer science
Alert, avatar, button, device, file name, filter, home screen, icon, login, log out, menu, notification, password, private, saving, search, textbox, tool bar, typing, attachment, email, personal information, private information, protection, secure, sharing	Animation, background, category, copy, drop down menu, eraser, edit, features, sound, overwrite, paint tools, paste, redo, save, text, undo, avatar, data, field, information, pictogram, question, record, search, sort, bars, beat, compose, note, tune, repeat, sound effect, tempo, volume, speed, collect data, compare, data, pictogram, title, total, visual, addition, block	Algorithm, challenge, command, delete, direction, instruction, left, right, route, undo, unit

	graph, cell, coins, column, copy, count, cut, data, drag, equals, label, paste, price, row, tool	

LKS2: Cycle A

NC states that in KS2, 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
- 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

Digital Literacy

- Passwords are private and should never be shared.
- Blogs can help us to communicate our thoughts and ideas.
- Not everything online is factually correct, and some websites can be referred to as spoof websites.
- PEGI / BBFC ratings exist to keep young people safe and steps can be taken should students see inappropriate content.
- Safe protocols can be developed to protect people when using email.
- Everything put online leaves a trail known as a digital footprint.
- There are risks and benefits of installing software including apps.
- Copying the work of others and presenting it as their own is called 'plagiarism'.
- There are positive and negative influences of technology on health and the environment.

Computer Science

- Flowcharts are a type of diagram that use specifically shaped labelled boxes and arrows to represent an algorithm as a diagram.
- Timers are used in coding to help control when a block of commands are run. Timer commands can be run after a timed delay or at regular intervals. In 2Code there are two timer options, timer every or timer after. These can be altered by changing the number of seconds/quarter seconds.
- Repeat is a control block and blocks of commands can be set to repeat a specified number of times using the repeat control block.
- Testing, debugging and fixing are an important part of the process of making computer programs. Understanding what nesting is and the effect it has on a program can help when trying to debug a program.
- 2Logo has its own language with specific instructions.
- Representations of shapes, letters and flowers can be created in 2Logo using the repeat command.
- The repeat command is a more efficient way to code in 2Logo.
- It is important to test and debug code in 2Logo as with other coding platforms to ensure it runs effectively.

Information Technology

- There are some main elements to music including pulse, rhythm, tempo, pitch and texture.
- A piece of music can be altered by changing the rhythm and tempo.
- A melodic phrase can be created using music software.
- An electronic piece of music contains the key musical features.
- Computer simulations are programs that model real-life situations. They allow people to test various scenarios out that might be too expensive or dangerous to do in real life.
- Computer simulations can be realistic and also unrealistic depending on how well thought out they are.
- It is important to analyse and evaluate simulations to assess their usefulness and overall realism.
- Simple simulations can be created using familiar software such as 2Create a Story.
- Information can be located on a search engine page.
- There are different skills needed to research effectively.
- Web Pages need to be evaluated to see if the information contained is true and reliable.
- A database is a collection of data organised in a way that it can be searched, and information found easily.
- Objects can be sorted using yes/no questions and relate this to how computer binary databases work.
- Branching databases can be created using programs such as 2Question.
- It is important to test and debug if needed when creating branching databases so that they work as intended.
- Graphs can be generated from data within a sheet. If data is changed on the sheet, then the graph automatically updates to recognise these amendments. .
- The more than, less than and equals tools serve a purpose to define a number.
- Cells all have their own individual address. They are referenced using letters and numbers.

LKS2 Cycle A		
Unit	**End points**	**Key skills**
Online safety (3.2)	• Passwords are private and should never be shared. • Blogs can help us to communicate our thoughts and ideas. • Not everything online is factually correct, and some websites can be referred to as spoof websites. • PEGI / BBFC ratings exist to keep young people safe and steps can be taken should students see inappropriate content.	• Take steps to keep a password safe. • Set a password featuring a mix of letters, numbers and special characters. • Set different passwords for different sites. • Ascertain which information in a website maybe fake, • Look for alternative ways to check the validity of information. • Consider why spoof websites exist. • Consider what content may be deemed inappropriate. • Check PEGI / BBFC ratings to see if chosen media are suitable. • Talk to a trusted adult about what they have seen or heard if inappropriate content or contact makes them feel uncomfortable.
Making music (4.9)	• There are some main elements to music including pulse, rhythm, tempo, pitch and texture. • A piece of music can be altered by changing the rhythm and tempo. • A melodic phrase can be created using music software. • • An electronic piece of music contains the key musical features.	• Define what the significant elements to music are. • Listen to some ready-made musical examples and identify some key elements. • Create their own music using the program Busy Beats focussing on rhythm and tempo. • Talk about and therefore show an understanding of melody. • Create a simple melodic pattern. • Create their own music using the program Busy Beats focussing on melody and pitch. • Create a piece of electronic music on busy beats combining their knowledge of pitch, rhythm and melody.
Coding (3.1)	• Flowcharts are a type of diagram that use specifically shaped labelled boxes and arrows to represent an algorithm as a diagram. • Timers are used in coding to help control when a block of commands are run. Timer commands can be run after a timed delay or at regular intervals. In 2Code there are two timer options, timer every or timer after. These can be altered by changing the number of seconds/quarter seconds. • Repeat is a control block and blocks of commands can be set to repeat a specified number of times using the repeat control block. • Testing, debugging and fixing are an important part of the process of making computer programs. Understanding what nesting is and the effect it has on a program can help when trying to debug a program.	• Identify the point the flowchart starts, any points on it that represent an input or output. • Identify any delays such as a timer and identify any processes. • Follow the flow of the chart and interpret what it is representing. • Create a representation of the flowchart by using 2Code. • Begin to distinguish the difference between timer every command from the timer after command. • Identify the repeat command as part of the control blocks group. • Insert a repeat command into the coding area and set it a specified number of times to repeat. • Add a block of commands to a repeat command. • Execute the code and check that it has operated as intended. • Recognise examples of nesting in a 2Code program. Compare two example programs that both have nesting and are trying to achieve the same outcome. • Test what happens when changing how a program is nested. Examples could include moving a timer so that it is nested within a timer that is currently nested within a when clicked command and comparing how it executes. • Use the knowledge of nesting to help debug a program that isn't working as intended.
Simulations (3.7)	• Computer simulations are programs that model real-life situations. They allow people to test various scenarios out that might be too expensive or dangerous to do in real life. • Computer simulations can be realistic and also unrealistic depending on how well thought out they are. • It is important to analyse and evaluate simulations to assess their usefulness and overall realism. • Simple simulations can be created using familiar software such as 2Create a Story.	• Explain what computer simulations are and why they are useful. • Provide examples of computer simulations. • Give positives and negatives for simulations. • Find solutions to problems encountered when exploring a simulation. • Explore a simulation in 2Simulate. • Evaluate a simulation to determine its usefulness for purpose. • Plan and create a simple simulation • • Consider the relationships and rules in which the simulation uses.
Effective search (4.7)	• Information can be located on a search engine page. • There are different skills needed to research effectively.	• Load up a search engine onto their device • Research the different types of information one can get from a search engine.

