

## Computing Whole School Curriculum Map – 2021/2022

Year Group:	Autumn Term:	Spring Term:	Summer Term:
Reception:	<p><b>ALL ABOUT ME</b></p> <p>Looking at how information can also be found from the computers. – Children will be taught the parts of a computer and the purpose of using a computer. – begin to develop the skills are logging on and off.</p>	<p><b>TRADITIONAL TALES AND FESTIVALS</b></p> <p>Computing – how to log on and log off; begin using Espresso Computer Driving Licence; Purple Mash</p> <p>Bee-bots – programming and coding</p>	<p><b>CHANGES OVER TIME</b></p> <p>Technology – purple mash and espresso.</p>
Year 1:	<p><b>ME, MYSELF AND I</b></p> <p>Digital literacy, introducing children to aspects of computing such as manipulating data, using the computer safely and launching applications.</p> <p style="text-align: center;"><u>Key Skills</u> <u>Information Technology</u></p> <p>I can complete a simple task on a computer or tablet by following instructions. I know I need to save my work. I can load my digital work (with some help) I can enter text in to my work. I understand that you can enter numbers in to a computer (e.g. to create a pictogram).</p> <p><u>Keeping Safe</u> I know some basic internet safety rules. I can follow the school's safer internet rules. I can use passwords for TT Rockstars, Mathletics, Spelling Shed etc. I know that personal information should not be shared online.</p>	<p><b>1<sup>ST</sup> HALF TERM- KATIE MORAG</b> <b>2<sup>ND</sup> HALF TERM- ON THE FARM</b></p> <p>Organise, store, retrieve &amp; manipulate data.</p> <p>Communicate online safely and respectfully Recognise uses of IT outside of school</p> <p><u>Key Skills</u> <u>Information Technology</u> I can complete a simple task on a computer or tablet by following instructions I know I need to save my work I can load my digital work (with some help) I can enter text in to my work I understand that you can enter numbers in to a computer (e.g. to create a pictogram)</p> <p><u>Digital Literacy</u> I can find different types of information from different sources. I can recognise digital technology used in everyday life. I can start to understand that some work is online (internet based) and some offline.</p>	<p><b>BUCKETS AND SPADES</b></p> <p>Understand use of algorithms and coding.</p> <p>Write &amp; test simple programs.</p> <p><u>Key Skills</u> <u>Computer Science</u> I understand and follow instructions to make something happen so it works. I can control the movement of a character using single commands (e.g. forward or turn). I can control the movement of a character using MORE THAN ONE command (forward then turn) to make it work well.</p> <p><u>Keeping Safe</u> I know some basic internet safety rules. I can follow the school's safer internet rules. I can use passwords for TT Rockstars, Mathletics, Spelling Shed etc. I know that personal information should not be shared online. I can use a password to access a secure network.</p>

