



Year 3		Subject: Computing	
Knowledge and Understanding	<p>Autumn 1 Topic:</p> <p>We are Programmers - programming in animation</p>	<p>Spring 1 Topic:</p> <p>We are Presenters - videoing performance</p> <ul style="list-style-type: none"> . understand the qualities of effective video, such as the importance of narrative, consistency, perspective and scene length 	<p>Summer 1 Topic:</p> <p>We are Communicators - communicating safely on the internet</p> <ul style="list-style-type: none"> . be aware of broader issues surrounding email, including 'netiquette' and 'e-safety'
	<p>Autumn 2 Topic:</p> <p>We are Bug Fixers - finding and correcting bugs in programs</p> <ul style="list-style-type: none"> . increase their knowledge and understanding of scratch . recognise a number of common types of bugs in software 	<p>Spring 2 Topic:</p> <p>We are Network Engineers - exploring computer networks, including the internet</p> <ul style="list-style-type: none"> . understand the physical hardware connections necessary for computer networks to work . understand some features of internet protocols . understand some diagnostic tools for investigating network connections 	<p>Summer 2 Topic:</p> <p>We are Opinion Pollsters - collecting and analysing data</p> <ul style="list-style-type: none"> . understand some elements of survey design . understand some ethical and legal aspects of online data collection
<p>Additional:</p> <p>e-Safety - first week of each half term. Activities may include: https://www.thinkuknow.co.uk/8_10/cybercafe/Cyber-Cafe-Base/ ; http://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew ; or an issue relevant to your class.</p>			



Y3 Progression	<p><u>Skills</u></p> <p>Autumn 1:</p> <ul style="list-style-type: none">. create an algorithm for an animated scene in the form of a storyboard. write a program in Scratch to create the animation. correct mistakes in their animation programs <p>Autumn 2:</p> <ul style="list-style-type: none">. develop a number of strategies for finding errors in programs. build up resilience and strategies for problem solving <p>Spring 1:</p> <ul style="list-style-type: none">. gain skills in shooting live video, such as framing shots, holding the camera steady and reviewing. edit video, including adding narration and editing clips by setting in / out points <p>Spring 2:</p> <ul style="list-style-type: none">. build on prior skills. navigate school folder system <p>Summer 1:</p> <ul style="list-style-type: none">. develop a basic understanding of how email works. gain skills in using email. work collaboratively with a remote partner <p>Summer 2:</p> <ul style="list-style-type: none">. use the web to facilitate data collection <p>Gain skills in using charts to analyse data</p> <ul style="list-style-type: none">. gain skills in interpreting results
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Year 4		Subject: Computing	
Knowledge and Understanding	<p>Autumn 1 Topic:</p> <p>We are Software Developers - developing a simple educational game</p> <p>. understand and use variables</p>	<p>Spring 1 Topic:</p> <p>We are Musicians - producing digital music</p> <p>. develop and awareness of how their composition can enhance work in other media</p>	<p>Summer 1 Topic:</p> <p>We are Co-Authors - producing a Wiki</p> <p>. understand the conventions for collaborative online work, particularly in Wikis</p> <p>. be aware of their responsibilities when editing other people's work</p>
	<p>Autumn 2 Topic:</p> <p>We are Toy Designers - prototyping an interactive toy</p> <p>. understand different forms of input and output (such as sensors, switches, motor, lights and speakers)</p>	<p>Spring 2 Topic:</p> <p>We are HTML Editors - editing and writing HTML</p> <p>. understand some technical aspects of how the internet makes the web possible</p>	<p>Summer 2Topic:</p> <p>We are Meteorologists - presenting the weather</p> <p>. understand different measurement techniques for weather, both analogue and digital</p>
<p>Additional:</p> <p>e-Safety - first week of each half term. Activities may include: https://www.thinkuknow.co.uk/8_10/cybercafe/Cyber-Cafe-Base/ ; http://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew ; or an issue relevant to your class.</p>			



Progression	<u>Skills</u>
	Autumn 1: . developing an educational computer game using selection and repetition . start to debug computer programs
	Autumn 2: . design and make an onscreen prototype of a computer controlled toy . design, write and debug the control and monitoring program for their toy
	Spring 1: . use one or more programs to edit music . create and develop a musical composition, refining their ideas through reflection and discussion . develop collaboration skills
	Spring 2: . use HTML tags for elementary mark up . use hyperlinks to connect ideas and sources . code up a simple web page with useful content
	Summer 1: . become familiar with Wikipedia including potential problems associated with its use . practise research skills . write for a target audience using a Wiki tool . develop collaborative and proofreading skills
	Summer 2: . use computer based data logging to automate the recording of some weather data . use spreadsheets to create charts . analyse data, explore inconsistencies in data and make predictions . practise using presentation software (and optional video)



