YR3	Computer Science	Information Technology	Digital Literacy
Autumn 1	**Algorithms** **Begin to design, write and debug programs that accomplish specific goals.** **Begin to understand the use of:** • Sequence • Selection (when x, then y happens) **Begin to use logical reasoning to explain how a simple algorithm works** **Begin to understand computer networks including the internet:** **Communicating Data** **Binary**	**Use search technologies effectively** Select and **use 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	Begin to understand the opportunities [networks] offer for communication and collaboration. **Begin to realise the importance of evaluating digital content** **Use technology responsibly** and begin to use technology safely and respectfully. Begin to recognise acceptable/unacceptable behaviour. **Identify a range of ways to report concerns about content and contact** • eSafety • ***SWGfL SoW*** *e-Safety* • ***And*** o Report an issue o Tell an adult • Superhero SID song • Why have user accounts • Importance of passwords • Sharing personal information • Technology beyond school • Proficiency - Typing
Autumn 2	**Write and debug programs that accomplish specific goals.** **Begin to use** • Sequence • Selection • repetition • variables **in programs** **Work with various forms of input and output.** **Continue to develop logical reasoning to explain how simple algorithms work** **Continue to develop understanding of computer networks including the internet; how they can provide multiple services, such as the World Wide Web.** **Networks** What is a network What is the difference between the internet and the world wide web?	**Use search technologies effectively** • Choosing words for effective searching **Select and use 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**	**Continue to begin to understand the opportunities [networks] offer for communication and collaboration** **Begin to realise the importance of evaluating digital content** **Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact** • eSafety • ***SWGfL SoW*** *e-Safety* • ***And*** o Report an issue o Tell an adult

YR3	Computer Science	Information Technology	Digital Literacy

Spring 1	**Write and debug programs that accomplish specific goals.**
	
	Begin to use
	• Sequence
	• Selection
	• repetition
	• variables
	
	in programs
	
	Work with various forms of input and output.
	
	Continue to develop logical reasoning to explain how simple algorithms work
	
	Continue to develop understanding of computer networks including the internet; how they can provide multiple services, such as the World Wide Web.
	
	Networks:
	Explore different types of networks and how they work
		Use search technologies effectively
		
		Select and use 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
			Continue to begin to understand the opportunities [networks] offer for communication and collaboration
			
			Begin to realise the importance of evaluating digital content
			
			Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  ○ Report an issue
			  ○ Tell an adult

Spring 2	**Design, Write and debug programs that accomplish specific goals.**
	
	Use
	• Sequence
	• Selection
	• repetition
	• variables
	
	in programs
	
	Work with various forms of input and output.
	
	Continue to develop logical reasoning to explain how simple algorithms work
	
	Continue to develop understanding of computer networks including the internet; how they can provide multiple services, such as the World Wide Web.
	
	Networks:
	Explore different types of networks and how they work transfer a binary msg
		Use search technologies effectively
		
		Select and use 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
			Continue to begin to understand the opportunities [networks] offer for communication and collaboration
			
			Begin to realise the importance of evaluating digital content
			
			Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  ○ Report an issue
			  ○ Tell an adult

YR3	Computer Science	Information Technology	Digital Literacy

Summer 1	**Design, Write and debug programs that accomplish specific goals.**
	
	Use
	• Sequence
	• Selection
	• repetition
	• variables
	
	in programs
	
	Work with various forms of input and output.
	
	Continue to develop logical reasoning to explain how simple algorithms work
	
	Continue to develop understanding of computer networks including the internet; how they can provide multiple services, such as the World Wide Web.
	
	Networks:
	Explore different types of networks and how they work
		Use search technologies effectively
		
		Select and use 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
			Continue to begin to understand the opportunities [networks] offer for communication and collaboration
			
			Begin to realise the importance of evaluating digital content
			
			Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  ○ Report an issue
			  ○ Tell an adult

Summer 2	**Design, Write and debug programs that accomplish specific goals.**
	
	Use
	• Sequence
	• Selection
	• repetition
	• variables
	
	in programs
	
	Work with various forms of input and output.
	