## Computing Whole School Curriculum Map – 2021/2022

	<p>I can use a password to access a secure network. I know I must tell a trusted adult if anyone tries to talk to me online.</p>	<p><u>Keeping Safe</u> I know some basic internet safety rules. I can follow the school's safer internet rules. I can use passwords for TT Rockstars, Mathletics, Spelling Shed etc. I know that personal information should not be shared online. I can use a password to access a secure network. I know I must tell a trusted adult if anyone tries to talk to me online.</p>	<p>I know I must tell a trusted adult if anyone tries to talk to me online.</p>
<p>Year 2:</p>	<p><b>VISITING LONDON WITH PADDINGTON BEAR</b></p> <p><b>Computer Science</b> <b>Algorithms and de-bugging programs.</b></p> <ul style="list-style-type: none"> <li>- Predicting outcomes of coding</li> <li>- Repeated instructions to gain desired outcome</li> <li>- Code right angle turns</li> </ul> <p><b>Digital Literacy</b> <b>IT- Creating content, save and retrieve</b></p> <ul style="list-style-type: none"> <li>- Christmas lists, London pictures (geography link), Christmas cards</li> </ul> <p><b>Keeping safe</b> <b>Keeping safe</b></p> <ul style="list-style-type: none"> <li>- Internet safety rules</li> <li>- Use of passwords for TT Rockstars, Mathletics, Spelling Shed etc.</li> <li>- Understand different forms of communication (emails, online forums)</li> <li>- Understanding pop-ups may take them away from a main site.</li> </ul>	<p><b>AROUND THE WORLD IN 80 DAYS</b></p> <p><b>Computer Science</b></p> <ul style="list-style-type: none"> <li>- Understand that an algorithm is a list of instructions that must be done in the right order.</li> <li>- Create a list of instructions to make things happen really well (eg on device or App)</li> </ul> <p><b>IT- Creating content, save and retrieve</b></p> <ul style="list-style-type: none"> <li>- Save and load (retrieve) my work on a range of devices (eg laptops and tablets).</li> <li>- Change what is in my work and the look of my work (ie change the format)</li> </ul> <p><b>Digital Literacy (link to research)</b></p> <ul style="list-style-type: none"> <li>- Select appropriate buttons to navigate web sites or stored information.</li> <li>- Begin to understand that computers use icons, menus, hyperlinks to provide information and instructions.</li> <li>- I can begin to understand that not all the content on web sites is true (eg spoof websites).</li> </ul> <p><b>Keeping safe</b></p>	<p><b>LOOK LOCAL, THINK GLOBAL</b></p> <p><b>Computer Science - algorithms and de-bugging programs.</b></p> <ul style="list-style-type: none"> <li>- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous of instructions.</li> </ul> <p><b>IT - creating content, save and retrieve.</b></p> <ul style="list-style-type: none"> <li>- Save and load (retrieve) my work, linked to Espresso Coding, on a range of devices (eg laptops and tablets).</li> <li>- Change what is in my work and the look of my work (ie change the format)</li> </ul> <p><b>Digital Literacy (link to research)</b></p> <ul style="list-style-type: none"> <li>- Find information on a website</li> <li>- Click links in a website</li> <li>- Print a web page to use as a resource</li> <li>- Experiment with text, pictures and animation to make a simple slide show</li> <li>- Word process a piece of text</li> </ul>

## Computing Whole School Curriculum Map – 2021/2022

		<ul style="list-style-type: none"> <li>- Use search engine agreed by the school.</li> <li>- Use the internet for learning and retrieving information.</li> <li>- Know that bookmarking is a way to find safe sites again.</li> <li>- Know it's not always possible to copy pictures and text from protected sites.</li> </ul>	<ul style="list-style-type: none"> <li>- Insert/delete a word using the mouse and arrow keys</li> <li>- Highlight text to change its format (B, U, I)?</li> </ul> <p><b>Keeping safe</b></p> <ul style="list-style-type: none"> <li>- Keeping safe online agenda.</li> <li>- Understand some of the dangers of the online world.</li> <li>- Understand that personal information should not be shared online.</li> <li>- Act if they find or see something inappropriate</li> <li>- Recognise advertising on websites and learn to ignore it.</li> </ul>
Year 3/4	<p><b>CYCLE A</b>  <b>Digital literacy</b>  <b>Information technology</b>  <b>Computer science</b></p> <p><b>Algorithms and Programs</b></p> <ul style="list-style-type: none"> <li>• Experiment with variables to control models.</li> <li>• Make turns specifying the degrees.</li> <li>• Make accurate predictions about the outcome of a program they have written.</li> </ul> <p><b>Using the Internet</b></p> <ul style="list-style-type: none"> <li>• Find relevant information by browsing a menu.</li> <li>• Search for an image, then copy and paste it into a document.</li> <li>• Use 'Save picture as' to save an image to the computer.</li> <li>• Copy and paste text into a document.</li> <li>• Use note making skills to decide what text to copy.</li> </ul> <p><b>Communicating</b></p> <ul style="list-style-type: none"> <li>• Know the benefits of ICT to send messages and to communicate.</li> </ul> <p>Use the automatic spell checker to edit spellings.</p>	<p><b>CYCLE A</b>  <b>Digital literacy</b>  <b>Information technology</b>  <b>Computer science</b></p> <p><b>Algorithms and programs:</b></p> <ul style="list-style-type: none"> <li>• Experiment with variables to control models</li> <li>• Use 90 degree and 45 degree turns</li> <li>• Give an onscreen robot specific directional instructions that takes them from x to y</li> <li>• Write more complex programs</li> </ul> <p><b>Presentation:</b></p> <ul style="list-style-type: none"> <li>• Create a presentation that moves from slide to slide and is aimed at a specific audience</li> <li>• Combine text, images and sound and show awareness of audience</li> <li>• Manipulate text, underline text, centre text, change font and size and save text to a folder</li> <li>• Use animation</li> </ul> <p><b>Communicating:</b></p> <ul style="list-style-type: none"> <li>• Use spell checker</li> </ul> <p><b>Using the internet:</b></p> <ul style="list-style-type: none"> <li>• Find relevant information by using a menu</li> <li>• Search for image then copy and paste into a document</li> <li>• Use 'Save picture as' to save an image to the computer</li> <li>• Copy and paste text into a document</li> <li>• Use note-making skills to decide that text to copy</li> <li>• Open a link to a new window</li> <li>• Open a document/PDF and view it</li> </ul>	<p><b>CYCLE A</b>  <b>Information technology</b></p> <p><b>Data Retrieving and Organising:</b></p> <ul style="list-style-type: none"> <li>• Choose images and download into a file</li> <li>• Copy graphics from a range of sources and paste into a desktop publishing program</li> <li>• Use photo editing software to crop photos and add effects</li> </ul> <p><b>Databases:</b></p> <ul style="list-style-type: none"> <li>• Sort and search a database to answer simple questions</li> <li>• Recognise what a spreadsheet is</li> <li>• Use the terms: cell, rows and columns</li> <li>• Enter data, highlight it and make bar charts</li> </ul>