	• Web Pages need to be evaluated to see if the information contained is true and reliable.	• Correctly interpret the information outputted. • Enter basic search enquiries and more advanced effective enquiries • Answer a quiz using effective search. • Analyse the contents of a web page for clues about the reliability of information. • Appreciate that the search engine will give results tailored to the interests of the searcher.
Online safety (4.2)	• Safe protocols can be developed to protect people when using email. • Everything put online leaves a trail known as a digital footprint. • There are risks and benefits of installing software including apps. • Copying the work of others and presenting it as their own is called 'plagiarism'. • There are positive and negative influences of technology on health and the environment.	• Identify emails that may be phishing emails and another name for these emails is spam emails. • Ignore these emails and not reply to them. • Understand that spam emails may be too good to be true or offer prizes to the recipient. • Use the padlock on the web address bar which indicates the site will be safe. • Recognise that everything they post online remains there. • Use the terminology Digital Footprint for this personal digital content. • Be aware that a digital footprint can be positive or negative • Download apps and programs in the safest possible way but that even reputable stores can have invasive software on there. • Define the word malware. computer virus and plagiarism
Logo (4.5)	• 2Logo has its own language with specific instructions. • Representations of shapes, letters and flowers can be created in 2Logo using the repeat command. • The repeat command is a more efficient way to code in 2Logo. • It is important to test and debug code in 2Logo as with other coding platforms to ensure it runs effectively.	• Input directional instructions • Input the more abstract non directional code such as PU, PD and CS. • Follow simple instructions to create simple shapes • Create their own shapes by typing all the instructions and then using the repeat • Use the repeat command to replicate the same outcomes as repeated typing of commands. • Look at the screen and isolate errors in the output. • Look at the code and identify why the errors have occurred.
Branching databases (3.6)	• A database is a collection of data organised in a way that it can be searched, and information found easily. • Objects can be sorted using yes/no questions and relate this to how computer binary databases work. • Branching databases can be created using programs such as 2Question. • It is important to test and debug if needed when creating branching databases so that they work as intended.	• Provide examples of common uses of a database • Explain binary databases are also known as branching databases due to the branch like structure. • Identify questions that can be used to sort physical objects • Sort physical objects using appropriate yes/no questions. • Develop questioning to include more/less. • Insert question texts and choice button texts for each card. • Use the final answer card option for end of a branch. • Plan a branching database. • Identify errors, fix and test them again
Spreadsheets (3.3)	• Graphs can be generated from data within a sheet. If data is changed on the sheet, then the graph automatically updates to recognise these amendments. . • The more than, less than and equals tools serve a purpose to define a number. • Cells all have their own individual address. They are referenced using letters and numbers.	• Recall the different range of graphs and charts they have come across in other subjects as well as computing including pie and bar. • Enter data into a table format in a spreadsheet. • Select all the data in the table, select the chart tool. • Give the table a title and label the chart axis. • Edit data in a table and see how the chart changes automatically. • Link their knowledge of <,> and = to spreadsheets • Create a simple multiplication formula. • Switch to advanced or formula mode in a spreadsheet program.

LKS2 Cycle A - Key Vocabulary		
Digital literacy	Information technology	Computer science
Appropriate, blog, inappropriate, internet, password, personal information, permission, reliable source, reputable source, spoof, verify, vlog, website, attachment, citation, collaborative, cookies, copyright, data analysis, malware, phishing, plagiarism, ransomware, report, software, spam, virus, watermark	BPM, dynamics, harmonious, melody, pitch, pulse, rhythm, tempo, texture, synth, advantages, analysis, decision, disadvantages, evaluation, modelling, realistic, simulation, solution, unrealistic, balanced view, easter eggs, internet, key words, reliability, search engine, binary tree, data, databases, debugging	Action, alert, algorithm, background, bug, button, click, code, command, debug, degrees, event, flowchart, implement, input, interval, nest, predict, object, repeat, run, scene, sequence, test, timer, grid, logo, pen down, pen up, procedure, repeat, run speed,

