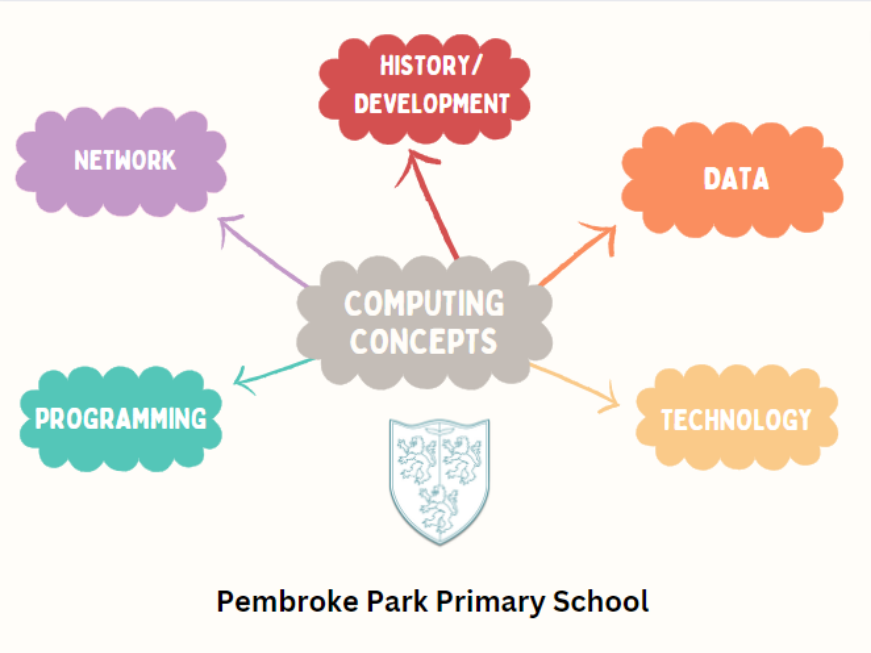
Teach Computing Progression Document (Pembroke Park)

"Whether you want to uncover the secrets of the universe, or you want to pursue a career in the 21st century, basic computer programming is an essential skill to learn".

(Stephen Hawking)

How is this subject taught and why? Computing is taught weekly, allowing the children to develop a range of skills ranging from the basics of using a computer to how to create their own simple programs. Each unit follows a set of 6 lessons which teach the skills required to achieve success moving forward. The skills taught within these lessons will be revisited throughout their school life allowing for the skills to become sticky knowledge meaning the children are equipped for the next steps within their educational journey. In KS1, children learn the basic skills required to navigate the computer systems as well as develop a surface level understanding of algorithms and how they are used. Once children move into KS2, the skills they have learnt in KS1 will be expanded upon with the introduction of more complex algorithms and coding skills as well as a deeper understanding for how computers work and communicate with each other.

Rationale for using a "scheme of learning": We use teach computing as it offers a strong sequence of lessons that build on prior knowledge the children will have learnt in previous year groups. This means the children can continue to develop the skills they have acquired in Year 1 and see the fruits of their efforts pay off in Year 6. The Teach Computing scheme provides the children with a large array of opportunities to develop their skills in different ways that link across with other subjects allowing for cross curriculum learning and the implementation of knowledge they have learning in other subjects. The skills that the children will be developing using their time at Pembroke Park will set them in good standing for their future regardless of what field they go into as they should leave Pembroke being confident in their understanding of computers and how they work.



