COMPUTING @ LORD BLYTON

Computing Intent

Within an ever changing and technological world, Lord Blyton Primary understands and values the importance of teaching Computing from a young age. We acknowledge that future generations will rely heavily on their computational confidence and digital skills in order to support their progress within their chosen career paths.

Therefore, it is our school's aim to equip children with the relevant skills and knowledge that is required to understand the three core areas of Computing (Computer Science, Information Technology and Digital Literacy) and to offer a broad and balanced approach to providing quality first teaching of this subject.

Computing is an integral part to a child's education and everyday life. Consequently, we intend to support our pupils to access and understand the core principles of this subject through engaging and activities. Whilst ensuring they understand the advantages and disadvantages associated with online experiences, we want children to develop as respectful, responsible and confident users of technology, aware of measures that can be taken to keep themselves and others safe online.

Our aims for Computing at Lord Blyton Primary are:

- To instil an enthusiasm and appreciation of Computing via engaging and well-planned lessons, allowing children to use their skills to create and develop new ideas.
- To follow a scheme of work, in conjunction with the National Curriculum, which provides progression and a breadth of knowledge across all year groups.
- To ensure that teaching staff continue to access the opportunities to attend subject relevant CPD in order to deliver sessions with confidence and to help identify areas in which they can use computational skills within a cross-curricular approach (as part of their termly topics, for example).
- To identify real world examples and creative challenges in which pupils can explore and extend their understanding of the fundamental principles and concepts of Computing.
- To ensure that pupils develop a respectful and responsible attitude towards using information and communication technology, especially with regards to their own and other's safety.
- To provide a safe space in which pupils can navigate and interact with the digital world, whilst exploring their own personal expression and identity.

National Curriculum

Key stage 1 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.

Key stage 2 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.

AUTUMN 1							
	EYFS	1	2	3	4	5	6
COMPUTING SYSTEMS AND NETWORKS		**Technology around us**	**Information technology around us**	**Connecting Computers**	**The internet**	**Sharing information**	**Internet communication**
		To identify technology I can explain technology as something that helps us I can locate examples of technology in the classroom I can explain how these technology examples help us	**To recognise the uses and features of information technology** I can identify examples of computers I can describe some uses of computers I can identify that a computer is a part of information technology	**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	**To describe how networks physically connect to other networks** I can describe the internet as a network of networks I can demonstrate how information is shared across the internet I can discuss why a network needs protecting	**To explain that computers can be connected together to form systems** I can explain that systems are built using a number of parts I can describe that a computer system features inputs, processes, and outputs I can explain that computer systems communicate with other devices	**To identify how to use a search engine** I can complete a web search to find specific information I can refine my search I can compare results from different search engines
		To identify a computer and its main parts I can name the main parts of a computer	**To identify information technology in the home** I can explain the purpose of	**To identify input and output devices** I can classify input and output devices	**To recognise how networked devices make up the internet** I can describe the different	**To recognise the role of computer systems in our lives**	**To describe how search engines select results** I can explain why we need

		I can switch on and log into a computer I can use a mouse to click and drag	information technology in the home I can open a file I can move and resize images	I can model a simple process I can design a digital device	networked devices and how they connect I can explain how the internet allows us to view the World Wide Web I can recognise that the World Wide Web is the part of the internet that contains websites and web pages	I can identify tasks that are managed by computer systems I can identify the human elements of a computer system I can explain the benefits of a given computer system	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
		To use a mouse in different ways I can use a mouse to open a program I can click and drag to make objects on a screen I can use a mouse to create a picture	**To identify information technology beyond school** I can find examples of information technology I can talk about uses of information technology I can compare types of information technology	**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	**To outline how websites can be shared via the World Wide Web** I can explain the types of media that can be shared on the World Wide Web (WWW) I can describe where websites are stored when uploaded to the WWW	**To recognise how information is transferred over the internet** I can recognise that data is transferred using agreed methods I can explain that networked digital devices have unique addresses	**To explain how search results are ranked** I can explain that search results are ordered I can explain that a search engine follows rules to rank relevant pages I can suggest some of the criteria that a search engine