LKS2: Cycle B end points

NC states that in KS2, 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
- 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

Digital Literacy

- Passwords are private and should never be shared.
- Blogs can help us to communicate our thoughts and ideas.
- Not everything online is factually correct, and some websites can be referred to as spoof websites.
- PEGI / BBFC ratings exist to keep young people safe and steps can be taken should students see inappropriate content.
- There are different methods of communication and they each have strengths and weaknesses.
- Emails are electronic versions of letters, and they can be sent and received almost instantly to anyone with an email address.
- It's important to use email systems safely and that there are things people can do to try to keep themselves safe.
- Pictures, documents and other file types can be attached to emails.
- Address books can be made in email clients which store known contacts' email addresses. When sending an email we can use an address and send to multiple people.
- Safe protocols can be developed to protect people when using email.
- Everything put online leaves a trail known as a digital footprint.
- There are risks and benefits of installing software including apps.
- Copying the work of others and presenting it as their own is called 'plagiarism'.
- There are positive and negative influences of technology on health and the environment.

Computer Science

- There are objects in 2Code and that there are different types and these have attributes (properties) that can be changed.
- Backgrounds can be changed and manipulated.
- Selection is a term used in computer programming. That it is a decision command that will be run dependent on whether a condition is met.
- If statements are used to create selection in 2Code and that they are bits of code that will run only if a condition is true.
- A micro:bit is a tiny computer which needs instructions in code to make it work.
- A micro:bit can produce outputs.
- A micro:bit can receive inputs.
- Code from the coding environment can be transferred onto a micro:bit.
- The order (sequence) of instructions is important when coding.

Information Technology

- It is possible to input numbers into a spreadsheet in different formats including the use of a decimal point.
- Formulas can be added to a spreadsheet to speed up calculations when data is changed.
- There is specific functionality of some of the tools within 2Calculate.
- A spreadsheet can create a range of graphs and charts and these can be interrogated. .
- Spreadsheets can be used to model a real-life situation and improve the efficiency of day-to-day tasks.
- A value can be added to images in 2Calculate to make a resource to teach place value.
- Presentation software is a way of creating and displaying information to an audience that is clear and engaging.
- Simple presentations can be made quickly by using features such as textboxes, word art and images.
- Presentations can include additional slides, video and audio.
- Designs of slides can be changed.
- Animations can be incorporated within a Microsoft PowerPoint presentation.
- Transitions can be applied between slides.
- Timings can be added to transitions and animations.
- Some animations are created by hand and others with the help of technology.
- Onion skinning is a term used in animation and can make the animation process more efficient.
- Sound can be added to animation to enhance the finished product.

	• The term stop frame animation refers to animation where the stopping and starting of a camera gives an object the impression of movement. • Artificial intelligence is having an impact already in day-today life. • Artificial intelligence can assist and benefit us in our everyday life. • The potential of artificial intelligence is limitless. • Artificial intelligence is already being used to create music and art.

LKS2 Cycle B		
Unit	**End points**	**Key skills**
Online safety (3.2)	• Passwords are private and should never be shared. • Blogs can help us to communicate our thoughts and ideas. • Not everything online is factually correct, and some websites can be referred to as spoof websites. • PEGI / BBFC ratings exist to keep young people safe and steps can be taken should students see inappropriate content.	• Take steps to keep a password safe. • Set a password featuring a mix of letters, numbers and special characters. • Ascertain which information in a website maybe fake, • Look for alternative ways to check the validity of information. • Consider what content may be deemed inappropriate. • Check PEGI / BBFC ratings to see if chosen media are suitable. • Talk to a trusted adult about what they have seen or heard if inappropriate content or contact makes them feel uncomfortable.
Spreadsheets (4.3)	• It is possible to input numbers into a spreadsheet in different formats including the use of a decimal point. • Formulas can be added to a spreadsheet to speed up calculations when data is changed. • There is specific functionality of some of the tools within 2Calculate. • A spreadsheet can create a range of graphs and charts and these can be interrogated. . • Spreadsheets can be used to model a real-life situation and improve the efficiency of day-to-day tasks. • A value can be added to images in 2Calculate to make a resource to teach place value.	• Select the formatting option they want to use and enter the appropriate data • Understand what a formula is in a spreadsheet. • Start using the more advanced features of the wizard/ • Enter appropriate data in tabular format in a spreadsheet that can be used to form graphs. • Locate and click on the graphing button. • Create a line graph from the selection on offer and label the graph correctly. • Interpret the data contained within the graph including estimating values between given data sets. • Analyse the information in a budget setting spreadsheet and create their own budget template • Use the TOTAL functionality and make amendments to a budget spreadsheet
Coding (4.1)	• There are objects in 2Code and that there are different types and these have attributes (properties) that can be changed. • Backgrounds can be changed and manipulated. • Selection is a term used in computer programming. That it is a decision command that will be run dependent on whether a condition is met. • If statements are used to create selection in 2Code and that they are bits of code that will run only if a condition is true. • Coordinates are used in computer programming to determine the position of a point, shape or object and that these change according to where they are positioned on the screen. • Repeat until is a control block and that blocks of code will repeat until a condition is met. • If/else statements are a conditional command that tests a statement. If a condition is true, commands inside the if block will run. If a condition is false, commands inside the else block will run. • Variables are a virtual container (A place in computer memory) that contain a value that can change. The value is normally in the format of a number or letter. Variables are used in programming to keep track of things that can change such as the score in a computer game. There are • 3 main types that be created using 2Code.	• Enter design mode and locate the game elements tab. • Click on an object and identify the attributes (properties) and change attributes such as image, name, allow off screen, angle and movement. • Drag and position objects around the design mode screen. • Recognise flowcharts and use a flowchart to help them visualise a simple program. Interpret flowcharts depicting selection and explain what happens if a condition is or isn't met within it. • Identify if Statement control blocks. • Click on object(s) to expose attributes. • Identify where coordinates x and y can be changed. • Identify repeat until within the control blocks of block code view and use • Successfully create code within 'Repeat until' block and make it run until a condition is met. • Insert the if/else command within a program. • Create an if statement using blocks of code. • Create an else statement using blocks of code. • Identify the create variable command from the variables blocks within code view. • Drag a create variable block into coding area. • Set a variable type to number and name a variable. • Set the value of a variable and execute code with a variable within it. • Use the variable watch to monitor how a variable changes as the program executes code.