Ravensdale Junior School

Knowledge, understanding and Progression of Skills in Foundation Subjects



Year 5		Subject: Computing	
Knowledge and Understanding	<p>Autumn 1 Topic: We are Game Developers - Developing an Interactive Game</p>	<p>Spring 1 Topic: We Are Artists - Fusing Geometry and Art</p> <ul style="list-style-type: none"> . develop an appreciation of the links between geometry and art . become familiar with the tools and techniques of a vector graphics package . develop an understanding of turtle graphics . develop an awareness of computer generated art, in particular, fractal based landscapes 	<p>Summer 1 Topic: We Are Bloggers - Sharing Experiences and Opinions</p> <ul style="list-style-type: none"> . become familiar with blogs as a medium and a genre of writing . develop a critical, reflective view of a range of media including text
	<p>Autumn 2 Topic: We are Cryptographers - Cracking Codes</p> <ul style="list-style-type: none"> . understand the need for private information to be encrypted . appreciate the need to use complex passwords and keep them secure . have some understanding of how encryption works on the web 	<p>Spring 2 Topic: We Are Web Developers - Creating a Website about Cyber Safety</p> <ul style="list-style-type: none"> . understand some elements of how search engines select and rank results . question the plausibility and quality of information . develop their understanding of e-safety and responsible use of technology 	<p>Summer 2 Topic: We Are Architects - Creating a Virtual Space</p> <ul style="list-style-type: none"> . understand the work of architects, designers and engineers working in 3D . develop greater aesthetic awareness



Additional:

e-Safety - first week of each half term. Activities may include: https://www.thinkuknow.co.uk/8_10/cybercafe/Cyber-Cafe-Base/ ; <http://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew> ; or an issue relevant to your class.



Progression	<p>Skills:</p> <p>Autumn 1:</p> <ul style="list-style-type: none">. create original artwork and sound for a game. design and create a computer program for a computer game, which uses sequence, selection, repetition and variables. detect and correct errors in their computer game <p>Autumn 2:</p> <ul style="list-style-type: none">. be familiar with semaphore and morse code. encrypt and decrypt messages in simple ciphers <p>Spring 1:</p> <ul style="list-style-type: none">. experiment with the tools available, refining and developing their work as they apply their own criteria to evaluate it and receive feedback from their peers <p>Spring 2:</p> <ul style="list-style-type: none">. develop their research skills to decide what information is appropriate. develop and refine their ideas and text collaboratively <p>Summer 1:</p> <ul style="list-style-type: none">. create a sequence of blog posts on a theme. incorporate additional media. comment on the posts of others <p>Summer 2:</p> <ul style="list-style-type: none">. develop familiarity with a simple CAD (computer aided design) tool
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	. develop spatial awareness by exploring and experimenting with a 3D virtual environment
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	Year 6	Subject: Computing		
Knowledge and Understanding	Autumn 1 Topic: We are App Planners - Planning the Creation of a Mobile App . develop an awareness of the capabilities of smartphones and tablets . understand geolocation, including GPS . identifying interesting solvable problems	Spring 1 Topic: We Are Market Researchers - Researching the App Market	Summer 1 Topic: We are App Developers - Developing a Simple Mobile Phone App . become familiar with another programming toolkit or development platform	
	Autumn 2 Topic: We Are Project Managers - Planning the Creation of a Mobile APP . identify their existing talents and plan how they can develop further knowledge and skills . consider strategies to ensure the quality of a collaborative project	Spring 2 Topic: We are Interface Designers - Designing an Interface for an App	Summer 2 Topic: We Are Marketeers - Creating video and web copy for a mobile phone app . consider key marketing messages, including identifying a unique selling point . further develop knowledge, skills and understanding in relation to creating a website	



Additional:

e-Safety - first week of each half term. Activities may include: https://www.thinkuknow.co.uk/8_10/cybercafe/Cyber-Cafe-Base/ ; <http://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew> ; or an issue relevant to your class.



Progression	<p>Skills:</p> <p>Autumn 1:</p> <ul style="list-style-type: none">. evaluate competing products. pitch a proposal for a smartphone or tablet app <p>Autumn 2:</p> <ul style="list-style-type: none">. scope a project to identify different components that must be successfully combined. identify the component tasks of a project and develop a timeline to track progress. identify the resources they'll need to accomplish a project. use web based research skills to source tools, content and other resources <p>Spring 1:</p> <ul style="list-style-type: none">. create a set of good survey questions. analyse the data obtained from a survey. work collaboratively to plan questions. conduct an interview or focus group. analyse and interpret the information obtained from interviews or a focus group. present their research findings <p>Spring 2:</p> <ul style="list-style-type: none">. work collaboratively to design the app's interface. use wireframing tools to create a design prototype of their app. develop or source the individual interface components (media assets) they will use. address accessibility and inclusion issues. document their design decisions and the process they've followed
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Summer 1:

- . import existing media assets to their project
- . write down the algorithms for their app
- . program, debug and refine the code for their app
- . thoroughly test and evaluate their app

Summer 2:

- . develop a printed flyer or brochure incorporating text and images
- . further develop skills relating to shooting and editing video