	Term 1	Term 2	Term 3 `	Term 4	Term 5	Term 6
Reception	Children will learn to usse the digital board and to complete a programme.	Children will know; how to use a camera on an iPad.	Children will learn how to use the internet safely.	Children compare how technology is used at school and at home Using ICT for drawing digital images	Children will know how to work simple programable toys.	Children will use ipads to record events
Year 1	1.1 Computing systems and networks – Technology around us (1.4, 1.5, 1.6)	1.2 Creating media – Digital painting (1.4)	1.3 Programming A – Moving a robot (1.1, 1.2, 1.3, 1.5)	1.4 Data and information – Grouping data (1.4, 1.6)	1.5. Creating media – Digital writing (1.4, 1.6)	1.6 Programming B - Programming animations (1.1, 1.2, 1.3, 1.4)
Year 2	2.1 Computing systems and networks – IT around us (1.4, 1.5, 1.6)	2.2 Creating media – Digital photography (1.4, 1.5, 1.6)	2.3 Programming A – Robot algorithms (1.1, 1.2, 1.3, 1.4)	2.4 Data and information – Pictograms (1.4, 1.6)	2.5 Creating media - Digital music (1.4)	2.6 Programming B - Programming quizzes (1.1, 1.2, 1.3)
Year 3	Computing systems and networks – Connecting computers (2.2, 2.4, 2.6)	Creating media - Stop-frame animation (2.6, 2.7)	Programming A - Sequencing sounds (2.1, 2.2, 2.3, 2.6)	Data and information – Branching databases (2.6)	Creating media – Desktop publishing (2.5, 2.6)	Programming B - Events and actions in programs (2.1, 2.2, 2.3, 2.6)
Year 4	Computing systems and networks – The Internet (2.4, 2.5, 2.6, 2.7)	Creating media - Audio production (2.5, 2.6, 2.7)	Programming A – Repetition in shapes (2.1, 2.2, 2.3, 2.6)	Data and information – Data logging (2.2, 2.6)	Creating media – Photo editing (2.6, 2.7)	Programming B – Repetition in games (2.1, 2.2, 2.3)
Year 5	Computing systems and networks - Systems and searching (2.1, 2.2, 2.4, 2.6)	Creating media - Video production (2.5, 2.6, 2.7)	Programming A – Selection in physical computing (2.1, 2.2, 2.3, 2.6)	Data and information – Flat-file databases (2.5, 2.6)	Creating media – Introduction to vector graphics (2.6)	Programming B – Selection in quizzes (2.1, 2.2, 2.3, 2.6)
Year 6	Computing systems and networks - Communication and collaboration (2.4, 2.6, 2.7)	Creating media – Web page creation (2.5, 2.6, 2.7)	Programming A – Variables in games (2.1, 2.2, 2.3, 2.6)	Data and information – Spreadsheets (2.6)	Creating media – 3D Modelling (2.6, 2.7)	Programming B - Sensing movement (2.1, 2.2, 2.3, 2.6)

Units highlights in Yellow can be replaced with a unit from a previous year group if you feel there is an area that your class is not fully secure in in terms of their computing knowledge. For example, Year 3 could drop their first media unit and replace it with programming a and b from year 2 if you felt the children do not have a secure understanding of the basics of programming. If you do make a change please update your curriculum maps (found here) to reflect these changes. This change should be for this year only as it is our first you using this scheme and there will be gaps in the children's knowledge.