Emails (3.5)	• There are different methods of communication and they each have strengths and weaknesses. • Emails are electronic versions of letters, and they can be sent and received almost instantly to anyone with an email address. • It's important to use email systems safely and that there are things people can do to try to keep themselves safe. • Pictures, documents and other file types can be attached to emails. • Address books can be made in email clients which store known contacts' email addresses. When sending an email we can use an address and send to multiple people.	• Present different methods of communication on mind mapping tool and explain the advantages and disadvantages of each • Identify key areas and functions: Inbox, alerts, reply, formatting tools. • Open an email and reply to it and compose an email • Recognise a concerning email/contact and report a concern to a teacher verbally as well as the report to teacher feature in 2Email. • Discuss the disadvantages of email in regard to safety and identify what a trusted contact is. • Select files to attach to an email and send. • Be cautious of email received that have an attachment. • Send an email to multiple contacts using the address book. Use carbon copy correctly and explain scenarios of when this might be useful. • Use blind carbon copy and discuss scenarios of when this might be useful.
Presenting (3.9)	• Presentation software is a way of creating and displaying information to an audience that is clear and engaging. • Simple presentations can be made quickly by using features such as textboxes, word art and images. • Presentations can include additional slides, video and audio. • Designs of slides can be changed. • Animations can be incorporated within a Microsoft PowerPoint presentation. • Transitions can be applied between slides. • Timings can be added to transitions and animations.	• create a power point and identify some of the basic layout features of Microsoft PowerPoint. • Use the audio and video feature to record from an external microphone and insert on a slide. • Resize and manipulate media content appropriately on a slide. • Explore the different design templates available. • Preview designs and apply one of choice to a presentation. • Apply an animation to an image. • Select a slide that a transition is to be applied to. • Select and apply a suitable transition. • Select when the animation is to initiate and apply a duration to a slide transition.
Microbits (3.10)	• A micro:bit is a tiny computer which needs instructions in code to make it work. • A micro:bit can produce outputs. • A micro:bit can receive inputs. • Code from the coding environment can be transferred onto a micro:bit. • The order (sequence) of instructions is important when coding.	• Recognise and locate key hardware components on the micro:bit such as its display, speaker and accelerometer. • Identify and use code blocks that produce outputs. • Use display text, show LEDs and play music outputs in program to meet specific intentions. • Code a micro:bit to make different outputs happen depending on different inputs. • Use event commands: when micro:bit button, when gesture in programs to meet specific intentions. • Make a program that requires inputs (event commands as above) that produce an output. • Use the simulator within the Freecode micro:bit environment to test code before transferring to micro:bit.
Online safety (4.2)	• Safe protocols can be developed to protect people when using email. • Everything put online leaves a trail known as a digital footprint. • There are risks and benefits of installing software including apps. • Copying the work of others and presenting it as their own is called 'plagiarism'. • There are positive and negative influences of technology on health and the environment.	• Identify emails that may be phishing emails and another name for these emails is spam emails. • Ignore these emails and not reply to them. • Understand that spam emails may be too good to be true or offer prizes to the recipient. • Use the padlock on the web address bar which indicates the site will be safe. • Recognise that everything they post online remains there. • Use the terminology Digital Footprint for this personal digital content. • Be aware that a digital footprint can be positive or negative • Download apps and programs in the safest possible way but that even reputable stores can have invasive software on there. • Define the word malware. computer virus and plagiarism
Animation (4.6)	• Some animations are created by hand and others with the help of technology.	• Make a simple flick animation book. • Create a simple moving object animation on Purple Mash using 2Animate.

	• Onion skinning is a term used in animation and can make the animation process more efficient. • Sound can be added to animation to enhance the finished product. • The term stop frame animation refers to animation where the stopping and starting of a camera gives an object the impression of movement.	• Appreciate the purpose of onion skinning and use on 2simple • Add sounds and background to their animations to improve them. • Talk about stop frame animation they have watched, and the techniques used. • Create a simple stop frame animation. • Present their animation to an audience.
Artificial intelligence (4.10)	• Artificial intelligence is having an impact already in day-today life. • Artificial intelligence can assist and benefit us in our everyday life. • The potential of artificial intelligence is limitless. • Artificial intelligence is already being used to create music and art.	• Give three examples of artificial intelligence in their lives and talk and write about real life applications of it • Critically think about the future of artificial intelligence. • Express their ideas in written and illustrated form about the future of artificial intelligence. • Consider if there are negatives associated with artificial intelligence. • Decide if art and music are created by humans or artificial intelligence. • Use various artificial intelligence programs to create music and art to meet a description.