				I can suggest differences between using digital devices and non-digital tools	I can describe how to access websites on the WWW	I can explain that data is transferred over networks in packets	checks to decide on the order of results
		To use a keyboard to type I can tell you that writing on a computer is called typing I can type my name on a computer I can use the shift key to type a capital letter I can save my work to a file	**To explain how information technology benefits us** I can demonstrate how information technology is used in a shop I can recognise that information technology can be connected I can explain how information technology helps people	**To explain how a computer network can be used to share information** I can recognise different connections I can explain how messages are passed through multiple connections I can discuss why we need a network switch	**To describe how content can be added and accessed on the World Wide Web** I can create media which can be found on websites I can recognise that I can add content to the WWW I can explain that new content can be created online	**To explain how sharing information online lets people in different places work together** I can recognise that connected digital devices can allow us to access shared files stored online I can send information over the internet in different ways I can explain that the internet allows different media to be shared	**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 recognise some of the limitations of search engines I can explain how search engines make money
		To use the keyboard to edit text	**To show how to use information technology safely**	**To explore how digital devices can be connected**	**To recognise how the content of the WWW is created by**	**To contribute to a shared project online** I can suggest	**To recognise how we communicate**

		I can open my work from a file I can use the arrow keys to move the cursor I can delete letters	I can list different uses of information technology I can recognise how to use information technology responsibly I can say how those rules/guides can help me	I can recognise that a computer network is made up of a number of devices 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	**people** I can explain that websites and their content are created by people I can suggest who owns the content on websites I can explain that there are rules to protect content	strategies to ensure successful group work I can make thoughtful suggestions on my group's work I can compare working online with working offline	**using technology** I can explain the different ways in which people communicate I can identify that there are a variety of ways of communicating over the internet I can choose methods of communication to suit particular purposes
		To create rules for using technology responsibly I can identify rules to keep us safe and healthy when we are using technology in and beyond the home I can give examples of some of these rules	**To recognise that choices are made when using information technology** I can identify the choices that I make when using information technology I can explain simple guidance for using	**To recognise the physical components of a network** I can identify how devices in a network are connected with one another I can identify networked devices around me I can identify the benefits of	**To evaluate the consequences of unreliable content** I can explain that not everything on the World Wide Web is true. I can explain why some information I find online may not be honest,	**To evaluate different ways of working together online** I can identify different ways of working together online I can recognise that working together on the internet can be public or private I can explain how the internet	**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

		I can discuss how we benefit from these rules	information technology in different environments and settings I can enjoy a variety of activities	computer networks	accurate, or legal. I can explain why I need to think carefully before I share or reshare content	enables effective collaboration	I can explain that communication on the internet may not be private
AUTUMN 2							
	EYFS	**1**	**2**	**3**	**4**	**5**	**6**
CREATING MEDIA		**Digital painting**	**Digital photography**	**Stop-frame Animation**	**Audio editing**	**Video editing**	**Webpage creation**
		To describe what different freehand tools do I can make marks on a screen and explain which tools I used I can draw lines on a screen and explain which tools I used I can use the paint tools to draw a picture	**To know what devices can be used to take photographs** I can sort devices into old and new I can talk about how to take a photograph I can capture digital photos and talk about my experience	**To explain that animation is a sequence of drawings or photographs** I can draw a sequence of pictures I can create an effective flip book—style animation I can explain how an animation/flip book works	**To identify that sound can be digitally recorded** I can identify digital devices that can record sound and play it back I can identify the inputs and outputs required to play audio or record sound I can recognise the range of sounds that can be recorded	**To recognise video as moving pictures, which can include audio** I can explain that a video can include both visual and audio media I can explain the benefits of adding audio to a video I can plan a video project using a storyboard	**To review an existing website and consider its structure** I can explore a website I can discuss the different types of media used on websites I know that websites are written in HTML