Year group	Teach Computing Unit Knowledge and Skills (strand)	*Early Learning Goals/ National Curriculum Links*	*Vocabulary (Teaching taxonomy)*
Year 1	**1.1 Computing systems and networks – Technology around us (1.4, 1.5, 1.6)** -To identify technology **CS, IT** -To identify a computer and its main parts **CS, IT** -To use a mouse in different ways **CS, ET** -To use a keyboard to type on a computer **CS, ET** -To use the keyboard to edit text **CS, ET** -To create rules for using technology responsibly **CS, ET, SS**	*1.1 Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.*	*(CM) **Creating Media-** Select and create a range of media including text, images, sounds and video.* *(DI) **Data & Information** - How is data stored, organised and used to represent real world artefacts and scenarios* *(DD) **Design & Development** - The activities involved in planning, creating and evaluating computing artefacts* *(CS) **Computing Systems -** What is a computer, how do it's constituent parts function together as a whole* *(IT) **Impact of Technology** - How individuals, systems and society as a whole interact with computer systems* *(AL) **Algorithms** - Being able to comprehend, design, create and evaluate algorithms* *(PG) **Programming -** Creating software to allow computers to solve problems* *(ET) **Effective Use of tools** - Use software tools to support computing work* *(SS) **Safety & Security -** Understanding risks when using technology and how to protect individuals and systems*
	1.2 Creating media – Digital painting (1.4) -To describe what different freehand tools do **CM, ET** -To use the shape tool and the line tools **CM, ET** -To make careful choices when painting a digital picture **CM, ET** -To explain why I chose the tools I used **CM, DD, ET** -To use a computer on my own to paint a picture **CM, ET** -To compare painting a picture on a computer and on paper **CM, DD, ET**	*1.2 Create and debug simple programs.*	
	1.3 Programming A – Moving a robot (1.1, 1.2, 1.3, 1.5) -To explain what a given command will do **AL** -To act out a given word **AL, IT** -To combine forwards and backwards commands to make a sequence **PG** -To combine four direction commands to make sequences **PG** -To plan a simple program **AL, DD** -To find more than one solution to a problem **AL**	*1.3 Use logical reasoning to predict the behaviour of simple programs.*	
	1.4 Data and information – Grouping data (1.4, 1.6) -To label objects **DI** -To identify that objects can be counted **DI** -To describe objects in different ways **DI** -To count objects with the same properties **DI** -To compare groups of objects **DI** -To answer questions about groups of objects **DI**	*1.4 Use technology purposefully to create, organise, store, manipulate and retrieve digital content.*	
	1.5. Creating media – Digital writing (1.4, 1.6) -To use a computer to write **CM, ET** -To add and remove text on a computer **CM, ET** -To identify that the look of text can be changed on a computer **CM, ET** -To make careful choices when changing text **CM, ET** -To explain why I used the tools that I chose **CM, DD, ET** -To compare typing on a computer to writing on paper **CM, ET**	*1.5 Recognise common uses of information technology beyond school.*	
	1.6 Programming B - Programming animations (1.1, 1.2, 1.3, 1.4) -To choose a command for a given purpose **PG** -To show that a series of commands can be joined together **PG** -To show that a series of commands can be joined together **PG** -To explain that each sprite has its own instructions **PG** -To design the parts of a project **DD, PG** -To use my algorithm to create a program **AL, DD, PG**	*1.6 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.*	
Year 2	**2.1 Computing systems and networks – IT around us (1.4, 1.5, 1.6)** -To recognise the uses and features of information technology **CS, NW, SS** -To identify the uses of information technology in the school **CS, IT, NW** -To identify information technology beyond school **CS, IT, NW** -To explain how information technology helps us **CS, IT, NW** -To explain how to use information technology safely **CS, NW, SS**	*1.1 Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.* *1.2 Create and debug simple programs.*	*(NW) **Networks** - Understand how networks can be used to retrieve and share information and come with associated risks*