LKS2 Cycle B - Key Vocabulary		
Digital literacy	Information technology	Computer science
Appropriate, blog, inappropriate, internet, password, personal information, permission, reliable source, reputable source, spoof, verify, vlog, website, attachment, BCC, CC, compose, email, inbox, link, node, password, personal information, trusted contact	Average, budget, calculations, chart, column, data, equals, format, formula, line graph, resize, row, spinner tool, timer, totals, animation, audio, border properties, duration, editing, fill colour, layer, media, presentation, preview, review, slide, slideshow, textbox, theme, timing, transition, word art, BPM, dynamics, harmonious, melody, pitch, pulse, rhythm, tempo, texture, synth	Action, alert, algorithm, background, button, code block, command, debug, design, event, execute, flowchart, input, nest, object, prompt, implement, predict, repeat, run, properties, selection, sequence, variable, accelerometer, animation, data, gesture, hardware, image, LED, output, program, repeat, software

Year 5	
NC states that in KS2, 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 • 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	<u>Digital Literacy</u> • The SMART rules are designed to keep children safe online. • Passwords need to be kept secure. • Care needs to be given when sharing content online. • Sources should be referenced in work. • Different forms of communication are best used for specific purposes.

Computer science	Information Technology
• Code can be simplified to complete the same process with less lines of code. Simplified code runs faster and uses less processing memory, it is said to be more efficient. Computer generated variables in 2Code are tags given to objects and these can be used to control object types meaning less lines of code are needed. • A simulation is a model that represents a real or imaginary situation. Plans of an algorithm that represents a real or imaginary situation can be created and then used to program a simulation in 2Code. • The timer every command can be used to make code repeat forever. • Decomposition is a method of breaking down a task into manageable components. This makes coding easier as the components can then be coded separately and then brought back together in the program. • Abstraction is a way of de-cluttering and removing unnecessary details to get a program functioning. • A function is a block or sequence of code that can be accessed when it is needed. This means code doesn't have to be rewritten every time it is needed. Instead, the function can be called each time it is needed. • Strings are text or a combination of text characters and numbers within programs. An example could be a program that has a string type variable that is used to keep a player informed of their progress in a game. • Concatenation is the name given to the action of linking things together in a series. For example, in programs we might want to link words together to form random phrases that are seen by a user of a program. • External devices can be used to control a coded program. • An external device can be used as a game controller. • Text can be outputted to an external device. • An external device can be used to model real life situations. • A program can be written for the external device to meet a specific design brief. • It is important to plan out a game before commencing on making it. • A game design program has specific functions for the designer to use. • A finished game must be playable and possible for the player to complete. • Evaluation is important so a game can be improved and made more playable and exciting.	• There is a need for visual representation when generating and discussing complex ideas. This can be represented in the form of a concept map. • A computer program can be used to create a concept map. • A concept map can be used to retell information and stories. • Collaborative concept maps allow many users to contribute to the same map and therefore quickly and easily share ideas. • A formula can be written in a sheet to convert units of length and distance. • A spreadsheet tool can be used to investigate if a hypothesis is true. • A spreadsheet can be used to model a real-life problem, in this case the area and perimeter of shapes. • A spreadsheet can be used to convert days into weeks or years and vice versa. • Spreadsheets can be created to support the organisation of real-life events such as a school cake sale. • A database can be used to search for information. • Users can contribute to a collaborative database. • Databases can be created to cover a range of topics or themes. . • 3D modelling can be done via a computer program. • Moving points changes the appearance of a 3D model. • A 3D design program can be used to meet a design brief. • Models need refining before they are printed out using a standard printer or 3D printer.

Year 5		
Unit	**End points**	**Key skills**
Online safety (5.2)	• The SMART rules are designed to keep children safe online. • Passwords need to be kept secure. • Care needs to be given when sharing content online. • Sources should be referenced in work. • Different forms of communication are best used for specific purposes.	• Recover forgotten emails normally using email. • Create a good password involving letters, numbers and characters. • Consider what information should be shared online. • Use an avatar as a virtual representation of themselves rather than a photograph. • Define what is mean by plagiarism. • Reference sources that they may have used in their work. • Look at the advantages of online and face to face communication. • Think about when online communication has made them feel uncomfortable.
Concept maps (5.7)	• There is a need for visual representation when generating and discussing complex ideas. This can be represented in the form of a concept map. • A computer program can be used to create a concept map. • A concept map can be used to retell information and stories. • Collaborative concept maps allow many users to contribute to the same map and therefore quickly and easily share ideas.	• Begin to think about concept maps as a tool for organising and representing knowledge in a web. • Set up a concept map using a blank template. • Add and connect nodes to the map understanding they represent concepts or ideas. • Create a concept map linked to a specific topic. • Evaluate what worked well in the concept map and how it could be improved.