		To use the shape tool and the line tools I can make marks with the square and line tools I can use the shape and line tools effectively I can use the shape and line tools to recreate the work of an artist	**To use a digital device to take a photograph** I can explain the process of taking a good photograph I can take photos in both landscape and portrait format I can explain why a photo looks better in portrait or landscape format	**To relate animated movement with a sequence of images** I can predict what an animation will look like I can explain why little changes are needed for each frame I can create an effective stop frame animation	**To use a digital device to record sound:** I can use a device to record audio and play back sound I can suggest how to improve my recording I can discuss what other people include when recording sound for a podcast	**To identify digital devices that can record video** I can identify and name digital devices that can record video and sound I can choose the most suitable digital device for recording my project I can locate and identify the working features of a digital device that can record video	**To plan the features of a web page** I can recognise the common features of a web page I can suggest media to include on my page I can draw a web page layout that suits my purpose
		To make careful choices when painting a digital picture I can choose appropriate shapes I can make appropriate colour choices I can create a picture in the style of an artist	**To describe what makes a good photograph** I can identify what is wrong with a photograph I can discuss how to take a good photograph	**To plan an animation** I can break down a story into settings, characters and events I can describe an animation that is achievable on screen I can create a storyboard	**To explain that a digital recording is stored as a file:** I can plan and write the content for a podcast I can discuss why it is useful to be able to save digital recordings	**To capture video using a digital device** I can select a suitable device and software to capture my video I can demonstrate suitable methods of using a digital	**To consider the ownership and use of images (copyright)** I can say why I should use copyright-free images I can find copyright-free images I can describe what is meant

			I can improve a photograph by retaking it		I can save a digital recording as a file	device to capture my video I can demonstrate the safe use and handling of devices	by the term 'fair use'
		To explain why I chose the tools I used I know that different paint tools do different jobs I can choose appropriate paint tools and colours to recreate the work of an artist I can say which tools were helpful and why	**To decide how photographs can be improved** I can explore the effect that light has on a photo I can experiment with different light sources I can focus on an object	**To identify the need to work consistently and carefully** I can use onion skinning to help me make small changes between frames I can review a sequence of frames to check my work I can evaluate the quality of my animation	**To explain that audio can be changed through editing:** I can open a digital recording from a file I can discuss ways in which audio recordings can be altered I can edit sections of an audio recording	**To recognise the features of an effective video** I can list some of the features of an effective video I can record a video that demonstrates some of the features of an effective video I can explain why lighting and angle are important in creating an effective video	**To recognise the need to preview pages** I can add content to my own web page I can preview what my web page looks like I can evaluate what my web page looks like on different devices and suggest/make edits.
		To use a computer on my own to paint a picture	**To use tools to change an image** I can recognise that images can be changed	**To review and improve an animation** I can explain ways to make	**To show that different types of audio can be combined and played together:**	**To identify that video can be improved through reshooting and editing**	**To outline the need for a navigation path** I can explain what a

		I can make dots of colour on the page I can change the colour and brush sizes I can use dots of colour to create a picture in the style of an artist on my own	I can use a tool to achieve a desired effect I can explain my choices	my animation better I can evaluate another learner's animation I can improve my animation based on feedback	I can discuss sounds that other people combine I can choose suitable sounds to include in a podcast I can use editing tools to arrange sections of audio	I can store, retrieve, and export my recording to a computer I can explain how to improve a video by reshooting and editing I can select the correct tools to make edits to my video	navigation path is I can describe why navigation paths are useful I can make multiple web pages and link them using hyperlinks
		To compare painting a picture on a computer and on paper I can explain that pictures can be made in lots of different ways I can spot the differences between painting on a computer and on paper I can say whether I prefer painting using a	**To recognise that images can be changed** I can apply a range of photography skills to capture a photo I can recognise which images have been changed I can identify which images are real and which have been changed	**To evaluate the impact of adding other media to an animation** I can add other media to my animation I can explain why I added other media to my animation I can evaluate my final film	**To evaluate editing choices made:** I can explain that digital recordings need to be exported to share them I can discuss the features of a digital recording I like I can suggest improvements to a digital recording	**To consider the impact of the choices made when making and sharing a video** 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 evaluate my video and	**To recognise the implications of linking to content owned by other people** I can explain the implication of linking to content owned by others I can create hyperlinks to link to other people's work I can evaluate the user experience of a website