## Computing Whole School Curriculum Map – 2021/2022

	<p><b>CYCLE B</b>  <b>Digital literacy</b>  <b>Information technology</b>  <b>Computer science</b></p> <p><b>Information Technology:</b></p> <ul style="list-style-type: none"> <li>• Use email address book</li> <li>• Open and send an attachment</li> <li>• To appreciate the benefits of ICT to send messages and to communicate</li> </ul> <p><b>Computer science:</b></p> <ul style="list-style-type: none"> <li>• Experiment with variables to control models</li> <li>• Use 90 degree and 45 degree turns</li> </ul> <p><b>Databases:</b></p> <ul style="list-style-type: none"> <li>• Input data into a prepared database</li> </ul> <p><b>Using the internet:</b></p> <ul style="list-style-type: none"> <li>• Use a search engine to find a specific website</li> <li>• Use tabbed browsing to open 2 or more web pages at the same time</li> </ul>	<p><b>CYCLE B</b>  <b>Digital literacy</b>  <b>Information technology</b>  <b>Computer science</b></p> <p><b>Algorithms and Programs</b></p> <ul style="list-style-type: none"> <li>• Give an on-screen robot specific directional instructions that takes them from x to y?</li> <li>• Make accurate predictions about the outcome of a program they have written.</li> <li>• Use repeat instructions to draw regular shapes on screen, using commands.</li> </ul> <p><b>Database</b></p> <ul style="list-style-type: none"> <li>• Input data into a prepared database.</li> <li>• Sort and search a database to answer simple questions.</li> <li>• Recognise what a spread sheet is.</li> <li>• Use the terms 'cells', 'rows' and 'columns'.</li> <li>• Enter data, highlight it and make bar charts.</li> </ul> <p><b>Using the Internet</b></p> <ul style="list-style-type: none"> <li>• Find relevant information by browsing a menu.</li> <li>• Search for an image, then copy and paste it into a document.</li> <li>• Use 'Save picture as to save an image to the computer.</li> <li>• Copy and paste text into a document?</li> </ul>	<p><b>CYCLE B</b>  <b>Digital literacy</b>  <b>Information technology</b>  <b>Computer science</b></p> <p><b>Digital literacy</b>  <b>Information technology</b>  <b>Computer science</b></p> <p><b>Algorithms and Programs</b></p> <ul style="list-style-type: none"> <li>• Experiment with variables to control models.</li> <li>• Make turns specifying the degrees.</li> <li>• Make accurate predictions about the outcome of a program they have written.</li> </ul> <p><b>Presentation</b></p> <ul style="list-style-type: none"> <li>• Create a lengthy presentation that moves from slide to slide and is aimed at a specific audience.</li> <li>• Insert sound recordings into a multi-media presentation</li> <li>• Manipulate text, underline text, centre text, change font and size and save text to a folder.</li> </ul> <p><b>Using the Internet</b></p> <ul style="list-style-type: none"> <li>• Use a search engine to find a specific website.</li> <li>• Use note-taking skills to decide which text to copy and paste into a document.</li> <li>• Use tabbed browsing to open two or more web pages at the same time.</li> <li>• Open a link to a new window.</li> <li>• Open a document (PDF) and view it.</li> </ul>
	<p><b>E-Safety</b></p> <p><b>Knowledge and Understanding:</b></p> <ul style="list-style-type: none"> <li>• Understand the need for rules to keep them safe when exchanging learning and ideas online</li> <li>• Recognise that information on the internet may not be accurate or reliable and may be used for bias, manipulation or persuasion</li> <li>• Understand that the internet contains fact, fiction and opinion and begin to distinguish between them</li> <li>• Use strategies to verify information, e.g. cross-checking</li> <li>• Understand the need for caution when using an internet search for images and what to do if they find an unsuitable image</li> <li>• Understand that copyright exists on most digital images, video and recorded music</li> <li>• Understand the need to keep personal information and passwords private</li> </ul>		