	Continue to develop logical reasoning to explain how simple algorithms work **begin to identify errors in algorithms and programs**
	
	Continue to develop understanding of computer networks including the internet; how they can provide multiple services, such as the World Wide Web.
	
	Networks:
	Explore different types of networks and how they work
		Use search technologies effectively
		
		Select and use 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
			Continue to begin to understand the opportunities [networks] offer for communication and collaboration
			
			Begin to realise the importance of evaluating digital content
			
			Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  ○ Report an issue
			  ○ Tell an adult

YR4	Computer Science	Information Technology	Digital Literacy

Autumn 1	**Create algorithm for problem then Design, write and debug programs that accomplish these specific goals.**
	
	Use sequence, selection and repetition in programs.
	Use two-way selection (if, then & else statements) & poste-tested loop (until) within programs.
	
	Know how to recognise and use variables and various forms of input. Continue to develop logical reasoning to explain how simple algorithms work.
	Create and use a flowchart to express solutions
	
	Introduce Binary
	
	To begin to recognise and understand the function of the main internal parts of basic computer architecture.
		Use search technologies effectively.
		
		Choosing words carefully for effective searching
		
		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
		
		Discrete
		Introduce MS Excel
		Including the use of sorting to improve searching for information (show sorting within Windows Explorer also).
		Introduce the difference between data and information.
			Continue to understand the opportunities [networks] offer for communication and collaboration.
			
			Begin to be discerning in evaluating digital content
			
			Use technology responsibly and begin to use technology safely and respectfully.
			
			Begin to recognise acceptable/unacceptable behaviour.
			
			Identify a range of ways to report concerns about content and contact
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  ○ Report an issue
			  ○ Tell an adult
			• Superhero SID song
			• Why have user accounts
			• Importance of passwords
			• Sharing personal information
			• Technology beyond school
			
			• Proficiency - Typing

Autumn 2	**Begin to Decompose a problem in order to** create algorithm for problem then Design, write and debug programs that accomplish specific goals, **including controlling physical systems.**
	
	Use sequence, selection and repetition in programs.
	Use two-way selection (if, then & else statements) & poste-tested loop (until) within programs.
	
	Continue to recognise and use variables and various forms of input and Output to develop logical reasoning to explain how simple algorithms work and **detect and correct errors in algorithms and programs.**
	
	Continue to use flowchart to express solutions
	Use binary to represent true and false in a flowchart.
	
	Recognise & understand the functions of the main internal parts of basic computer architecture & understands the concepts behind the fetch-execute cycle.
	
	Begin to understand the main function of the operating system
		Use search technologies effectively
		
		Compare results from different search engines
		
		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
		
		Embedded
		Use MS Excel to create a Database Including the use of data types. Search for data within an Excel Spreadsheet using filters and simple criteria searches. Include And/Or searching (Binary Searches)
			Understand the opportunities [networks] offer for communication and collaboration
			
			Further develop evaluation skills when using digital content
			
			Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify and know how to use a range of ways to report concerns about content and contact
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  ○ Report an issue
			  ○ Tell an adult

YR4	Computer Science	Information Technology	Digital Literacy
Spring 1	**Design solutions by decomposing a problem in order to create sub-solutions for these parts, then** write & debug programs to meet goals, incl controlling physical systems. **Recognise that more than one solution may exist.** Continue to use sequence, selection, repetition, variables and various **inputs & outputs. Use computer to collect data from input devices.** **Use logical reasoning to explain how simple algorithms work and begin to detect and correct errors in algorithms and programs** **Recognises that there are a range of different operating systems & and application software available for the same hardware**	Use search technologies effectively **Using Search Parameters effectively** 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 **Discrete** **Introduce MS Powerpoint** **Can use knowledge of software to evaluate design and content of work, to make appropriate improvements based on feedback received.** **Can comment on the success of this solution.**	**Understand the opportunities [networks] offer for communication and collaboration** **Be discerning in evaluating digital content** **Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact** Introduce Planet Sherston and messaging Emails • eSafety • ***SWGfL SoW*** *e-Safety* • ***And*** o Report an issue o Tell an adult
Spring 2	Design solutions through abstraction and decomposing of problem then create sub-solutions for these parts, write & debug programs to meet goals, incl **Simulating** physical systems. **Recognise tasks best completed by humans or computer.** **Recognise that more than one solution may exist.** Continue to use sequence, selection, repetition, variables and various **inputs & outputs. Use computer to collect data from input devices.** Use logical reasoning to explain how simple algorithms work and **detect and correct errors in algorithms & programs** **Introduce private networks (LAN - Local Area Network) & network types (peer to peer, star & bus).**	**Begin to use search technologies effectively considering the effects different words will have on results.** 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 **Introduce MS Publisher** **Build awareness of tasks best completed by humans or computer.**	**Understand the opportunities [networks] offer for communication and collaboration** **Be discerning in evaluating digital content** **Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact** Introduce Planet Sherston and messaging Emails • eSafety • ***SWGfL SoW*** *e-Safety* • ***And*** o Report an issue o Tell an adult

