

		Application of skill and Knowledge			
KS1 Cultural Capital		<ul style="list-style-type: none"> <li><input type="checkbox"/> understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</li> <li><input type="checkbox"/> create and debug simple programs</li> <li><input type="checkbox"/> use logical reasoning to predict the behaviour of simple programs</li> <li><input type="checkbox"/> use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li><input type="checkbox"/> recognise common uses of information technology beyond school</li> <li><input type="checkbox"/> 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.</li> </ul>			
Skill taught and Curriculum link					<p>End point for KS2</p> <ul style="list-style-type: none"> <li>♣ design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>♣ use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>♣ use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>♣ 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</li> <li>♣ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>♣ 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</li> <li>♣ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>
		<p>Year 3</p> <ul style="list-style-type: none"> <li>- Introduction to Computing</li> <li>- Multimedia and word processing</li> <li>- Graphics</li> <li>- Kodu</li> <li>- Network engineers</li> </ul> <p>Algorithms and coding - Scratch</p>	<p>Year 4</p> <ul style="list-style-type: none"> <li>- Multimedia and word processing (Autumn)</li> <li>- Research following straight lines of enquiry (Autumn)</li> <li>- Microsoft excel (Autumn – weather topic)</li> </ul> <p>Algorithms and coding (Spring - Scratch and Summer – Turtle Academy)</p>	<p>Year 5</p> <ul style="list-style-type: none"> <li>- Prezi</li> <li>- We are Cryptographers</li> <li>- Code.org</li> <li>- Algorithms and coding</li> <li>- Photo editing/artistic editing</li> <li>- Audio editing</li> </ul> <p>We are bloggers</p>	<p>Year 6</p> <ul style="list-style-type: none"> <li>- Microsoft excel</li> <li>- AppShed</li> <li>- Powerpoint</li> </ul> <p>Algorithms and coding</p>
<p><b>Computer science</b></p> <ul style="list-style-type: none"> <li>- Explain what programming is</li> <li>- How an algorithm works</li> <li>- Control an object to move along a route</li> </ul>	Skill	<ul style="list-style-type: none"> <li>• create a new land in Kodu</li> <li>• program a character/sprite to follow a path</li> <li>• create a simple game</li> <li>• know how simple algorithms work</li> <li>• create a game where characters interact with each other</li> <li>• To animate a Sprite using Scratch</li> </ul>	<ul style="list-style-type: none"> <li>• test an algorithm and debug if necessary</li> <li>• explain how simple algorithms work</li> <li>• use the repeat function to write an algorithm to draw a regular polygon</li> <li>• create code to repeat sections of my program</li> </ul>	<ul style="list-style-type: none"> <li>• Transmit information in semaphore</li> <li>• Use ciphers to create and crack codes</li> <li>• use coding to complete a guided task</li> <li>• create, find and edit the assets needed for a game</li> <li>• to create a prototype of a game</li> <li>• be able to de-bug a program</li> </ul>	<p>(design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts)</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <ul style="list-style-type: none"> <li>• find a problem to solve with an app</li> <li>• Solve a problem using excel</li> </ul>