## Computing Whole School Curriculum Map – 2021/2022

	<ul style="list-style-type: none"> <li>• Understand that if they make personal information available online it may be seen and used by others</li> <li>• Respond if asked for personal information or feel unsafe about content of a message</li> <li>• Recognise that cyber bullying is unacceptable and will be sanctioned in line with the school's policy</li> <li>• Know how to report an incident of cyber bullying</li> <li>• Know the difference between online communication tools used in school and those used at home</li> <li>• Understand the need to develop an alias for some public online use</li> </ul> <p>Understand that the outcome of internet searches at home may be different than at school</p> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>• Follow the school's safer internet rules</li> <li>• Recognise the difference between the work of others which has been copied (plagiarism) and re-structuring and re-presenting materials in ways which are unique and new</li> <li>• Begin to identify when emails should not be opened and when an attachment may not be safe</li> <li>• Explain how to use email safely</li> <li>• Use different search engines</li> </ul>		
Year 5/6	<p><b><u>Cycle One: WWI &amp; WWII</u></b></p> <p><b>Multimedia</b> presentation, (WWII PPT)</p> <ul style="list-style-type: none"> <li>• Can they listen to streaming audio such as online radio?</li> <li>• Can they download and listen to podcasts?</li> <li>• Can they produce and upload a podcast?</li> <li>• Can they manipulate sounds using Audacity?</li> <li>• Can they select music from open sources and incorporate it into multimedia presentations?</li> <li>• Can they make a home page for a website that contains links to other pages?</li> <li>• Can they capture sounds, images and video?</li> </ul>	<p><b><u>Cycle One: Lights, Camera, Action!</u></b></p> <p><b>Creating own film</b> for end of year</p> <p><b>Movie Trailers</b> – creating own using software packages</p> <ul style="list-style-type: none"> <li>• Can they work on simple film editing?</li> <li>• Can they use a range of presentation applications?</li> <li>• Do they consider audience when editing a simple film?</li> <li>• Do they know how to prepare and then present a simple film?</li> <li>• Can they use ICT to record sounds and capture both still and video images?</li> </ul>	<p><b><u>Cycle One:</u></b> <b>Raging Rivers</b></p> <p><b>Rainfall</b> comparisons on Excel – Rivers Database/Excel – World</p> <ul style="list-style-type: none"> <li>• Can they create a formula in a spreadsheet and then check for accuracy and plausibility?</li> <li>• Can they search databases for information using symbols such as = G or q?</li> <li>• Can they create databases planning the fields, rows and columns?</li> <li>• Can they create graphs and tables to be copied and pasted into other documents?</li> </ul>

