		Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing systems and networks									

Digital Literacy

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing systems and networks	• I can explore how things work.		I know how to identify technology. • I can explain how these technology examples help us • I can explain technology as something that helps us • I can locate examples of technology in the classroom	I know how to recognise the uses and features of information technology • I can describe some uses of computers • I can identify examples of computers • I can identify that a computer is a part of IT	I know how to explain how digital devices function • I can explain that digital devices accept inputs • I can explain that digital devices produce outputs • I can follow a process	I know how to describe how networks physically connect to other networks • I can demonstrate how information is shared across the internet • I can describe the internet as a network of networks • I can discuss why a network needs protecting	I know how to explain that computers can be connected together to form systems • I can describe that a computer system features inputs, processes, and outputs • I can explain that computer systems communicate with other devices • I can explain that systems are built using a number of parts	I know how to explain the importance of internet addresses • I can describe how computers use addresses to access websites • I can explain that internet devices have addresses • I can recognise that data is transferred using agreed methods
			I know how to identify a computer and its main parts. • I can name the main parts of a computer • I can switch on and log into a computer • I can use a mouse to click and drag	I know how to identify the uses of information technology in the school • I can identify examples of IT • I can identify that some IT can be used in more than one way • I can sort school IT by what it's used for	I know how to identify input and output devices • I can classify input and output devices • I can describe a simple process • I can design a digital device	I know how to recognise how networked devices make up the internet • I can describe networked devices and how they connect • I can explain that the internet is used to provide many services • I can recognise that the World Wide Web contains websites and web pages	I know how to recognise the role of computer systems in our lives • I can explain the benefits of a given computer system • I can identify tasks that are managed by computer systems • I can identify the human elements of a computer system	I know how to recognise how data is transferred across the internet • I can explain that all data transferred over the internet is in packets • I can explain that data is transferred over networks in packets • I can identify and explain the main parts of a data packet
			I know how to use a mouse in different ways • I can click and drag to make objects on a screen • I can use a mouse to create a picture • I can use a mouse to open a program	I know how to identify information technology beyond school • I can find examples of information technology • I can sort IT by where it is found • I can talk about uses of information technology	I know how to recognise how digital devices can change the way we work • I can explain how I use digital devices for different activities • I can recognise similarities between using digital devices and non-digital tools • I can suggest differences between using digital devices and non-digital tools	I know how to outline how websites can be shared via the World Wide Web (WWW) • I can describe how to access websites on the WWW • I can describe where websites are stored when uploaded to the WWW • I can explain the types of media that can be shared on the WWW"	I know how to experiment with search engines • I can compare results from different search engines • I can make use of a web search to find specific information • I can refine my web search	I know how to explain how sharing information online can help people to work together • I can explain that the internet allows different media to be shared • I can recognise how to access shared files stored online • I can send information over the internet in different ways
			I know how to use a keyboard to type on a computer	I know how to explain how information technology helps us	I know how to explain how a computer network can be used to share information	I know how to describe how content can be added and accessed on the World Wide Web (WWW)	I know how to describe how search engines select results	I know how to evaluate different ways of working together online