Coding (5.1)	• Code can be simplified to complete the same process with less lines of code. Simplified code runs faster and uses less processing memory, it is said to be more efficient. Computer generated variables in 2Code are tags given to objects and these can be used to control object types meaning less lines of code are needed. • A simulation is a model that represents a real or imaginary situation. Plans of an algorithm that represents a real or imaginary situation can be created and then used to program a simulation in 2Code. • The timer every command can be used to make code repeat forever. • Decomposition is a method of breaking down a task into manageable components. This makes coding easier as the components can then be coded separately and then brought back together in the program. • Abstraction is a way of de-cluttering and removing unnecessary details to get a program functioning. • A function is a block or sequence of code that can be accessed when it is needed. This means code doesn't have to be rewritten every time it is needed. Instead, the function can be called each time it is needed. • Strings are text or a combination of text characters and numbers within programs. An example could be a program that has a string type variable that is used to keep a player informed of their progress in a game. • Concatenation is the name given to the action of linking things together in a series. For example, in programs we might want to link words together to form random phrases that are seen by a user of a program.	• Identify that common tags known as computer generated variables can used in the program to control all the objects. • Create a simplified code structure that functions exactly the same as the original code by using the common tags objects share. • Convert the algorithm plan into a program within 2Code. • Test the program and how it compares to real-life and make adaptations to the program to consider variations in real-life situations. • Use planning to create a program. • Recognise what abstraction is and why it is important. When planning a program, use abstraction to remove any unnecessary complications. • Realise in examples such as creating a traffic light sequence in 2Code, we can follow a process of abstraction to remove unnecessary details that aren't crucial to getting the program to function. For example, not including moving traffic, pavements or pedestrians. • Recognise the create function command as part of the create and change variable group of blocks. • Insert a create function command into a program and name it. • Include code to a newly created function such as setting the position of an object. • Insert the call function command and assign the function created. • Create a string variable and initialise it (give it a value). Create code that changes the value of the string such as setting the string variable to a random word every 1 second. • Demonstrate concatenation in other programs created such as linking a variable (score) with text (well done) for a game.
Spreadsheets (5.3)	• A formula can be written in a sheet to convert units of length and distance. • A spreadsheet tool can be used to investigate if a hypothesis is true. • A spreadsheet can be used to model a real-life problem, in this case the area and perimeter of shapes. • A spreadsheet can be used to convert days into weeks or years and vice versa. • Spreadsheets can be created to support the organisation of real-life events such as a school cake sale.	• Know the short cuts for copy, paste and cut and use these • Write a simple formula for converting cm to m and m to cm using cell references, • Define what is meant by a variable. • Make the sheet bigger by adding in more cells. • Answer the hypothesis that the letter 'e' is the most popular letter in English. • Solve another problem using the How Many tool. • Explain what is meant by 'modelling'. Open up the formula toolbar. • Create a simple formula to work out area and perimeter. • Input information into a table and use the formulas to solve a problem. • Create a simple table layout. • Write formulas to convert units of time. • Use the totalling tool. • Explain what is meant by the terms budget and profit and create a spreadsheet
Using external devices (5.9)	• External devices can be used to control a coded program. • An external device can be used as a game controller. • Text can be outputted to an external device. • An external device can be used to model real life situations. • A program can be written for the external device to meet a specific design brief.	• Write if something is an output or an input. • Start coding using the new external device code blocks. • Use the QR code to connect the external device or emulator. • Play their simple code. • Talk about the features of a game controller. • Debug their code if it isn't working. • Write a program to code text to the device. • Know the external device can use sensors and these can be used in the code. • Find blocks relating to sensors in the external device namely shake, tilt and sound detected. • Plan and then code their program and then share the program with others. • Evaluate the program and make improvements where needed.
Game creator (5.5)	• It is important to plan out a game before commencing on making it. • A game design program has specific functions for the designer to use.	• Evaluate other games against criteria prior to beginning the creative process highlighting what works well and what could be improved. .

	• A finished game must be playable and possible for the player to complete. • Evaluation is important so a game can be improved and made more playable and exciting.	• Use a design document to set the scene of the game after research what would make appropriate textures for aspects of the game and save these to the design document. • Use the key functions of the game creator tool. • Design and add appropriate graphical elements to their game including floor, walls and ceiling. • Add in game music to support the game theme. • Design the quest item and add in movement, sound effects and actions. • Write clear instructions that set a scene and provide gameplay instructions for the user. • Share the game online so other people can play it. • Evaluate games made by their peers using given criteria. Read evaluation of their game from other. • Make appropriate improvements to their game.
Databases (5.4)	• A database can be used to search for information. • Users can contribute to a collaborative database. • Databases can be created to cover a range of topics or themes. .	• Enter data using words and numbers as well as drop down menus. • enter, Sort, group and arrange information in a database. • Search for information in a database. • Display information in tabular format and chart form. • Create an avatar for use in the database and pick out key information they could record in it. • Ask three questions to encourage their peers to interrogate the database. • Write five questions using their database for their peers to answer
3D modelling (5.6)	• 3D modelling can be done via a computer program. • Moving points changes the appearance of a 3D model. • A 3D design program can be used to meet a design brief. • Models need refining before they are printed out using a standard printer or 3D printer.	• Define what a 3D model is. • Select a design template in the 3D modelling program. • Select a viewpoint – Net, Points, 3D – depending upon what part of the design process they are carrying out. • Rotate a 3D model to see what the model looks like from a variety of angles. • Design a model to meet a design brief – a piece of packaging for holding something. • Refining a model is important prior to the final printing process. • Print their model onto paper/card or via a 3D printer. • Construct their 3D model if appropriate.

Year 5 - Key Vocabulary		
Digital literacy	Information technology	Computer science
Appropriate, avatar, bibliography, collaborate, communication, copyright, CCL, critical thinking, digital footprint, encrypt, identity theft, image manipulation, malware, ownership, PEGI ratings, phishing, passwords, personal information, plagiarism, reference, reliability, responsibility, reliable source, screenshot, spoof, validity	Concept, concept map, connection, collaborate, heading, sub-heading, node, presentation mode, story mode, area, budget, columns, data, format cells, formula, formula bar and wizard, perimeter, profit, row, spreadsheet, totalling tool, variable, arrange, avatar, chart, collaborative, data, database, field, group, record, search, sort, statistics, 2D, 3D, CAD, design brief, net, points, template	Abstraction, action, algorithm, command, concatenation, co-ordinates, debug, decomposition, efficient, event, flowchart, friction, function, input, nest, object, output, physical system, predict, print screen, properties, random, repeat, selection, sequence, simplify, simulation, string, tabs, timer, variable, value, alert, external device, host, sensor, evaluation, feedback, image, instructions, promotion, quest, scene, screenshot, texture, theme