	-To recognise that choices are made when using information technology **CS, IT, NW, SS** **2.2 Creating media – Digital photography (1.4, 1.5, 1.6)** -To use a digital device to take a photograph **CM, CS** -To make choices when taking a photograph **CM, CS, ET** -To describe what makes a good photograph **CM, DD** -To decide how photographs can be improved **CM, DD, ET** -To use tools to change an image **CM, ET** -To recognise that photos can be changed **CM, ET** **2.3 Programming A – Robot algorithms (1.1, 1.2, 1.3, 1.4)** -To describe a series of instructions as a sequence **AL** -To explain what happens when we change the order of instructions **AL** -To use logical reasoning to predict the outcome of a program **AL, PG** -To explain that programming projects can have code and artwork **AL, DD, PG** -To design an algorithm **AL, DD** -To create and debug a program that I have written **AL, DD, PG** **2.4 Data and information – Pictograms (1.4, 1.6)** -To recognise that we can count and compare objects using tally charts **DI** -To recognise that objects can be represented as pictures **DI, ET** -To create a pictogram **DI, ET** -To select objects by attribute and make comparisons **DI, ET** -To recognise that people can be described by attributes **DI, ET** -To explain that we can present information using a computer **DI, ET, SS** **2.5 Creating media - Digital music (1.4)** -To say how music can make us feel **CM** -To identify that there are patterns in music **CM** -To experiment with sound using a computer **CM, DI** -To use a computer to create a musical pattern **CM, DI** -To create music for a purpose **CM, DD, ET** -To review and refine our computer work **CM, ET** **2.6 Programming B - Programming quizzes (1.1, 1.2, 1.3)** -To explain that a sequence of commands has a start **PG** -To explain that a sequence of commands has an outcome **PG** -To create a program using a given design **DD, PG** -To change a given design **DD, PG** -To create a program using my own design **DD, PG** -To decide how my project can be improved **DD, PG**	*1.3 Use logical reasoning to predict the behaviour of simple programs.* *1.4 Use technology purposefully to create, organise, store, manipulate and retrieve digital content.* *1.5 Recognise common uses of information technology beyond school.* *1.6 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.*	*(CM) **Creating Media**- Select and create a range of media including text, images, sounds and video.* *(DI) **Data & Information** - How is data stored, organised and used to represent real world artefacts and scenarios* *(DD) **Design & Development** - The activities involved in planning, creating and evaluating computing artefacts* *(CS) **Computing Systems -** What is a computer, how do it's constituent parts function together as a whole* *(IT) **Impact of Technology** - How individuals, systems and society as a whole interact with computer systems* *(AL) **Algorithms -** Being able to comprehend, design, create and evaluate algorithms* *(PG) **Programming** - Creating software to allow computers to solve problems* *(ET) **Effective Use of tools** - Use software tools to support computing work* *(SS) **Safety & Security -** Understanding risks when using technology and how to protect individuals and systems*
Year 3	**Computing systems and networks – Connecting computers (2.2, 2.4, 2.6)** -To explain how digital devices function **CS**	*2.1 Design, write and debug programs that accomplish specific goals, including controlling or*	*(NW) **Networks -** Understand how networks can be used to retrieve and share information*

	-To identify input and output devices **CS** -To recognise how digital devices can change the way we work **CS, IT** -To explain how a computer network can be used to share information **CS, NW** -To explore how digital devices can be connected **CS, NW** -To recognise the physical components of a network **CS, NW** **Creating media - Stop-frame animation (2.6, 2.7)** -To explain that animation is a sequence of drawings or photographs **CM, ET** -To relate animated movement with a sequence of images **CM, ET** -To plan an animation **CM, CS** -To identify the need to work consistently and carefully **CM, CS, ET** -To review and improve an animation **CM, CS, ET** -To evaluate the impact of adding other media to an animation **CM, CS, ET** **Programming A - Sequencing sounds (2.1, 2.2, 2.3, 2.6)** -To explore a new programming environment **ET, PG** -To identify that commands have an outcome **PG** -To explain that a program has a start **PG** -To recognise that a sequence of commands can have an order **PG** -To change the appearance of my project **DD, PG** -To create a project from a task description **AL, CM, DD, PG** **Data and information – Branching databases (2.6)** -To create questions with yes/no answers **DI** -To identify the attributes needed to collect data about an object **DI** -To create a branching database **DI, ET** -To explain why it is helpful for a database to be well structured **DD, DI, ET** -To plan the structure of a branching database **DI, ET** -To independently create an identification tool **DD, DI** **Creating media – Desktop publishing (2.5, 2.6)** -To recognise how text and images convey information **CM** -To recognise that text and layout can be edited **CM, ET** -To choose appropriate page settings **CM, ET** -To add content to a desktop publishing publication **CM, ET** -To consider how different layouts can suit different purposes **CM, DD, ET** -To consider the benefits of desktop publishing **CM, DD, ET, IT** **Programming B - Events and actions in programs (2.1, 2.2, 2.3, 2.6)** -To explain how a sprite moves in an existing project **ET, PG** -To create a program to move a sprite in four directions **ET, PG** -To adapt a program to a new context **PG** -To develop my program by adding features **PG** -To identify and fix bugs in a program **DD, PG** -To design and create a maze-based challenge **DD, PG**	*simulating physical systems; solve problems by decomposing them into smaller parts* *2.2 Use sequence, selection, and repetition in programs; work with variables and various forms of input and output* *2.3 Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* *2.4 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* *2.5 Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content* *2.6 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* *2.7 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*	*and come with associated risks* *(CM) **Creating Media**- Select and create a range of media including text, images, sounds and video.* *(DI) **Data & Information** - How is data stored, organised and used to represent real world artefacts and scenarios* *(DD) **Design & Development -** The activities involved in planning, creating and evaluating computing artefacts* *(CS) **Computing Systems** - What is a computer, how do it's constituent parts function together as a whole* *(IT) **Impact of Technology** - How individuals, systems and society as a whole interact with computer systems* *(AL) **Algorithms** - Being able to comprehend, design, create and evaluate algorithms* *(PG) **Programming** - Creating software to allow computers to solve problems* *(ET) **Effective Use of tools** - Use software tools to support computing work* *(SS) **Safety & Security -** Understanding risks when using technology and how to protect individuals and systems*