			• I can save my work to a file • I can say what a keyboard is for • I can type my name on a computer	• I can demonstrate how IT devices work together • I can recognise common types of technology • I can say why we use IT	• I can discuss why we need a network switch • I can explain how messages are passed through multiple connections • I can recognise different connections	• I can explain that internet services can be used to create content online • I can explain what media can be found on websites • I can recognise that I can add content to the WWW	• I can explain why we need tools to find things online • I can recognise the role of web crawlers in creating an index • I can relate a search term to the search engine's index	• I can explain how the internet enables effective collaboration • I can identify different ways of working together online • I can recognise that working together on the internet can be public or private
			I know how to use the keyboard to edit text • I can delete letters • I can open my work from a file • I can use the arrow keys to move the cursor	I know how to explain how to use information technology safely • I can list different uses of information technology • I can say how rules can help keep me safe • I can talk about different rules for using IT	To explore how digital devices can be connected • I can demonstrate how information can be passed between devices • I can explain the role of a switch, server, and wireless access point in a network • I can recognise that a computer network is made up of a number of devices	I know how to recognise how the content of the WWW is created by people • I can explain that there are rules to protect content • I can explain that websites and their content are created by people • I can suggest who owns the content on websites	I know how to explain how search results are ranked • I can explain that a search engine follows rules to rank results • I can give examples of criteria used by search engines to rank results • I can order a list by rank	I know how to recognise how we communicate using technology • I can choose methods of communication to suit particular purposes • I can explain the different ways in which people communicate • I can identify that there are a variety of ways to communicate over the internet
	• I can remember rules without needing an adult to remind them.	I know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time' • I can explain the reasons for rules, know right from wrong and try to behave accordingly.	I know how to create rules for using technology responsibly • I can discuss how we benefit from these rules • I can give examples of some of these rules • I can identify rules to keep us safe and healthy when we are using technology in and beyond the home	I know how to recognise that choices are made when using information technology • I can explain the need to use IT in different ways • I can identify the choices that I make when using IT • I can use IT for different types of activities	To recognise the physical components of a network • I can identify how devices in a network are connected together • I can identify networked devices around me • I can identify the benefits of computer networks	I know how to evaluate the consequences of unreliable content • I can explain that not everything on the World Wide Web is true • I can explain why I need to think carefully before I share or reshare content • I can explain why some information I find online may not be honest, accurate, or legal	I know how to recognise why the order of results is important, and to whom • I can describe some of the ways that search results can be influenced • I can explain how search engines make money • I can recognise some of the limitations of search engines	I know how to evaluate different methods of online communication • I can compare different methods of communicating on the internet • I can decide when I should and should not share information online • I can explain that communication on the internet may not be private

Information Technology

Creating Media 1

	• I can match my developing physical skills to tasks and activities in the setting.	• I can develop small motor skills so that I can use a range of tools competently, safely, and confidently.	I know how to describe what different freehand tools do • I can draw lines on a screen and explain which tools I used • I can make marks on a screen and explain which tools I used • I can use the paint tools to draw a picture	I know how to use a digital device to take a photograph • I can explain what I did to capture a digital photo • I can recognise what devices can be used to take photograph • I can talk about how to take a photograph	I know how to explain that animation is a sequence of drawings or photographs • I can create an effective flip book—style animation • I can draw a sequence of pictures • I can explain how an animation/flip book works	I know how to identify that sound can be recorded • I can explain that the person who records the sound can say who is allowed to use it • I can identify the input and output devices used to record and play sound • I can use a computer to record audio	I know how to explain what makes a video effective • I can compare features in different videos • I can explain that video is a visual media format • I can identify features of videos	I know how to review an existing website and consider its structure • I can discuss the different types of media used on websites • I can explore a website • I know that websites are written in HTML