YR4	Computer Science	Information Technology	Digital Literacy

Summer 1	Design solutions through abstraction & decomposing of problem then create sub-solutions for these parts, write & debug programs to meet goals,
	
	Recognise tasks best completed by humans or computer and Recognise that more than one solution may exist.
	
	Continue to use sequence, selection, repetition, variables and various **inputs & outputs. Use computer to collect data from input devices.**
	
	Understand two-way selection (if, then & else statements) & poste-tested loop (until) and when to use within programs.
	
	Use logical reasoning to explain how simple algorithms work and **detect and correct errors in algorithms & programs**
		Begin to use search technologies effectively considering the effects different words will have on results.
		
		Begin to use simple Search Parameters
		
		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.
		
		Recognises the audience when designing and creating digital content.
			Understand the opportunities [networks] offer for communication and collaboration
			
			Be discerning in evaluating digital content
			
			Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  o Report an issue
			  o Tell an adult

Summer 2	Continue to design solutions through abstraction and decomposing of problem then create sub-solutions for these parts, write & debug programs to meet goals,
	
	Continue to use sequence, selection, repetition, variables and various **inputs & outputs. Use computer to collect data from input devices.**
	
	Understand two-way selection (if, then & else statements) & poste-tested loop (until) and when to use within programs.
	
	Use logical reasoning to explain how simple algorithms work and **detect and correct errors in algorithms & programs**
		Use simple Search Parameters effectively
		
		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
			Understand the opportunities [networks] offer for communication and collaboration when computers are networked
			
			Be discerning in evaluating digital content. Begin to make judgements about digital content when evaluating and repurposing it for a given audience.
			Analyse and evaluate data and information and recognise that poor quality data leads to unreliable results and inaccurate conclusions.
			
			Understand why and when computers are used.
			
			Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  o Report an issue
			  o Tell an adult

YR5	Computer Science	Information Technology	Digital Literacy

Autumn 1	Continue to design solutions through abstraction & decomposing of problem then create sub-solutions for these parts, write & debug programs to meet goals,
	
	Continue to use sequence, selection, repetition, variables & various **inputs & outputs.**
	
	Continues to show understanding of two-way selection (if, then & else statements) & poste-tested loop (until) and when to use within programs.
	
	Understands that Iteration is the repetition of a process such as a loop
	
	Use logical reasoning to explain how simple algorithms work & **detect & correct errors in algorithms & programs**
	
	Continue to develop understanding of computer networks including the internet; how they can provide multiple services, e.g. World Wide Web.
	
	Networks: Explore services provided over networks
	
	Introduce HTML & CSS to construct static web pages
		Revise effective use of search technologies considering the effects different words will have on results and the use of simple Search Parameters. Introduce additional search parameters.
		
		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
			Understand the opportunities [networks] offer for communication and collaboration
			
			Makes judgements about digital content when evaluating and repurposing it for a given audience
			
			Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
			
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  ○ Report an issue
			  ○ Tell an adult

YR5	Computer Science	Information Technology	Digital Literacy

Autumn 2	**Begins to represent solutions using structured notation.**
	
	Recognise that more than one solution may exist and that different algorithms exist for the same problem.
	
	Begins to identify similarities & differences in situations & can use these to solve problems (pattern recognition).
	
	Continue to design solutions through abstraction & decomposition of a problem then create sub-solutions for these parts, write & debug programs.
	