Year 4	**Computing systems and networks – The Internet (2.4, 2.5, 2.6, 2.7)** -To describe how networks physically connect to other networks **NW, SS** -To recognise how networked devices make up the internet **NW** -To outline how websites can be shared via the World Wide Web (WWW) **NW** -To describe how content can be added and accessed on the World Wide Web (WWW) CM, **NW** -To recognise how the content of the WWW is created by people **NW** -To evaluate the consequences of unreliable content **IT, NW, SS** **Creating media - Audio production (2.5, 2.6, 2.7)** -To identify that sound can be recorded **CS, DI** -To explain that audio recordings can be edited **CM, CS, DD, ET** -To recognise the different parts of creating a podcast project **CM, DD, DI, ET** -To apply audio editing skills independently **CM, ET** -To combine audio to enhance my podcast project **CM, ET** -To evaluate the effective use of audio **CM, DD** **Programming A – Repetition in shapes (2.1, 2.2, 2.3, 2.6)** -To identify that accuracy in programming is important **AL, PG** -To create a program in a text-based language **ET, PG** -To explain what 'repeat' means **AL, PG** -To modify a count-controlled loop to produce a given outcome **PG** -To decompose a task into small steps **AL, PG** -To create a program that uses count-controlled loops to produce a given outcome **PG** **Data and information – Data logging (2.2, 2.6)** -To explain that data gathered over time can be used to answer questions **DI** -To use a digital device to collect data automatically **CS, DI, ET** -To explain that a data logger collects 'data points' from sensors over time **CS, DI, ET** -To recognise how a computer can help us analyse data **DI, ET** -To identify the data needed to answer questions **CS, DI, ET** -To use data from sensors to answer questions **CS, DI** **Creating media – Photo editing (2.6, 2.7)** -To explain that the composition of digital images can be changed **CM, ET** -To explain that colours can be changed in digital images **CM, ET, IT** -To explain how cloning can be used in photo editing **CM, DD, ET** -To explain that images can be combined **CM, ET** -To combine images for a purpose **CM, ET, SS** -To evaluate how changes can improve an image **CM, DD, ET** **Programming B – Repetition in games (2.1, 2.2, 2.3)** -To develop the use of count-controlled loops in a different programming environment **DD, PG** -To explain that in programming there are infinite loops and count controlled loops **AL, PG**	*2.1 Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts* *2.2 Use sequence, selection, and repetition in programs; work with variables and various forms of input and output* *2.3 Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* *2.4 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* *2.5 Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content* *2.6 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* *2.7 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*	*(NW) **Networks** - Understand how networks can be used to retrieve and share information and come with associated risks* *(CM) **Creating Media**- Select and create a range of media including text, images, sounds and video.* *(DI) **Data & Information** - How is data stored, organised and used to represent real world artefacts and scenarios* *(DD) **Design & Development** - The activities involved in planning, creating and evaluating computing artefacts* *(CS) **Computing Systems -** What is a computer, how do it's constituent parts function together as a whole* *(IT) **Impact of Technology** - How individuals, systems and society as a whole interact with computer systems* *(AL) **Algorithms** - Being able to comprehend, design, create and evaluate algorithms* *(PG) **Programming** - Creating software to allow computers to solve problems* *(ET) **Effective Use of tools** - Use software tools to support computing work* *(SS) **Safety & Security** - Understanding risks when*