	• I can explore, use and refine a variety of artistic effects to express their ideas and feelings. • I can safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	I know how to use the shape tool and the line tools • I can make marks with the square and line tool • I can use the shape and line tools effectively • I can use the shape and line tools to recreate the work of an artist	I know how to make choices when taking a photograph • I can explain the process of taking a good photograph • I can explain why a photo looks better in portrait or landscape format • I can take photos in both landscape and portrait format	I know how to relate animated movement with a sequence of images • I can create an effective stop-frame animation • I can explain why little changes are needed for each frame • I can predict what an animation will look like"	I know how to explain that audio recordings can be edited • I can discuss what sounds can be added to a podcast • I can inspect the soundwave view to know where to trim my recording • I can re-record my voice to improve my recording	I know how to identify digital devices that can record video • I can experiment with different camera angles • I can identify and find features on a digital video recording device • I can make use of a microphone	I know how to plan the features of a web page • I can draw a web page layout that suits my purpose • I can recognise the common features of a web page • I can suggest media to include on my page
		I know how to make careful choices when painting a digital picture • I can choose appropriate shapes • I can create a picture in the style of an artist • I can make appropriate colour choices	I know how to describe what makes a good photograph • I can discuss how to take a good photograph • I can identify what is wrong with a photograph • I can improve a photograph by retaking it	I know how to plan an animation • I can break down a story into settings, characters and events • I can create a storyboard • I can describe an animation that is achievable on screen	I know how to recognise the different parts of creating a podcast project • I can explain how sounds can be combined to make a podcast more engaging • I can plan appropriate content for a podcast • I can save my project so the different parts remain editable	I know how to capture video using a range of techniques • I can capture video using a range of filming techniques • I can review how effective my video is • I can suggest filming techniques for a given purpose	I know how to consider the ownership and use of images (copyright) • I can describe what is meant by the term 'fair use' • I can find copyright-free images • I can say why I should use copyright-free images
		I know how to explain why I chose the tools I used • I can choose appropriate paint tools and colours to recreate the work of an artist • I can say which tools were helpful and why • I know that different paint tools do different jobs	I know how to decide how photographs can be improved • I can experiment with different light sources • I can explain why a picture may be unclear • I can explore the effect that light has on a photo	I know how to identify the need to work consistently and carefully • I can evaluate the quality of my animation • I can review a sequence of frames to check my work • I can use onion skinning to help me make small changes between frames	I know how to apply audio editing skills independently • I can improve my voice recordings • I can record content following my plan • I can review the quality of my recordings	I know how to create a storyboard • I can create and save video content • I can decide which filming techniques I will use • I can outline the scenes of my video	I know how to recognise the need to preview pages • I can add content to my own web page • I can evaluate what my web page looks like on different devices and suggest/make edits • I can preview what my web page looks like
		I know how to use a computer on my own to paint a picture • I can change the colour and brush sizes • I can make dots of colour on the page • I can use dots of colour to create a picture in the style of an artist on my own	To use tools to change an image • I can explain my choices • I can recognise that images can be changed • I can use a tool to achieve a desired effect	I know how to review and improve an animation • I can evaluate another learner's animation • I can explain ways to make my animation better • I can improve my animation based on feedback	I know how to combine audio to enhance my podcast project • I can arrange multiple sounds to create the effect I want • I can explain the difference between saving a project and exporting an audio file • I can open my project to continue working on it	I know how to identify that video can be improved through reshooting and editing • I can explain how to improve a video by reshooting and editing • I can select the correct tools to make edits to my video • I can store, retrieve, and export my recording to a computer	I know how to outline the need for a navigation path • I can describe why navigation paths are useful • I can explain what a navigation path is • I can make multiple web pages and link them using hyperlinks
		I know how to compare painting a picture on a computer and on paper	To recognise that photos can be changed	I know how to evaluate the impact of adding other media to an animation	I know how to evaluate the effective use of audio	I know how to consider the impact of the choices made when making and sharing a video	I know how to recognise the implications of linking to content owned by other people

• I can explain that pictures can be made in lots of different ways • I can say whether I prefer painting using a computer or using paper • I can spot the differences between painting on a computer and on paper"	• I can apply a range of photography skills to capture a photo • I can identify which photos are real and which have been changed • I can recognise which photos have been changed	• I can add other media to my animation • I can evaluate my final film • I can explain why I added other media to my animation	• I can choose appropriate edits to improve my podcast • I can listen to an audio recording to identify its strengths • I can suggest improvements to an audio recording

• I can evaluate my video and share my opinions • I can make edits to my video and improve the final outcome • I can recognise that my choices when making a video will impact on the quality of the final outcome	• I can create hyperlinks to link to other people's work • I can evaluate the user experience of a website • I can explain the implication of linking to content owned by others