		computer or using paper				share my opinions	
SPRING 1							
	EYFS	**1**	**2**	**3**	**4**	**5**	**6**
PROGRAMMING A		**Moving a robot**	**Robot algorithms**	**Sequencing sounds**	**Repetition in shapes**	**Selection in physical Computing**	**Variables in games**
		To explain what a given command will do I can predict the outcome of a command on a device I can match a command to an outcome I can run a command on a device	**To describe a series of instructions as a sequence** I can follow instructions given by someone else I can choose a series of words that can be enacted as a sequence I can give clear and unambiguous instructions	**To explore a new programming environment** I can identify the objects in a Scratch project (sprites, backdrops) I can explain that objects in Scratch have attributes (linked to) I can recognise that commands in Scratch are represented as blocks	**To identify that accuracy in programming is important** I can program a computer by typing commands I can explain the effect of changing a value of a command I can create a code snippet for a given purpose	**To control a simple circuit connected to a computer** I can build a simple circuit to connect a microcontroller to a computer I can program a microcontroller to light an LED I can explain why I used an infinite loop	**To define a 'variable' as something that is changeable** I can identify examples of information that is variable I can explain that the way that a variable changes can be defined I can identify that variables can hold numbers or letters
		To act out a given word I can follow an instruction	**To explain what happens when we change the order of instructions**	**I can identify that each sprite is controlled by the commands I choose**	**To create a program in a text-based language** I can use a template to	**To write a program that includes count-controlled loops** I can connect more than one	**To explain why a variable is used in a program** I can identify a program

		I can recall words that can be acted out I can give directions	I can create different algorithms for a range of sequences (using the same commands) I can use an algorithm to program a sequence on a floor robot I can show the difference in outcomes between two sequences that consist of the same commands	I can choose a word which describes an on-screen action for my design I can create a program following a design	create a design for my program I can write an algorithm to produce a given outcome I can test my algorithm in a text-based language	output device to a microcontroller I can design sequences for given output devices I can decide which output devices I control with a count controlled loop	variable as a placeholder in memory for a single value I can explain that a variable has a name and a value I can recognise that the value of a variable can be changed
		To combine forwards and backwards commands to make a sequence I can compare forwards and backwards movements I can start a sequence from the same place	**To use logical reasoning to predict the outcome of a program (series of commands)** I can follow a sequence I can predict the outcome of a sequence I can compare my prediction to	**To explain that a program has a start** I can start a program in different ways I can create a sequence of connected commands I can explain that the objects in my project will respond	**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, eg 'step 3 times'	**To explain that a loop can stop when a condition is met, e.g. number of times** I can explain that a condition is something that can either be true or false (e.g. whether a value is more than 10, or	**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 predict the outcome of a sequence involving forwards and backwards commands	the program outcome	exactly to the code	means the same as 'step, step, step' I can use a count-controlled loop to produce a given outcome	whether a button has been pressed) I can experiment with a do until loop I can program a microcontroller to respond to an input	I can recognise that the value of a variable can be used by a program
		To combine four direction commands to make sequences I can compare left and right turns I can experiment with turn and move commands to move a robot I can predict the outcome of a sequence involving up to four commands	**To explain that programming projects can have code and artwork** 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	**To recognise that a sequence of commands can have an order** I can explain what a sequence is I can combine sound commands I can order notes into a sequence	**To modify a count-controlled loop to produce a given outcome** 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 choose which values to change in a loop	**To conclude that a loop can be used to repeatedly check whether a condition has been met** I can explain 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	**To design a project that builds on a given example** I can choose the artwork for my project I can explain my design choices I can create algorithms for my project