<ul style="list-style-type: none"> <li>- Commands to animate pictures</li> <li>- Conditional events in a program</li> <li>- Variable in a program</li> <li>- Program a complex game</li> <li>- Detect and correct errors in a program (debug)</li> <li>- Design and create a program</li> <li>- Identify computer components</li> <li>- Understand how a computer stores data</li> <li>- Uses of technology</li> <li>- Simulations</li> <li>- Impact of technology</li> <li>- How the internet works</li> <li>- Intranet – what is the difference</li> <li>- Binary numbers</li> <li>- History of computing</li> </ul>	Knowledge	<ul style="list-style-type: none"> <li>• know what Kodu is</li> <li>• know how to program a character to follow a path</li> <li>• know how games are formulated</li> <li>• know what a network is.</li> <li>• Understand how the internet works. <b>understand computer networks including the internet</b></li> </ul>	<ul style="list-style-type: none"> <li>• Design and create their own algorithms and assess their own learning – adding each lesson</li> <li>• develop the interface of the game.</li> <li>•</li> <li>• Know what codes to write in for relevant directions.</li> </ul>	<ul style="list-style-type: none"> <li>• able to test and evaluate a game – <b>detect and correct errors in algorithms and programs</b></li> <li>• Know why and when semaphores were and are used – how this links to the input on a computer system</li> <li>• Know why and when Morse code was used and how this is similar to the binary system for a computer to input and output data/information</li> <li>• The use of codes and why they were/are used</li> <li>• <b>Understand how the internet works. understand computer networks including the internet – flow chart?</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>How apps work</b></li> </ul>
<p><b>Information technology</b></p> <ul style="list-style-type: none"> <li>- Type quickly and correctly</li> <li>- Type and design a printable document</li> <li>- Text using 'fancy' effects</li> <li>- Word collage</li> <li>- Photo collage</li> <li>- Mind map</li> <li>- Paint a picture</li> <li>- Picture using drawing tools</li> <li>- Create music</li> <li>- Audio recording</li> <li>- Edit a digital photo</li> <li>- Animations</li> <li>- Multimedia video producing</li> <li>- Multimedia e-book</li> <li>- Interactive activity</li> <li>- On-screen presentation</li> </ul>	Skill	<p><input type="checkbox"/> use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <ul style="list-style-type: none"> <li>• Looking at internet pages for research and navigating your way through these.</li> <li>• To use a search engine.</li> <li>• Creating a poster in word – <i>Internet safety – how to report concerns to someone in school</i></li> </ul>	<ul style="list-style-type: none"> <li>• To be able to cut and paste information, text, pictures or diagrams from one place to another</li> <li>• record data using a spreadsheet – <b>collect and present data and information</b></li> <li>• Carry out a webquest to answer questions about WW1</li> <li>• create a graph in Excel to represent data</li> <li>• research the climate conditions in a European country</li> <li>• Create music using technology (Music)</li> <li>• Using PowerPoint – Being able to research, <b>use and find appropriate information and photographs online to explain who and what childline is and how they can help. (How do childline keep us safe online?)</b></li> </ul>	<ul style="list-style-type: none"> <li>• Touch typing to increase speed of input</li> <li>• Presenting information in a clear and cohesive manner which is appropriate to an audience (Prezi)</li> <li>• Evaluate and improve/reflect upon presentations in order to improve our own</li> <li>• investigate photo editing effects (<b>Maya topic</b>)</li> <li>• Use Google Classroom to write a blog post (<b>Link to IOW trip</b>) <i>select, use and combine a variety of software</i></li> <li>• post suitable blog comments</li> <li>• add images to a blog post</li> <li>• Use <b>audacity</b> (software) to warp existing sound effects (<b>Link to IOW trip</b>)</li> <li>• Record my own sound effects to make my own radio advert</li> <li>• Warp and edit these effects appropriately and effectively</li> <li>• <b>Children to create a booklet on Publisher about CEOPS and how they support children online identify a range of ways to</b></li> </ul>	<p><i>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</i></p> <ul style="list-style-type: none"> <li>• Using the functions of a spreadsheet to display information/data</li> <li>• Using formulas on spreadsheet to present data</li> <li>• integrate words, images and sounds imaginatively for different audiences and purposes</li> <li>• select from a variety of ICT applications to present text images and sounds effectively and communicate specific information and ideas for a specific audience</li> <li>• understand the importance of evaluation and adaptation of individual features to enhance the overall presentation</li> <li>• generate, amend and combine digital images from different sources for a specific audience or task</li> <li>• create a presentation to pitch the app idea</li> </ul>