Computer Science

Programming A

I know how to explain what a given command will do • I can match a command to an outcome • I can predict the outcome of a command on a device • I can run a command on a device	To describe a series of instructions as a sequence • I can choose a series of words that can be enacted as a sequence • I can follow instructions given by someone else • I can give clear instructions	I know how to explore a new programming environment • I can explain that objects in Scratch have attributes (linked to) • I can identify the objects in a Scratch project (sprites, backdrops) • I can recognise that commands in Scratch are represented as blocks	I know how to identify that accuracy in programming is important • I can create a code snippet for a given purpose • I can explain the effect of changing a value of a command • I can program a computer by typing commands	I know how to control a simple circuit connected to a computer • I can create a simple circuit and connect it to a microcontroller • I can explain what an infinite loop does • I can program a microcontroller to make an LED switch on	I know how to define a 'variable' as something that is changeable • I can explain that the way a variable changes can be defined • I can identify examples of information that is variable • I can identify that variables can hold numbers or letters
I know how to act out a given word • I can follow an instruction • I can give directions • I can recall words that can be acted out"	To explain what happens when we change the order of instructions • I can show the difference in outcomes between two sequences that consist of the same commands • I can use an algorithm to program a sequence on a floor robot • I can use the same instructions to create different algorithms	I know how to identify that commands have an outcome • I can choose a word which describes an on-screen action for my plan • I can create a program following a design • I can identify that each sprite is controlled by the commands I choose	I know how to create a program in a text-based language • I can test my algorithm in a text-based language • I can use a template to create a design for my program • I can write an algorithm to produce a given outcome	I know how to write a program that includes count-controlled loops • I can connect more than one output component to a microcontroller • I can design sequences that use count-controlled loops • I can use a count-controlled loop to control outputs	I know how to explain why a variable is used in a program • I can explain that a variable has a name and a value • I can identify a program variable as a placeholder in memory for a single value • I can recognise that the value of a variable can be changed
I know how to combine forwards and backwards commands to make a sequence • To combine four direction commands to make sequences • To plan a simple program • To find more than one solution to a problem	I know how to use logical reasoning to predict the outcome of a program • I can compare my prediction to the program outcome • I can follow a sequence • I can predict the outcome of a sequence	I know how to explain that a program has a start • I can create a sequence of connected commands • I can explain that the objects in my project will respond exactly to the code • I can start a program in different ways	I know how to explain what 'repeat' means • I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves • I can identify patterns in a sequence • I can use a count-controlled loop to produce a given outcome	I know how to explain that a loop can stop when a condition is met • I can design a conditional loop • I can explain that a condition is either true or false • I can program a microcontroller to respond to an input	I know how to choose how to improve a game by using variables • I can decide where in a program to change a variable • I can make use of an event in a program to set a variable • I can recognise that the value of a variable can be used by a program
I know how to combine four direction commands to make sequences	I know how to explain that programming projects can have code and artwork	I know how to recognise that a sequence of commands can have an order	I know how to modify a count-controlled loop to produce a given outcome	I know how to explain that a loop can be used to repeatedly check whether a condition has been met	I know how to design a project that builds on a given example

• I can compare left and right turns • I can experiment with turn and move commands to move a robot • I can predict the outcome of a sequence involving up to four commands	• I can explain the choices I made for my mat design • I can identify different routes around my mat • I can test my mat to make sure that it is usable	• I can combine sound commands • I can explain what a sequence is • I can order notes into a sequence	• I can choose which values to change in a loop • I can identify the effect of changing the number of times a task is repeated • I can predict the outcome of a program containing a count-controlled loop	• I can explain that a condition being met can start an action • I can identify a condition and an action in my project • I can use selection (an 'if…then…' statement) to direct the flow of a program	• I can choose the artwork for my project • I can create algorithms for my project • I can explain my design choices
I know how to plan a simple program • I can choose the order of commands in a sequence • I can debug my program • I can explain what my program should do	I know how to design an algorithm • I can create an algorithm to meet my goal • I can explain what my algorithm should achieve • I can use my algorithm to create a program	I know how to change the appearance of my project • I can build a sequence of commands • I can decide the actions for each sprite in a program • I can make design choices for my artwork	I know how to decompose a task into small steps • I can explain that a computer can repeatedly call a procedure • I can identify 'chunks' of actions in the real world • I can use a procedure in a program	I know how to design a physical project that includes selection • I can create a detailed drawing of my project • I can describe what my project will do • I can identify a real-world example of a condition starting an action	I know how to use my design to create a project • I can choose a name that identifies the role of a variable • I can create the artwork for my project • I can test the code that I have written
I know how to find more than one solution to a problem • I can identify several possible solutions • I can plan two programs • I can use two different programs to get to the same place	I know how to create and debug a program that I have written • I can plan algorithms for different parts of a task • I can put together the different parts of my program • I can test and debug each part of the program	I know how to create a project from a task description • I can identify and name the objects I will need for a project • I can implement my algorithm as code • I can relate a task description to a design	I know how to create a program that uses count-controlled loops to produce a given outcome • I can design a program that includes count-controlled loops • I can develop my program by debugging it • I can make use of my design to write a program	I know how to create a program that controls a physical computing project • I can test and debug my project • I can use selection to produce an intended outcome • I can write an algorithm that describes what my model will do	I know how to evaluate my project • I can identify ways that my game could be improved • I can share my game with others • I can use variables to extend my game