	Continue to use sequence, selection, repetition, variables & various inputs & outputs. Use computer to collect data from input devices.
	
	Continue to develop understanding of computer networks incl. internet & provision of multiple services.
	
	Networks: Introduce more network devices & service providers beyond the private network. i.e. ISP, Gateway.
	
	Continue to use HTML & CSS
	
	Understands that binary represents all data on digital computers & use bit patterns to represent data i.e. text, numeric, images, true & false, off & on etc… and understand that computers transfer data in binary
		Continue to use search technologies effectively. Perform more complex searches for information using Boolean and relational operators.
		
		Evaluates appropriateness of digital devices, internet services and application software to achieve given goals.
			• **eSafety**
			• *SWGfL SoW* ***e-Safety***
			• *And*
			  ○ **Report an issue**
			  ○ **Tell an adult**

YR5	Computer Science	Information Technology	Digital Literacy
Spring 1	Continue to design solutions through abstraction and decomposing of problem then create sub-solutions for these parts, write & debug **modular programs using procedures. To begin to understand that a procedure can be used to hide the detail of a sub-solution**. Continue to use sequence, selection, repetition, variables and various inputs & outputs. Use computer to collect data from input devices. **Use variables and relational operators within a loop to govern termination** **Understand two-way selection (if, then & else statements) & poste-tested loop (until) and when to use within programs.** Use logical reasoning to explain how simple algorithms work and **detect and correct errors in algorithms & programs** Further develop understanding of networks, internet & services they provide, such as the Web, **VOIP, Skype etc..Use Skype** **Networks:** Understand the relationship between binary & files size (uncompressed)	Recognises the audience when designing and creating digital content.	**Communication –** Email • eSafety • ***SWGfL SoW*** *e-Safety* • ***And*** o Report an issue o Tell an adult
Spring 2	**Introduce Python to build practical experience of a high-level textual language** **Define data types and select the appropriate data type for the task.** **Query Data on a table using typical query language** **Appreciate how Search results are selected & ranked**	**Explores and recognises ethical issues surrounding the application of information technology beyond school** **Uses criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution and future solutions.**	• eSafety • ***SWGfL SoW*** *e-Safety* • ***And*** o Report an issue o Tell an adult

YR5	Computer Science	Information Technology	Digital Literacy

Summer 1	Continue to work with Python **to further build on practical experience of a high-level textual language including using standard libraries when programming.**
	
	Use a range of operators and expressions (e.g. Boolean) and begin to apply them in the context of program control.
	
	Introduce data types in Python. Define data types and **select the appropriate data type for the task within python.**
	
	Continue to develop understanding of data transmission over networks, including internet i.e. IP & Packet switching
	
	Appreciate how Search results are selected & ranked
		Begin to designs criteria to critically evaluate the quality of solutions.
		
		Begin to use the criteria to identify improvements and begin to make appropriate refinements to the solution
			• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  o Report an issue
			  o Tell an adult

Summer 2	**Understand the difference between physical, wireless and mobile networks**	**Continue to practice design of criteria to critically evaluate the quality of solutions, to use the criteria to identify improvements and to make appropriate refinements to the solution**	• eSafety
			• ***SWGfL SoW*** *e-Safety*
			• ***And***
			  o Report an issue
			  o Tell an adult

IMPORTANT NOTES:

2014-15

- **Year 4 will be working to the Year 3 and part of Year 4 Mid Term Plans**
- **Year 5 will be working to the Year 3 and part of Year 4 & 5 Mid Term Plans**
- **Year 6 will be working to the Year 3 and part of Year 4 & 5 Mid Term Plans**

2015-16

- **Year 4 will be working to the Year 4 Mid Term Plans**
- **Year 5 will be working to the Year 4 and part of Year 5 Mid Term Plans**
- **Year 6 will be working to the Year 4 and part of Year 5 Mid Term Plans**

2016-17

- **Year 5 will be working to the Year 5 Mid Term Plans**
- **Year 6 will be working to the Year 5 and part of Year 6 Mid Term Plans**

2017-18

- **Year 6 will be working to the Year 6 Mid Term Plans**

Year 6 Medium Term Plans with be created after review of the current new additions