<ul style="list-style-type: none"> <li>- Create a website</li> <li>- Handling data</li> <li>- Creating a spreadsheet</li> </ul>				<p>report concerns about content and contact.</p>	<ul style="list-style-type: none"> <li>• Create an animation of all the different ways that children are protected and kept safe online – using knowledge and understanding from all year groups</li> </ul>
	Knowledge	<ul style="list-style-type: none"> <li>• What an animation is</li> <li>• Knowing why</li> <li>• How music is created using technology (Music)</li> </ul>	<ul style="list-style-type: none"> <li>• Know what wikis are and understand what they can be used for</li> <li>• features of good page design and multimedia presentations</li> <li>• When we would need to 'cut' something</li> <li>• When we would need to 'paste' something</li> <li>• What it means to format a picture</li> <li>• How to use spreadsheet and why it may be chosen as a program for recording data</li> <li>• How music is created using technology (Music)</li> </ul>	<ul style="list-style-type: none"> <li>• Know when touch typing is important and to understand why we learn it – built upon practice throughout the school (1 lesson)</li> <li>• what makes a good blog (Link to IOW trip)</li> <li>• Listen to a range of adverts and identify features (Link to IOW trip)</li> <li>• Know how to use audacity to edit sounds</li> <li>• Know how to warp sounds and sound effects on audacity</li> </ul>	<ul style="list-style-type: none"> <li>• know that images from different sources (stills, video, graphics, animation) are used to enhance a presentation or communicate an idea</li> <li>• Knowing what spreadsheets are and the functions of a spreadsheet</li> <li>• Knowing different formulas you can use on spreadsheet to assist data input/output</li> <li>• Why people use apps</li> <li>•</li> </ul>
<p><b>Digital Literacy</b></p> <ul style="list-style-type: none"> <li>- using QR codes</li> <li>- reading URLs</li> <li>- how to search effectively</li> <li>- exploring a virtual map</li> <li>- communicating online</li> <li>- staying safe online</li> </ul>	Skill	<ul style="list-style-type: none"> <li>• The importance of password</li> <li>• DIGITAL LITERACY DAY.</li> </ul>	<p>Not applicable explicitly – link to Digital Literacy Week.</p> <ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Create/generate a strong password</li> <li>• Being able to navigate through Google Classroom</li> <li>• Being able to use Google Earth (link to Prezi/Maya)</li> <li>• Create a blog</li> <li>•</li> </ul>	<p>use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <ul style="list-style-type: none"> <li>• Research points of view about a historical event</li> <li>• Use the internet to compare points of view and discuss bias</li> <li>• Working safely on line</li> <li>• <b>Creating an acceptable use policy to promote children's use online</b></li> <li>• recognise acceptable/unacceptable behaviour;</li> </ul>
	Knowledge	<ul style="list-style-type: none"> <li>• The importance of password</li> <li>• DIGITAL LITERACY DAY.</li> </ul>	<ul style="list-style-type: none"> <li>• How to stay safe on the internet</li> <li>• How to communicate safely on the internet.</li> <li>• To know what is right and wrong on the internet.</li> <li>• How search results are effectively ranked appreciate how results are selected and ranked</li> </ul>	<ul style="list-style-type: none"> <li>• Why do we have strong passwords (out in the 'real world')</li> <li>• How to take a screen shot and input into a ppt</li> <li>• Edit photos, create art work and pixilate images (Maya topic link)</li> <li>• Digital literacy day – e-safety activities</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to search effectively using key words</li> <li>• Know what a URL is</li> <li>• Understand how a search is driven by algorithms</li> <li>• School use on internet policy</li> <li>• Appropriateness of sharing personal information</li> <li>• Action if inappropriate material is found</li> <li>• Not sharing passwords</li> </ul>

Computational thinking: 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

Digital literacy

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

E-Safety

use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

**computer science:**

**Algorithm – Scratch**

**Programming**

**Data handling – excel / spreadsheets / Google Sheets**

**Branching databases, graphs, conversion tables, formulas, pie charts, budget sheets, spotting errors in databases**

**Networks**

**Search engines**

**Simulations**

**File structure – hard drives / google classroom**

**Cookies – what are they**

**Creating a website**

<https://sites.google.com/a/wallacefields-jun.surrey.sch.uk> - Google sites