Year 6	
NC states that in KS2, 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 • 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	Digital Literacy • A game can be created to encourage the player to think about online safety. • A digital footprint leaves a trail online to show their behaviour and this can have a negative impact. • It is important to balance game and screen time with other parts of our lives
Computer Science • Number elements combined with a number variable and an if/else statement can be used to create an onscreen countdown timer. Selection can be achieved through the use of if/else statements. • The coordinates of objects can be used in code such as moving the position of them. The position of an object on the screen in 2Code is referenced using x and y coordinates. • The launch command can be used within 2Code to open another Purple Mash file or an external website when it is called in a program. • 2Code contains tabs in the coding view. Tabs can be used to help organise code. • Using functions helps with making programs more efficient. Instead of writing the same sequence of code repeatedly when needed, a function can be created and called when required. Procedures are an independent piece of code. In 2Code, a procedure might be coded as a function. • Flowcharts can represent procedures within a program. Flowcharts can be referenced when a program is executed to test whether a program is running as expected according to the flowchart. • Input is defined by information going into a computer. Inputs could consist of pressing a key, swiping a screen, clicking an object on the screen with a mouse or typing using the keyboard. All of these can be used to increase user interaction within a program. Prompt for input and get input are both defined as user input. • Text adventures are computer games that have been created using text instead of graphics. Players use text commands to control characters and influence the environment. • Binary is a number system using only 1 and 0 and is how data in a computer is saved and used. • All denary numbers can be represented in binary. For example, counting in binary from zero to 15, or writing a friend's age in binary • It is possible to represent the state of an object in a game as active or inactive using the respective binary values of 1 or 0. • A text adventure is a computer game that uses text instead of graphics. • Concept map plans for a story adventure can be used to plan the text-based adventure game. • It is important to have a good level of coding comprehension in order the understand how a text adventure works.	Information Technology • A spreadsheet can be used to investigate a problem such as the frequency of a number rolled on a collection of die. • A formula can be used to work out the new prices in a shop sale. • A spreadsheet can be used to plan how to spend pocket money. • A spreadsheet can be used to plan out a school charity day. • The level, interests and capability of the audience need to be considered when making a game for younger children. • A good quiz to appeal to younger students and their peers should have a range of different question types. • There are a range of software tools for creating quizzes to improve grammar skills. • A quiz can be made to teach students how to interrogate a database. • A range of questions can be used to produce a quiz linked to a curriculum area. • There are key features of a spreadsheet, and data can be entered into cells. • Formulae can be entered into a spreadsheet, and this can save time and make working more efficient. • A spreadsheet can be used to model a situation. • Excel can make complex data clear by manipulating the way it is presented. • Formulae can be used for percentages, averages, max and min in spreadsheets. • A spreadsheet program can display a variety of graphs and charts. • A spreadsheet can be created to model a real-life situation. • Spreadsheets can be used to solve a given problem.

• Debugging is a key part of coding and essential if code is to run properly. • The difference between the World Wide Web and the • Internet. • LAN and WAN are different kinds of networks, • The Internet has changed our lives in many ways.	

Year 6		
Unit	**End points**	**Key skills**
Online safety (6.2)	• A game can be created to encourage the player to think about online safety. • A digital footprint leaves a trail online to show their behaviour and this can have a negative impact. • It is important to balance game and screen time with other parts of our lives	• Recap learning from previous years about digital footprint. • Consider whether a digital footprint is positive or negative. • Look at digital footprints of various people and ascertain if the impression left is positive or negative. • Consider the positive and negative impact of technology on their education, well being and the environment.
Spreadsheets (6.3)	• A spreadsheet can be used to investigate a problem such as the frequency of a number rolled on a collection of die. • A formula can be used to work out the new prices in a shop sale. • A spreadsheet can be used to plan how to spend pocket money. • A spreadsheet can be used to plan out a school charity day.	• Create a spreadsheet with formula. • Use the graphing functionality to display the results on screen. • Create a table and populate it with given information. • Write a formula to work out the prices using cell references. • Calculate totals using appropriate formula. • Work out the difference between income and expenditure and explain the difference • Format cells accordingly.
Coding (6.1)	• Number elements combined with a number variable and an if/else statement can be used to create an onscreen countdown timer. Selection can be achieved through the use of if/else statements. • The coordinates of objects can be used in code such as moving the position of them. The position of an object on the screen in 2Code is referenced using x and y coordinates. • The launch command can be used within 2Code to open another Purple Mash file or an external website when it is called in a program. • 2Code contains tabs in the coding view. Tabs can be used to help organise code. • Using functions helps with making programs more efficient. Instead of writing the same sequence of code repeatedly when needed, a function can be created and called when required. Procedures are an independent piece of code. In 2Code, a procedure might be coded as a function. • Flowcharts can represent procedures within a program. Flowcharts can be referenced when a program is executed to test whether a program is running as expected according to the flowchart. • Input is defined by information going into a computer. Inputs could consist of pressing a key, swiping a screen, clicking an object on the screen with a mouse or typing using the keyboard. All of these can be used to increase user interaction within a program. Prompt for input and get input are both defined as user input. • Text adventures are computer games that have been created using text instead of graphics. Players use text commands to control characters and influence the environment.	• Create a number variable, timer and sequence code. • Incorporate a restart command at the end of the if/else statement. • Set an object's x and y coordinates. • Identify the launch command as part of the control group of commands and incorporate the launch command within a program such as nested within an event. • Recognise the create function command as part of the create and change variable group of blocks. • Create multiple functions within a program and call them. • Interpret flowcharts which show procedures for a simulation. • From interpreting flowcharts which show procedures, predict how a program will run when specific events are met. • Run a program that represents the procedures shown in flowcharts. • Test a program alongside procedures on a flowchart to see whether the program is running as expected. • Use the prompt for input command within a program as part of joining strings together. Remember that when strings are combined it is referred to a concatenation. • Recognise why there is selection in the program and what happens when a condition is met or isn't met based on user input. • See how functions are used for each room within the program and know when they are called. • Plan own text adventures and adapt given code to support in creating own text adventure.
Quizzing (6.7)	• The level, interests and capability of the audience need to be considered when making a game for younger children. • A good quiz to appeal to younger students and their peers should have a range of different question types. • There are a range of software tools for creating quizzes to improve grammar skills.	• Contribute to a collaborative concept map about what makes a good quiz and the different types of quizzes there are. • Make the introduction screen appealing with clear instructions for the user. • Add and edit images into the game. • Design a quiz to meet a specific brief and then share the game with a wider audience.