	-To develop a design that includes two or more loops which run at the same time **DD, PG** -To modify an infinite loop in a given program **PG** -To design a project that includes repetition **DD, PG** -To create a project that includes repetition **DD, PG**		*using technology and how to protect individuals and systems*
Year 5	**Computing systems and networks - Systems and searching (2.1, 2.2, 2.4, 2.6)** -To explain that computers can be connected together to form systems **CS** -To recognise the role of computer systems in our lives **CS, IT** -To experiment with search engines **NW** -To describe how search engines select results **IT, NW** -To explain how search results are ranked **ET, NW** -To recognise why the order of results is important, and to whom **DD, ET, NW** **Creating media - Video production (2.5, 2.6, 2.7)** -To explain what makes a video effective **CM, DD** -To identify digital devices that can record video **CM, CS** -To capture video using a range of techniques **CM, SS** -To create a storyboard **CM, DD, ET** -To identify that video can be improved through reshooting and editing **CM, ET** -To consider the impact of the choices made when making and sharing a video **CM, DD, ET** **Programming A – Selection in physical computing (2.1, 2.2, 2.3, 2.6)** -To control a simple circuit connected to a computer **CS, PG** -To write a program that includes count-controlled loops **CS, PG** -To explain that a loop can stop when a condition is met **CS, PG** -To explain that a loop can be used to repeatedly check whether a condition has been met **PG** -To design a physical project that includes selection **CS, DD, PG** -To create a program that controls a physical computing project **CS, DD, PG** **Data and information – Flat-file databases (2.5, 2.6)** -To use a form to record information **DI, ET** -To compare paper and computer-based databases **DD, DI** -To outline how you can answer questions by grouping and then sorting data **DI** -To explain that tools can be used to select specific data **DI, ET** -To explain that computer programs can be used to compare data visually **DI, ET** -To use a real-world database to answer questions **DI, ET** **Creating media – Introduction to vector graphics (2.6)** -To identify that drawing tools can be used to produce different outcomes **CM, DI, ET** -To create a vector drawing by combining shapes **CM, ET**	*2.1 Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts* *2.2 Use sequence, selection, and repetition in programs; work with variables and various forms of input and output* *2.3 Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* *2.4 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* *2.5 Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content* *2.6 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* *2.7 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*	*(NW)* ***Networks*** *- Understand how networks can be used to retrieve and share information and come with associated risks* *(CM)* ***Creating Media-*** *Select and create a range of media including text, images, sounds and video.* *(DI)* ***Data & Information*** *- How is data stored, organised and used to represent real world artefacts and scenarios* *(DD)* ***Design & Development*** *- The activities involved in planning, creating and evaluating computing artefacts* *(CS)* ***Computing Systems*** *- What is a computer, how do it's constituent parts function together as a whole* *(IT)* ***Impact of Technology -*** *How individuals, systems and society as a whole interact with computer systems* *(AL)* ***Algorithms -*** *Being able to comprehend, design, create and evaluate algorithms* *(PG)* ***Programming -*** *Creating software to allow computers to solve problems*