		To plan a simple program I can explain what my program should do I can choose the order of commands in a sequence I can debug my program	**To design an algorithm** I can explain what my algorithm should achieve I can create an algorithm to meet my goal I can use my algorithm to create a program	**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	**To decompose a program into parts** I can identify 'chunks' of actions in the real world I can use a procedure in a program I can explain that a computer can repeatedly call a procedure	**To design a physical project which includes selection** I can identify a condition to start an action (real world) I can describe what my project will do (the task) I can create a detailed drawing of my project	**To use my design to create a project** I can create the artwork for my project I can choose a name that identifies the role of a variable I can test the code that I have written
		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	**To create and debug a program that I have written** I can plan algorithms for different parts of a task I can test and debug each part of the program I can put together the different parts of my program	**To create a project from a task description** I can identify and name the objects I will need for a project I can relate a task description to a design I can implement my algorithm as code	**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 make use of my design to write a program I can develop my program by debugging it	**To create a controllable system which includes selection** I can write an algorithm to control lights and a motor I can use selection to produce an intended outcome I can test and debug my project	**To evaluate my project** I can identify ways that my game could be improved I can extend my game further using more variables I can share my game with others

SPRING 2							
	EYFS	1	2	3	4	5	6
DATA AND INFORMATION		**Grouping data**	**Pictograms**	**Branching databases**	**Data logging**	**Flat-file databases**	**Introduction to Spreadsheets**
		To label objects I can describe objects using labels I can match objects to groups I can identify the label for a group of objects	**To recognise that we can count and compare objects using tally charts** I can record data in a tally chart I can represent a tally count as a total I can compare totals in a tally chart	**To create questions with yes/no answers** I can investigate questions with yes/no answers I can make up a yes/no question about a collection of objects I can create two groups of objects separated by one attribute	**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 suggest questions that can be answered using a given data set I can identify data that can be gathered over time	**To use a form to record information** I can create multiple questions about the same field I can explain how information can be recorded I can order, sort, and group my data cards	**To identify questions which can be answered using data** I can explain the relevance of data headings I can answer questions from an existing data set I can ask simple relevant questions which can be answered using data
		To identify that objects can be counted I can count objects I can group objects I can count a group of objects	**To recognise that objects can be represented as pictures** I can enter data onto a computer I can use a computer to view data in a	**To identify the object attributes needed to collect relevant data** I can select an attribute to separate objects	**To use a digital device to collect data automatically** I can explain that sensors are input devices I can use data from a sensor to	**To compare paper and computer-based databases** I can navigate a flat-file database to compare different views of information	**To explain that objects can be described using data** I can explain what an item of data is I can apply an appropriate

			different format I can use pictograms to answer simple questions about objects	into groups I can create a group of objects within an existing group I can arrange objects into a tree structure	answer a given question I can identify that data from sensors can be recorded	I can explain what a 'field' and a 'record' is in a database I can choose which field to sort data by to answer a given question	number format to a cell I can build a data set in a spreadsheet application
		To describe objects in different ways I can describe an object I can describe a property of an object I can find objects with similar properties	**To create a pictogram** I can organise data in a tally chart I can use a tally chart to create a pictogram I can explain what the pictogram shows	**To create a branching database** I can select objects to arrange in a branching database I can group objects using my own yes/no questions I can prove my branching database works	**To explain that a data logger collects 'data points' from sensors over time** I can identify a suitable place to collect data I can identify the intervals used to collect data I can talk about the data that I have captured	**To apply my knowledge of a database to ask and answer real-world questions** I can explain how information can be grouped I can group information to answer questions I can combine grouping and sorting to answer more specific questions	**To explain that formula can be used to produce calculated data** I can explain the relevance of a cell's data type I can construct a formula in a spreadsheet I can identify that changing inputs changes outputs
		To count objects with the same properties I can group similar objects	**To select objects by attribute and make comparisons**	**To explain why it is helpful for a database to be well structured** I can create	**To use data collected over a long duration to find information**	**To explain that tools can be used to select data to answer questions**	**To apply formulas to data, including duplicating**

