

## Computing 3A: Programme of Study 2018-2019

Term	Wk	W/C	Theme	Topic	Assessment Objectives	Notes
Autumn 1	1	3/9/18	<b>Theme 1 Ambition</b> (decision making/ leadership skills)	<b>The Internet (Communication and Networks)</b>	<b>All</b> Understands the difference between the internet and internet service e.g. world wide web Shows an awareness of, and can use a range of internet services e.g. VOIP Recognises what is acceptable and unacceptable behaviour when using technologies and online services.  <b>Most</b> Understands how to effectively use search engines, and knows how search results are selected, including that search engines use 'web crawler programs' Selects, combines and uses internet services. Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns.  <b>Some</b> Understands how search engines rank search results Understands how to construct static web pages using HTML and CSS Understands data transmission between digital	Monday: Training Day Tuesday: New students in Wednesday: All students in
	2	10/9/18				
	3	17/9/18				
	4	24/9/18				
	5	1/10/18	<b>Theme 2 Rule of Law</b> (responsibility)			
	6	8/10/18				
	7	15/10/18				Friday: Training Day
	8	22/10/18				

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					computers over networks, including the internet i.e. IP addresses and packet switching.	
			<b>Half Term</b>			
<b>Autumn 2</b>	9	5/11/18	<b>Theme 3 <u>Optimism</u></b> (learning from mistakes)	<b>How Computers Work (Hardware and Processing)</b>	<p><b>All</b> Knows that computers collect data from various input devices Including sensors and application software. Understands the difference between hardware and application software Understands their roles within a computer system.</p> <p><b>Most</b> Understands why and when computers are used. Understands the main functions of the operating system Knows the difference between physical, wireless and mobile networks</p> <p><b>Some</b> Recognises and understands the function of the main internal parts of basic computer architecture Understands the concepts behind the fetch-execute cycle Knows there is a range of operating systems and application software for the same hardware</p>	
	10	12/11/18				Friday: Data Point Deadline
	11	19/11/18				
	12	26/11/18				
	13	3/12/18	<b>Theme 4 <u>Tolerance</u></b> (political and cultural awareness)			
	14	10/12/18				
	15	17/12/18				Friday: Christmas Holidays

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				<b>Christmas</b>		
<b>Spring 1</b>	16	7/1/19	<b>Theme 5</b> <u><b>Devotion</b></u> (work ethic)	<b>Data and Data Representation</b>	<b>All</b> Understands the difference between data and information. Knows why sorting data in a flat file can improve searching for information Uses filters or can perform single criteria searches for information  <b>Most</b> Performs more complex searches for information e.g. using Boolean and relational operators Analyses and evaluates data and information recognises that poor quality data leads to unreliable results, and inaccurate conclusions.  <b>Some</b> Knows that digital computers use binary to represent all data Understands how bit patterns represent numbers and images. Knows that computers transfer data in binary. Understands the relationship between binary and file size (uncompressed). Defines data types: real numbers and Boolean Queries data on one table using a typical query	
	17	14/1/19				
	18	21/1/19				
	19	28/1/19				
	20	4/2/19				
	21	11/2/19	<b>Theme 6</b> <u><b>Versatility</b></u> (flexibility and adaptability)			

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					language.	
<b>Half Term</b>						
<b>Spring 2</b>	22	25/2/19	<b>Theme 7 Compassion (communication skills)</b>	<b>Algorithms</b>	<p><b>All</b>            Designs solutions (algorithms) that use repetition and two-way selection i.e. if, then and else            Uses diagrams to express solutions            Uses logical reasoning to predict outputs, showing an awareness of inputs.</p> <p><b>Most</b>            Shows an awareness of tasks best completed by humans or computers            Designs solutions by decomposing a problem and creates a sub-solution for each of these parts (decomposition)            Recognises that different solutions exist for the same problem.</p> <p><b>Some</b>            Understands that iteration is the repetition of a process such as a loop            Recognises that different algorithms exist for the same problem            Represents solutions using a structured notation            Can identify similarities and differences in</p>	Monday: Training Day
	23	4/3/19				Careers Week
	24	11/3/19				Friday: Data Point Deadline
	25	18/3/19				
	26	25/3/19				
	27	1/4/19	<b>Theme 8 Innovation (problem solving/ critical thinking skills)</b>			

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					situations and can use these to solve problems (pattern recognition).	
			<b>Easter</b>			
<b>Summer 1</b>	28	22/4/19		<b>Programming Space Project (Microbits)</b>	<p><b>All</b> Creates programs that implement algorithms to achieve given goals Declares and assigns variables. Uses post-tested loop e.g. 'until', and a sequence of selection statements in programs, including an if, then and else statement.</p> <p><b>Most</b> Understands the difference between, and appropriately uses if and if, then and else statements. Uses a variable and relational operators within a loop to govern termination Designs, writes and debugs modular programs using procedures Knows that a procedure can be used to hide the detail with sub-solution (procedural abstraction).</p> <p><b>Some</b> Understands that programming bridges the gap between algorithmic solutions and computers</p>	Monday: Bank Holiday
	29	29/4/19				
	30	6/5/19	<b>Theme 9 Democracy (listening and teamwork skills)</b>			Monday: Bank Holiday Tuesday: Training Day
	31	13/5/19				
	32	20/5/19				

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					<p>Has practical experience of a high-level textual language, including using standard libraries when programming</p> <p>Uses a range of operators and expressions e.g. Boolean, and applies them in the context of program control.</p> <p>Selects the appropriate data types</p>	
<b>Half Term</b>						
<b>Summer 2</b>	33	3/6/19	<b>Theme 10</b>  <b>Respect</b> (networking and interpersonal skills)	<b>Programming</b>	As Summer 1	
	34	10/6/19				Wednesday: Data Point Deadline
	35	17/6/19				
	36	24/6/19		<b>Creative Project (Information Technology)</b>	<b>All</b> Collects, organises and presents data and information in digital content Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience e.g. blogging Makes appropriate improvements to solutions based on feedback received and can comment on the success of the solution.	
	37	1/7/19				Thursday: Transition Day 1
	38	8/7/19	<b>Theme 11</b>  <b>Individual Liberty</b> (independence)			Thursday: Transition Day 2
	39	15/7/19				Activity Week
				<b>Most</b> Makes judgements about digital content when evaluating and repurposing it for a given audience		

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					<p>Recognises the audience when designing and creating digital content</p> <p>Understands the potential of information technology for collaboration when computers are networked</p> <p>Uses criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution, and future solutions.</p> <p><b>Some</b></p> <p>Evaluates the appropriateness of digital devices, internet services and application software to achieve given goals</p> <p>Recognises ethical issues surrounding the application of information technology beyond school</p> <p>Designs criteria to critically evaluate the quality of solutions, uses the criteria to identify improvements and can make appropriate refinements to the solution.</p>	
	40	22/7/19				Wednesday, Thursday, Friday: Holiday Club
			<b>Theme 12</b> <b>Happiness</b>		<b>Summer</b>	

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			(stress and conflict management)			

### Notes

Information Technology objectives will also be assessed throughout each project where appropriate