Information Technology

I know how to label objects • I can describe objects using labels • I can identify the label for a group of objects • I can match objects to groups	I know how to recognise that we can count and compare objects using tally charts • I can compare totals in a tally chart • I can record data in a tally chart • I can represent a tally count as a total"	I know how to create questions with yes/no answers • I can create two groups of objects separated by one attribute • I can investigate questions with yes/no answers • I can make up a yes/no question about a collection of objects	I know how to explain that data gathered over time can be used to answer questions • I can choose a data set to answer a given question • I can identify data that can be gathered over time • I can suggest questions that can be answered using a given data set	I know how to use a form to record information • I can create a database using cards • I can explain how information can be recorded • I can order, sort, and group my data cards	I know how to create a data set in a spreadsheet • I can collect data • I can enter data into a spreadsheet • I can suggest how to structure my data
I know how to identify that objects can be counted	I know how to recognise that objects can be represented as pictures	I know how to identify the attributes needed to collect data about an object	I know how to use a digital device to collect data automatically	I know how to compare paper and computer-based databases	I know how to build a data set in a spreadsheet

Data and Information (section label, left margin)

• I can count a group of objects • I can count objects • I can group objects	• I can enter data onto a computer • I can use a computer to view data in a different format • I can use pictograms to answer simple questions about objects	• I can arrange objects into a tree structure • I can create a group of objects within an existing group • I can select an attribute to separate objects into groups	• I can explain what data can be collected using sensors • I can identify that data from sensors can be recorded • I can use data from a sensor to answer a given question	• I can choose which field to sort data by to answer a given question • I can explain what a field and a record is in a database • I can navigate a flat-file database to compare different views of information	• I can apply an appropriate format to a cell • I can choose an appropriate format for a cell • I can explain what an item of data is
I know how to describe objects in different ways • I can describe an object • I can describe a property of an object • I can find objects with similar properties	I know how to create a pictogram • I can explain what the pictogram shows • I can organise data in a tally chart • I can use a tally chart to create a pictogram	I know how to create a branching database • I can group objects using my own yes/no questions • I can select objects to arrange in a branching database • I can test my branching database to see if it works	I know how to explain that a data logger collects 'data points' from sensors over time • I can identify the intervals used to collect data • I can recognise that a data logger collects data at given points • I can talk about the data that I have captured	I know how to outline how you can answer questions by grouping and then sorting data • I can combine grouping and sorting to answer specific questions • I can explain that data can be grouped using chosen values • I can group information using a database	I know how to explain that formulas can be used to produce calculated data • I can construct a formula in a spreadsheet • I can explain which data types can be used in calculations • I can identify that changing inputs changes outputs
I know how to count objects with the same properties • I can count how many objects share a property • I can group objects in more than one way • I can group similar objects	I know how to select objects by attribute and make comparisons • I can answer 'more than'/'less than' and 'most/least' questions about an attribute • I can create a pictogram to arrange objects by an attribute • I can tally objects using a common attribute	I know how to explain why it is helpful for a database to be well structured • I can compare two branching database structures • I can create yes/no questions using given attributes • I can explain that questions need to be ordered carefully to split objects into similarly sized groups	I know how to recognise how a computer can help us analyse data • I can explain that there are different ways to view data • I can sort data to find information • I can view data at different levels of detail	I know how to explain that tools can be used to select specific data • I can choose multiple criteria to answer a given question • I can choose which field and value are required to answer a given question • I can outline how 'AND' and 'OR' can be used to refine data selection	I know how to apply formulas to data • I can apply a formula to multiple cells by duplicating it • I can calculate data using different operations • I can create a formula which includes a range of cells
I know how to compare groups of objects • I can choose how to group objects • I can describe groups of objects • I can record how many objects are in a group	I know how to recognise that people can be described by attributes • I can choose a suitable attribute to compare people • I can collect the data I need • I can create a pictogram and draw conclusions from it	I know how to plan the structure of a branching database • I can create a physical version of a branching database • I can create questions that will enable objects to be uniquely identified • I can independently create questions to use in a branching database	I know how to identify the data needed to answer questions • I can plan how to collect data using a data logger • I can propose a question that can be answered using logged data • I can use a data logger to collect data	I know how to explain that computer programs can be used to compare data visually • I can explain the benefits of using a computer to create charts • I can refine a chart by selecting a particular filter • I can select an appropriate chart to visually compare data	I know how to create a spreadsheet to plan an event -To choose suitable ways to present data • I can apply a formula to calculate the data I need to answer questions • I can explain why data should be organised • I can use a spreadsheet to answer questions
I know how to answer questions about groups of objects	I know how to explain that we can present information using a computer	I know how to independently create an identification tool	I know how to use data from sensors to answer questions	I know how to use a real-world database to answer questions	I know how to choose suitable ways to present data