		I can group objects in more than one way I can count how many objects share a property	I can tally objects using a common attribute I can create a pictogram to arrange objects by an attribute I can answer 'more than'/'less than' and 'most/least' questions about an attribute	yes/no questions using given attributes I can explain that questions need to be ordered carefully to split objects into similarly sized groups I can compare two branching database structures	I can import a data set I can use a computer to view data in different ways I can use a computer program to sort data	I can choose which field and value are required to answer a given question I can outline how 'AND' and 'OR' can be used to refine data selection I can choose multiple criteria to answer a given question	I can recognise that data can be calculated using different operations I can create a formula which includes a range of cells I can apply a formula to multiple cells by duplicating it
		To compare groups of objects I can choose how to group objects I can describe groups of objects I can record how many objects are in a group	**To 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	**To identify objects using a branching database** I can select a theme and choose a variety of objects I can create questions and apply them to a tree structure I can use my branching database to answer questions	**To identify the data needed to answer questions** I can propose a question that can be answered using logged data I can plan how to collect data using a data logger I can use a data logger to collect data	**To apply my knowledge of a database to ask and answer real-world questions** I can select an appropriate chart to visually compare data I can refine a chart by selecting a particular filter I can explain the benefits of using	**To create a spreadsheet to plan an event** I can use a spreadsheet to answer questions I can explain why data should be organised I can apply a formula to calculate the data I need to answer questions

						a computer to create graphs	
		To answer questions about groups of objects I can decide how to group objects to answer a question I can compare groups of objects I can record and share what I have found	**To explain that we can present information using a computer** I can use a computer program to present information in different ways I can share what I have found out using a computer I can give simple examples of why information should not be shared	**To compare the information shown in a pictogram with a branching database** I can explain what a pictogram tells me I can explain what a branching database tells me I can compare two ways of presenting information	**To use collected data to answer questions** I can interpret data that has been collected using a data logger I can draw conclusions from the data that I have collected I can explain the benefits of using a data logger	**To apply my knowledge of a database to ask and answer real-world questions** I can ask questions that will need more than one field to answer I can refine a search in a real-world context I can present my findings to a group	**To choose suitable ways to present data** I can produce a graph I can use a graph to show the answer to questions I can suggest when to use a table or graph
SUMMER 1							
	EYFS	1	2	3	4	5	6
CREATING MEDIA		**Digital writing**	**Making music**	**Desktop publishing**	**Photo editing**	**Vector drawing**	**3D modelling**
		To use a computer to write I can open a word processor	**To say how music can make us feel** I can identify simple	**To recognise how text and images convey information**	**To explain that digital images can be changed** I can identify changes that we	**To identify that drawing tools can be used to produce**	**To use a computer to create and manipulate three-**

		I can recognise keys on a keyboard I can identify and find keys on a keyboard	differences in pieces of music I can listen with concentration to a range of music (links to the Music curriculum) I can describe how music makes me feel, e.g. happy or sad	I can explain the difference between text and images I can recognise that text and images can communicate messages clearly I can identify the advantages and disadvantages of using text and images	can make to an image I can explore how images can be changed in real life I can explain the effect that editing can have on an image	**different outcomes** I can recognise that vector drawings are made using shapes I can identify the main drawing tools I can discuss how a vector drawing is different from paper-based drawings	**dimensional (3D) digital objects** I can discuss the similarities and differences between 2D and 3D shapes I can explain why we might represent 3D objects on a computer I can select, move, and delete a digital 3D shape
		To add and remove text on a computer I can enter text into a computer I can use letter, number, and space keys I can use backspace to remove text	**To identify that there are patterns in music** I can create a rhythm pattern I can play an instrument following a rhythm pattern I can explain that music is created and played by humans	**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	**To change the composition of an image** I can explain what has changed in an edited image I can change the composition of an image by selecting parts of it I can consider why someone might want to change the	**To create a vector drawing by combining shapes** I can identify the shapes used to make a vector drawing I can explain that each element added to a vector drawing is an object I can move, resize, and	**To compare working digitally with 2D and 3D graphics** I can identify how graphical objects can be modified I can resize a 3D object I can change the colour of a 3D object