	• A quiz can be made to teach students how to interrogate a database. • A range of questions can be used to produce a quiz linked to a curriculum area.	• Use the range of question types • Add in a front screen with clear instructions and sounds. • Share the quiz for others to play. • Evaluate their quiz and quizzes produced by others. • Write a quiz of their own that involves searching a database. • Design a curriculum based game show style quiz which is used to challenge the teachers to see if they are smarter than a 10 or 11 year old.
Spreadsheets (6.9)	• There are key features of a spreadsheet, and data can be entered into cells. • Formulae can be entered into a spreadsheet, and this can save time and make working more efficient. • A spreadsheet can be used to model a situation. • Excel can make complex data clear by manipulating the way it is presented. • Formulae can be used for percentages, averages, max and min in spreadsheets. • A spreadsheet program can display a variety of graphs and charts. • A spreadsheet can be created to model a real-life situation. • Spreadsheets can be used to solve a given problem.	• Navigate around a sheet using appropriate cell references. • Enter data into cells of the chosen program. • Navigate around a sheet by clicking in a cell or typing cell reference. • Write simple formula related to the rules of calculation. • Use formulae to change calculations automatically when data entered is changed. • Use the sum feature when typing a formula. • Split cells for ease. • Sort data in a sheet using the appropriate feature. • Add data to a table format. • Create formulae using cell references and use more advanced formula other than SUM • Create a range of graphs and charts depending upon the version being used. • Understand the advantages of using formulae when data is liable to change. • Plan an event using a spreadsheet. • Use the skills gathered over the unit to solve a series of problems.
Understanding binary (6.8)	• Binary is a number system using only 1 and 0 and is how data in a computer is saved and used. • All denary numbers can be represented in binary. For example, counting in binary from zero to 15, or writing a friend's age in binary • It is possible to represent the state of an object in a game as active or inactive using the respective binary values of 1 or 0.	• Complete a puzzle based around the binary system. • Complete a sentence explaining that for a computer to understand and interpret information everything must be converted to binary. • Begin representing numbers in binary format. • Convert simple binary to denary and vice versa. • Answer a quiz to test their knowledge. • Use a program to convert their age to binary. • Make a simple program where objects are on or off.
Text adventures (6.5)	• A text adventure is a computer game that uses text instead of graphics. • Concept map plans for a story adventure can be used to plan the text-based adventure game. • It is important to have a good level of coding comprehension in order the understand how a text adventure works. • Debugging is a key part of coding and essential if code is to run properly.	• Play a simple text-based adventure game on their device. • Plan out a text adventure game using a concept mapping tool. • Use 2Create a Story to create an e-book text-based adventure. • Use the overview button to see how the pages link together. • Evaluate and then share their game with their peers. • Identify variables in a program and what their function is in a text adventure program. • Debug a piece of code for a text-based adventure game. Use the information from the debugging process to improve the code and add extra functionality.
Networks (6.6)	• The difference between the World Wide Web and the • Internet. • LAN and WAN are different kinds of networks, • The Internet has changed our lives in many ways.	• Carry out a survey with people over the age of 25 about the Internet and communication. • Talk about all the connected devices they use in school and at home. • Talk about wired and wireless networks and the key hardware needed for this. • Explain the difference between LAN and WAN. . • Give examples of well-known search engines. • Explain what an ip address is.

Year 6 - Key Vocabulary		
Digital literacy	Information technology	Computer science
Data analysis, digital footprint, inappropriate, location sharing, password, PEGI rating, phishing, print screen, screen time, secure website, spoof	Advanced mode, budget, chart, column, count, data, dice tool, expense, format cells, formula, formula bar, move cell tool, profit, rows, spreadsheet, audience, audio, case sensitive, clipart, clone, cloze, copy, paste, database, image, image filter, selfie, statistics, undo, redo, preview, quiz, auto fit, average, budget, calculation, cell, chart, formatting, currency, delimiter, filter, flash fill, series, template, text wrapping, axis, sorting	Action, algorithm, command, concatenation, co-ordinates, debug, decomposition, event, execute, flowchart, function, input, launch command, object, output, predict, procedure, properties, repeat, selection, sequence, simulation, string, tabs, text object, timer, turtle object, variable, binary, bit, denary, digit, game states, integer, microprocessor, nanotechnology, switch, transistor, link, QR code, sprite, text adventure, DNS, ethernet, hosting, IP, ISP, LAN, network, router, search engine, WAN, web server, website, wi-fi, WWW