• I can compare groups of objects • I can decide how to group objects to answer a question • I can record and share what I have found	• I can give simple examples of why information should not be shared • I can share what I have found out using a computer • I can use a computer program to present information in different ways	• I can create a branching database that reflects my plan • I can suggest real-world uses for branching databases • I can work with a partner to test my identification tool	• I can draw conclusions from the data that I have collected • I can explain the benefits of using a data logger • I can interpret data that has been collected using a data logger	• I can ask questions that will need more than one field to answer • I can present my findings to a group • I can refine a search in a real-world context	• I can produce a chart • I can suggest when to use a table or chart • I can use a chart to show the answer to questions

Information Technology

Creating Media 2

I know how to use a computer to write • I can identify and find keys on a keyboard • I can open a word processor • I can recognise keys on a keyboard	I know how to say how music can make us feel • I can describe music using adjectives • I can identify simple differences in pieces of music • I can say what I do and don't like about a piece of music	I know how to recognise how text and images convey information • I can explain the difference between text and images • I can identify the advantages and disadvantages of using text and images • I can recognise that text and images can communicate messages clearly	I know how to explain that the composition of digital images can be changed • I can explain why I might crop an image • I can improve an image by rotating it • I can use photo editing software to crop an image	I know how to identify that drawing tools can be used to produce different outcomes • I can discuss how vector drawings are different from paper-based drawings • I can experiment with the shape and line tools • I can recognise that vector drawings are made using shapes	I know how to recognise that you can work in three dimensions on a computer • I can add 3D shapes to a project • I can move 3D shapes relative to one another • I can view 3D shapes from different perspectives
I know how to add and remove text on a computer • I can enter text into a computer • I can use backspace to remove text • I can use letter, number, and space keys	I know how to identify that there are patterns in music • I can create a rhythm pattern • I can explain that music is created and played by humans • I can play an instrument following a rhythm pattern	I know how to recognise that text and layout can be edited • I can change font style, size, and colours for a given purpose • I can edit text • I can explain that text can be changed to communicate more clearly	I know how to explain that colours can be changed in digital images • I can experiment with different colour effects • I can explain that different colour effects make you think and feel different things • I can explain why I chose certain colour effects	I know how to create a vector drawing by combining shapes • I can explain that each element added to a vector drawing is an object • I can identify the shapes used to make a vector drawing • I can move, resize, and rotate objects I have duplicated	I know how to identify that digital 3D objects can be modified • I can lift/lower 3D objects • I can recolour a 3D object • I can resize an object in three dimensions
I know how to identify that the look of text can be changed on a computer • I can explain what the keys that I have learnt about already do • I can identify the toolbar and use bold, italic, and underline • I can type capital letters	I know how to experiment with sound using a computer • I can connect images with sounds • I can relate an idea to a piece of music • I can use a computer to experiment with pitch	I know how to choose appropriate page settings • I can create a template for a particular purpose • I can define the term 'page orientation' • I can recognise placeholders and say why they are important	I know how to explain how cloning can be used in photo editing • I can add to the composition of an image by cloning • I can identify how a photo edit can be improved • I can remove parts of an image using cloning	I know how to use tools to achieve a desired effect • I can explain how alignment grids and resize handles can be used to improve consistency • I can modify objects to create a new image • I can use the zoom tool to help me add detail to my drawings	I know how to recognise that objects can be combined in a 3D model • I can duplicate 3D objects • I can group 3D objects • I can rotate objects in three dimensions