					composition of an image	rotate objects I have duplicated	
		To identify that the look of text can be changed on a computer I can type capital letters I can explain what the keys that I have learnt about already do I can identify the toolbar and use bold, italic, and underline	**To describe how music can be used in different ways** I can connect images with sounds I can use a computer to experiment with pitch and duration I can relate an idea to a piece of music	**To choose appropriate page settings** I can define the term 'page orientation' I can recognise placeholders and say why they are important I can create a template for a particular purpose	**To describe how images can be changed for different uses** I can talk about changes made to images I can choose effects to make my image fit a scenario I can explain why my choices fit a scenario	**To use tools to achieve a desired effect** I can use the zoom tool to help me add detail to my drawings I can explain how alignment grids and resize handles can be used to improve consistency I can modify objects to create different effects	**To construct a digital 3D model of a physical object** I can rotate a 3D object I can position 3D objects in relation to each other I can select and duplicate multiple 3D objects
		To make careful choices when changing text I can select a word by double-clicking I can select all of the text by clicking and dragging I can change the font	**To show how music is made from a series of notes** I can identify that music is a sequence of notes I can use a computer to create a musical pattern using three notes	**To add content to a desktop publishing publication** I can choose the best locations for my content I can paste text and images to create a magazine cover I can make changes to	**To make good choices when selecting different tools** I can identify how an image has been retouched I can give examples of positive and negative effects that retouching	**To recognise that vector drawings consist of layers** I can identify that each added object creates a new layer in the drawing I can identify which objects are in the front layer or in the	**To identify that physical objects can be broken down into a collection of 3D shapes** I can identify the 3D shapes needed to create a model of a real-world object

			I can refine my musical pattern on a computer	content after I've added it	can have on an image I can choose appropriate tools to retouch an image	back layer of a drawing I can change the order of layers in a vector drawing	I can create digital 3D objects of an appropriate size I can group a digital 3D shape and a placeholder to create a hole in an object
		To explain why I used the tools that I chose I can say what tool I used to change the text I can decide if my changes have improved my writing I can use 'undo' to remove changes	**To create music for a purpose** I can describe an animal using sounds I can explain my choices I can save my work	**To consider how different layouts can suit different purposes** I can identify different layouts I can match a layout to a purpose I can choose a suitable layout for a given purpose	**To recognise that not all images are real** I can sort images into 'fake' or 'real' and explain my choices I can combine parts of images to create new images I can talk about fake images around me	**To group objects to make them easier to work with** I can copy part of a drawing by duplicating several objects I can group to create a single object I can reuse a group of objects to further develop my vector drawing	**To design a digital model by combining 3D objects** I can plan my 3D model I can choose which 3D objects I need to construct my model I can modify multiple 3D objects
		To compare writing on a computer with writing on paper I can write a message on a	**To review and refine our computer work** I can reopen my work	**To consider the benefits of desktop publishing** I can identify the uses of desktop	**To evaluate how changes can improve an image** I can consider the effect of	**To evaluate my vector drawing** I can create alternatives to vector drawings I can suggest	**To develop and improve a digital 3D model** I can decide how my model can be improved