	-To use tools to achieve a desired effect -To recognise that vector drawings consist of layers **CM, ET** -To group objects to make them easier to work with **CM, ET** -To apply what I have learned about vector drawings **CM, DD** **Programming B – Selection in quizzes (2.1, 2.2, 2.3, 2.6)** -To explain how selection is used in computer programs **AL, PG** -To relate that a conditional statement connects a condition to an outcome **AL, PG** -To explain how selection directs the flow of a program **AL, PG** -To design a program which uses selection **DD, PG** -To create a program which uses selection **DD, PG** -To evaluate my program **DD, PG**		*(ET)* ***Effective Use of tools -*** *Use software tools to support computing work* *(SS)* ***Safety & Security*** *- Understanding risks when using technology and how to protect individuals and systems*
Year 6	**Computing systems and networks - Communication and collaboration (2.4, 2.6, 2.7)** -To explain the importance of internet addresses **ET, NW** -To recognise how data is transferred across the internet **ET, NW** -To explain how sharing information online can help people to work together **ET, NW** -To evaluate different ways of working together online **ET, IT, NW** -To recognise how we communicate using technology **ET, NW** -To evaluate different methods of online communication **DD, ET, NW** **Creating media – Web page creation (2.5, 2.6, 2.7)** -To review an existing website and consider its structure **CM, DD, NW** -To plan the features of a web page **CM, DD** -To consider the ownership and use of images (copyright) **CM, DD, SS** -To recognise the need to preview pages **CM, DD, ET** -To outline the need for a navigation path **CM, DD, ET, NW** -To recognise the implications of linking to content owned by other people **CM, DD, ET, IT, NW** **Programming A – Variables in games (2.1, 2.2, 2.3, 2.6)** -To define a 'variable' as something that is changeable **PG** -To explain why a variable is used in a program **PG** -To choose how to improve a game by using variables **DD, PG** -To design a project that builds on a given example **DD, PG** -To use my design to create a project **DD, PG** -To evaluate my project **DD, PG** **Data and information – Spreadsheets (2.6)** -To create a data set in a spreadsheet **DI** -To build a data set in a spreadsheet **DI** -To explain that formulas can be used to produce calculated data **DI, ET, PG** -To apply formulas to data **DI, ET, PG** -To create a spreadsheet to plan an event **DI, ET** -To choose suitable ways to present data **CM, DI, ET** **Creating media – 3D Modelling (2.6, 2.7)**	*2.1 Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts* *2.2 Use sequence, selection, and repetition in programs; work with variables and various forms of input and output* *2.3 Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs* *2.4 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* *2.5 Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content* *2.6 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* *2.7 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable*	*(NW)* ***Networks*** *- Understand how networks can be used to retrieve and share information and come with associated risks* *(CM)* ***Creating Media-*** *Select and create a range of media including text, images, sounds and video.* *(DI)* ***Data & Information*** *- How is data stored, organised and used to represent real world artefacts and scenarios* *(DD)* ***Design & Development*** *- The activities involved in planning, creating and evaluating computing artefacts* *(CS)* ***Computing Systems*** *- What is a computer, how do it's constituent parts function together as a whole* *(IT)* ***Impact of Technology*** *- How individuals, systems and society as a whole interact with computer systems*

	-To recognise that you can work in three dimensions on a computer **CM, ET** -To identify that digital 3D objects can be modified **CM, ET** -To recognise that objects can be combined in a 3D model **CM, ET** -To create a 3D model for a given purpose **CM, ET** -To plan my own 3D model **CM, DD, ET** -To create my own digital 3D model **CM, DD, ET** **Programming B - Sensing movement (2.1, 2.2, 2.3, 2.6)** -To create a program to run on a controllable device **CS, PG** -To explain that selection can control the flow of a program **CS, PG** -To update a variable with a user input **CS, PG** -To use a conditional statement to compare a variable to a value **CS, PG** -To design a project that uses inputs and outputs on a controllable device **CS, DD, PG** -To develop a program to use inputs and outputs on a controllable device **CS, DD, PG**	*behaviour; identify a range of ways to report concerns about content and contact.* -	*(AL)* ***Algorithms*** *- Being able to comprehend, design, create and evaluate algorithms* *(PG)* ***Programming*** *- Creating software to allow computers to solve problems* *(ET)* ***Effective Use of tools*** *- Use software tools to support computing work* *(SS)* ***Safety & Security*** *- Understanding risks when using technology and how to protect individuals and systems*