				I know how to make careful choices when changing text • I can change the font • I can select all of the text by clicking and dragging • I can select a word by double-clicking	I know how to use a computer to create a musical pattern • I can explain how my music can be played in different ways • I can identify that music is a sequence of notes • I can refine my musical pattern on a computer"	I know how to add content to a desktop publishing publication • I can choose the best locations for my content • I can make changes to content after I've added it • I can paste text and images to create a magazine cover	I know how to explain that images can be combined • I can experiment with tools to select and copy part of an image • I can explain why photos might be edited • I can use a range of tools to copy between images	I know how to recognise that vector drawings consist of layers • I can change the order of layers in a vector drawing • I can identify that each added object creates a new layer in the drawing • I can use layering to create an image	I know how to create a 3D model for a given purpose • I can accurately size 3D objects • I can combine a number of 3D objects • I can show that placeholders can create holes in 3D objects
				I know how to explain why I used the tools that I chose • I can decide if my changes have improved my writing • I can say what tool I used to change the text • I can use 'undo' to remove changes	I know how to create music for a purpose • I can add a sequence of notes to my rhythm • I can create a rhythm which represents an animal I've chosen • I can create my animal's rhythm on a computer	I know how to consider how different layouts can suit different purposes • I can choose a suitable layout for a given purpose • I can identify different layouts • I can match a layout to a purpose	I know how to combine images for a purpose • I can choose suitable images for my project • I can create a project that is a combination of other images • I can describe the image I want to create	I know how to group objects to make them easier to work with • I can copy part of a drawing by duplicating several objects • I can recognise when I need to group and ungroup objects • I can reuse a group of objects to further develop my vector drawing	I know how to plan my own 3D model • I can analyse a 3D model • I can choose objects to use in a 3D model • I can combine objects in a design
				I know how to compare typing on a computer to writing on paper • I can explain the differences between typing and writing • I can make changes to text on a computer • I can say why I prefer typing or writing	I know how to review and refine our computer work • I can explain how I changed my work • I can listen to music and describe how it makes me feel • I can review my work	I know how to consider the benefits of desktop publishing • I can compare work made on desktop publishing to work created by hand • I can identify the uses of desktop publishing in the real world • I can say why desktop publishing might be helpful	I know how to evaluate how changes can improve an image • I can combine text and my image to complete the project • I can review images against a given criteria • I can use feedback to guide making changes	I know how to apply what I have learned about vector drawings • I can compare vector drawings to freehand paint drawings • I can create a vector drawing for a specific purpose • I can reflect on the skills I have used and why I have used them	I know how to create my own digital 3D model • I can construct a 3D model based on a design • I can explain how my 3D model could be improved • I can modify my 3D model to improve it
		Computer Science							
Programming B				I know how to choose a command for a given purpose • I can compare different programming tools • I can find which commands to move a sprite • I can use commands to move a sprite	I know how to explain that a sequence of commands has a start • I can identify that a program needs to be started • I can identify the start of a sequence • I can show how to run my program	I know how to explain how a sprite moves in an existing project • I can choose which keys to use for actions and explain my choices • I can explain the relationship between an event and an action • I can identify a way to improve a program	I know how to develop the use of count-controlled loops in a different programming environment • I can list an everyday task as a set of instructions including repetition • I can modify a snippet of code to create a given outcome • I can predict the outcome of a snippet of code	I know how to explain how selection is used in computer programs • I can identify conditions in a program • I can modify a condition in a program • I can recall how conditions are used in selection	I know how to create a program to run on a controllable device • I can apply my knowledge of programming to a new environment • I can test my program on an emulator • I can transfer my program to a controllable device