		computer and on paper I can compare using a computer with using a pencil and paper I can say which method I like best	I can explain how I made my work better I can listen to music and describe how it makes me feel	publishing in the real world I can say why desktop publishing might be helpful I can compare work made on desktop publishing to work created by hand	adding other elements to my work I can compare the original image with my completed publication I can evaluate the impact of my publication on others through feedback	improvements to a vector drawing I can apply what I have learned about vector drawings	I can modify my model to improve it I can evaluate my model against a given criterion
SUMMER 2							
	EYFS	1	2	3	4	5	6
PROGRAMMING B		**Programming animations**	**Programming quizzes**	**Events and actions in programs**	**Repetition in games**	**Selection in quizzes**	**Sensing**
		To choose a command for a given purpose I can find which commands move a sprite I can use commands to move a sprite I can compare different programming tools	**To explain that a sequence of commands has a start** I can identify the start of a sequence I can identify that a program needs to be started	**To explain how a sprite moves in an existing project** I can explain the relationship between an event and an action I can choose which keys to use for actions	**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	**To explain how selection is used in computer programs** I can recall how conditions are used in selection I can identify conditions in a program I can modify a condition in a program	**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 show how to run my program	and explain my choices I can identify a way to improve a program	I can predict the outcome of a snippet of code I can modify a snippet of code to create a given outcome		I can transfer my program to a controllable device
		To show that a series of commands can be joined together I can use more than one block by joining them together I can use a start block in a program I can run my program	**To explain that a sequence of commands has an outcome** I can predict the outcome of a sequence of commands I can match two sequences with the same outcome I can change the outcome of a sequence of commands	**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	**To explain that in programming there are infinite loops and count controlled loops** I can modify loops to produce a given outcome I can choose when to use a count-controlled and an infinite loop I can recognise that some programming languages enable more than one process to be run at once	**To relate that a conditional statement connects a condition to an outcome** I can use selection in an infinite loop to check a condition I can identify the condition and outcomes in an if..then… else statement I can create a program with different outcomes using selection	**To explain that selection can control the flow of a program** 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 can determine the flow of a program using selection
		To identify the effect of changing a value	**To create a program using a given design**	**To adapt a program to a new context**	**To develop a design which includes two or more loops**	**To explain how selection directs the flow of a program**	**To update a variable with a user input**

		I can find blocks which have numbers I can change the value I can say what happens when I change a value	I can tell the actions of a sprite in an algorithm I can decide which blocks to use to meet the design I can build the sequences of blocks I need	I can use a programming extension I can consider the real-world when making design choices I can choose blocks to set up my program	**which run at the same time** I can choose which action will be repeated for each object I can explain what the outcome of the repeated action should be I can evaluate the effectiveness of the repeated sequences used in my program	I can explain that program flow can branch according to a condition I can design the flow of a program which contains if… then… else... I can show that a condition can direct program flow in one of two ways	I can use a condition to change a variable I can experiment with different physical inputs I can explain that if you read a variable, the value remains
		To explain that each sprite has its own instructions I can show that a project can include more than one sprite I can delete a sprite I can add blocks to each of my sprites	**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	**To develop my program by adding features** I can identify additional features (from a given set of blocks) I can choose suitable keys to turn on additional features I can build more sequences of commands to	**To modify an infinite loop in a given program** I can identify which parts of a loop can be changed I can explain the effect of my changes I can re-use existing code snippets on new sprites	**To design a program which uses selection** I can outline a given task I can use a design format to outline my project I can identify the outcome of user input in an algorithm	**To use an 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 use an operand (e.g. <>=) in an if…

				make my design work			then… statement I can modify a program to achieve a different outcome
		To design the parts of a project I can choose appropriate artwork for my project I can decide how each sprite will move I can create an algorithm for each sprite	**To create a program using my own design** I can choose the images for my own design I can create an algorithm I can build sequences of blocks to match my design	**To identify and fix bugs in a program** I can test a program against a given design I can match a piece of code to an outcome I can modify a program using a design	**To design a project that includes repetition** 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 can develop my own design explaining what my project will do	**To create a program which uses selection** I can implement my algorithm to create the first section of my program I can test my program I can share my program with others	**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
		To use my algorithm to create a program I can use sprites which match my design I can add programming	**To decide how my project can be improved** I can compare my project to my design I can improve my project by adding features	**To design and create a maze based challenge** I can make design choices and justify them I can implement my design	**To create a project that includes repetition** I can refine the algorithm in my design I can build a program that	**To evaluate my program** I can identify ways the program could be improved I can identify what setup code	**To develop a program to use inputs and outputs on a controllable device** I can create a program based on my design

		blocks based on my algorithm I can test the programs I have created	I can debug	I can evaluate my project	follows my design I can evaluate the steps I followed when building my project	my project needs I can extend my program further	I can test my program against my design I can use a range of approaches to find and fix bugs