			I know how to show that a series of commands can be joined together • I can run my program • I can use a Start block in a program • I can use more than one block by joining them together	I know how to explain that a sequence of commands has an outcome • I can change the outcome of a sequence of commands • I can match two sequences with the same outcome • I can predict the outcome of a sequence of commands	I know how to create a program to move a sprite in four directions • I can choose a character for my project • I can choose a suitable size for a character in a maze • I can program movement	I know how to explain that in programming there are infinite loops and count controlled loops • I can choose when to use a count-controlled and an infinite loop • I can modify loops to produce a given outcome • I can recognise that some programming languages enable more than one process to be run at once	I know how to relate that a conditional statement connects a condition to an outcome • I can create a program with different outcomes using selection • I can identify the condition and outcomes in an 'if... then... else...' statement • I can use selection in an infinite loop to check a condition	I know how to explain that selection can control the flow of a program • I can determine the flow of a program using selection • I can identify examples of conditions in the real world • I can use a variable in an if, then, else statement to select the flow of a program
			I know how to identify the effect of changing a value • I can change the value • I can find blocks that have numbers • I can say what happens when I change a value	I know how to create a program using a given design • I can build the sequences of blocks I need • I can decide which blocks to use to meet the design • I can work out the actions of a sprite in an algorithm	I know how to adapt a program to a new context • I can choose blocks to set up my program • I can consider the real world when making design choices • I can use a programming extension	I know how to develop a design that includes two or more loops which run at the same time • I can choose which action will be repeated for each object • I can evaluate the effectiveness of the repeated sequences used in my program • I can explain what the outcome of the repeated action should be	I know how to explain how selection directs the flow of a program • I can design the flow of a program which contains 'if... then... else...' • I can explain that program flow can branch according to a condition • I can show that a condition can direct program flow in one of two ways	I know how to update a variable with a user input • I can experiment with different physical inputs • I can explain that checking a variable doesn't change its value • I can use a condition to change a variable
			I know how to explain that each sprite has its own instructions • I can add blocks to each of my sprites • I can delete a sprite • I can show that a project can include more than one sprite	I know how to change a given design • I can choose backgrounds for the design • I can choose characters for the design • I can create a program based on the new design	I know how to develop my program by adding features • I can build more sequences of commands to make my design work • I can choose suitable keys to turn on additional features • I can identify additional features (from a given set of blocks)	I know how to modify an infinite loop in a given program • I can explain the effect of my changes • I can identify which parts of a loop can be changed • I can re-use existing code snippets on new sprites	I know how to design a program which uses selection • I can identify the outcome of user input in an algorithm • I can outline a given task • I can use a design format to outline my project	I know how to use a conditional statement to compare a variable to a value • I can explain the importance of the order of conditions in else, if statements • I can modify a program to achieve a different outcome • I can use an operand (e.g. <>=) in an if, then statement
			I know how to design the parts of a project • I can choose appropriate artwork for my project • I can create an algorithm for each sprite • I can decide how each sprite will move	I know how to create a program using my own design • I can build sequences of blocks to match my design • I can choose the images for my own design • I can create an algorithm	I know how to identify and fix bugs in a program • I can match a piece of code to an outcome • I can modify a program using a design • I can test a program against a given design	I know how to design a project that includes repetition • I can develop my own design explaining what my project will do • I can evaluate the use of repetition in a project • I can select key parts of a given project to use in my own design	I know how to create a program which uses selection • I can implement my algorithm to create the first section of my program • I can share my program with others • I can test my program	I know how to design a project that uses inputs and outputs on a controllable device • I can decide what variables to include in a project • I can design the algorithm for my project • I can design the program flow for my project

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I know how to use my algorithm to create a program	I know how to decide how my project can be improved	I know how to design and create a maze-based challenge	I know how to create a project that includes repetition	I know how to evaluate my program	I know how to develop a program to use inputs and outputs on a controllable device
• I can add programming blocks based on my algorithm • I can test the programs I have created • I can use sprites that match my design	• I can compare my project to my design • I can debug my program • I can improve my project by adding features	• I can evaluate my project • I can implement my design • I can make design choices and justify them	• I can build a program that follows my design • I can evaluate the steps I followed when building my project • I can refine the algorithm in my design	• I can extend my program further • I can identify the setup code I need in my program • I can identify ways the program could be improved	• I can create a program based on my design • I can test my program against my design • I can use a range of approaches to find and fix bugs