## Computing Whole School Curriculum Map – 2021/2022

<ul style="list-style-type: none"> <li>• Can they use the word count tool to check the length of a document?</li> <li>• Can they use bullets and numbering tools?</li> <li>• Can they present a film for a specific audience and then adapt same film for a different audience?</li> <li>• Can they create a sophisticated multimedia presentation?</li> <li>• Can they confidently choose the correct page set up option when creating a document?</li> <li>• Can they confidently use text formatting tools, including heading and body text?</li> <li>• Can they use the 'hanging indent' tool to help format work where appropriate (e.g. a play script)?</li> </ul> <p><b>Graphs</b> (conversion: imperial &amp; metric)</p> <p>Computer Science (Y6 Starter unit)</p> <p><b>Block coding</b></p> <p><b><u>Unit 6 starter Y6</u></b></p>	<p><b>Computer Science</b></p> <p><u>Unit 6a Complex variables</u></p> <p>Discovery Education (Espresso)</p> <p>In this unit pupils learn to use variables in more complex ways, and to manipulate inputs to create useful outputs.</p> <p><b>CYCLE 2 Black Country</b></p> <p>Computer Science (5a Speed, direction and coordinates)</p> <ul style="list-style-type: none"> <li>• Can they explain how an algorithm works?</li> <li>• Can they detect errors in a program and correct them?</li> <li>• Can they use an ICT program to control a number of events for an external device?</li> <li>• Can they use ICT to measure sound, light or temperature using sensors and interpret the data?</li> <li>• Can they explore 'what if' questions by planning different scenarios for controlled devices?</li> <li>• Can they use input from sensors to trigger events?</li> <li>• Can they check and refine a series of instructions?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they collect live data using data logging equipment?</li> <li>• Can they identify data error, patterns and sequences?</li> <li>• Can they use the formulae bar to explore mathematical scenarios?</li> <li>• Can they create their own database and present information from it?</li> <li>•</li> </ul> <p>Computer Science (6b object properties)</p> <p>Discovery Education (Espresso)</p> <p>In this unit pupils learn more about how computers use property values and parameters to store information about objects.</p> <p><b><u>Cycle Two:</u></b> <b>Crime and Punishment</b></p> <p>Coding and gaming Film making – use of iPad and media software (reports)</p> <ul style="list-style-type: none"> <li>• Can they use instant messaging to communicate with class members?</li> <li>• Can they conduct a video chat with someone elsewhere in the school or in another school?</li> </ul>
---	--	---

## Computing Whole School Curriculum Map – 2021/2022

	<p><b>Discovery Education (Espresso)</b></p> <p><b>This unit gives an overview or recap of the main concepts in all previous units from 1a to 3b.</b></p> <p><b><u>Cycle Two:</u></b> <b>Ancient Greece</b></p> <p><b>Researching and producing leaflets on Ancient Greek Gods</b></p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content (Research Greek Gods)</p> <ul style="list-style-type: none"> <li>• <b>Can they use a search engine using keyword searches?</b></li> <li>• <b>Can they compare the results of different searches?</b></li> <li>• <b>Can they decide which sections are appropriate to copy and paste from at least two web pages?</b></li> <li>• <b>Can they save stored information following simple lines of enquiry?</b></li> </ul>	<p><b>Information Technology</b></p> <p>Select, use and combine a variety of software on a range of devices to design a range of content</p> <p>Powerpoints/leaflets on Black Country (or R.E. project)</p>	<p>Can they add special effects to alter the appearance of a graphic? (ART)</p> <p>Can they make an information poster using their graphics skills to good effect? (Campaign poster for RRSA)</p> <p>Computer Science 5b Random numbers and simulations)</p> <p><b>Block coding</b></p> <p><b><u>Unit 5b Random numbers and simulations</u></b></p> <p><b>Discovery Education (Espresso)</b></p> <p><b>In this unit pupils learn how computers can generate random numbers and how these can be used in simulations</b></p> <p>Information Technology</p> <p>Blogging (link in social media use) Write a blog as Stanley?</p>
--	--	---	---

## Computing Whole School Curriculum Map – 2021/2022

- Can they download a document and save it to the computer?
- Can they contribute to discussions online?
- Can they use a search engine using keyword searches?
- Can they use complex searches using such as '+' 'OR' "Find the phrase in inverted commas"?

### **Coding**

Computer Science (Y5 Starter unit) (2019/20)

### **Block coding**

**Unit 5 starter Y5 Discovery Education**  
**(Espresso)**

**Can they combine sequences of instructions and procedures to turn devices on or off?**

**Do they understand input and output?**

- Can they use an ICT program to control an external device that is electrical and/or mechanical?

## Computing Whole School Curriculum Map – 2021/2022

- **Can they use ICT to measure sound or light or temperate using sensors?**
- **Can they explore 'What is' questions by playing adventure or quest games?**
- **Can they write programs that have sequences and repetitions?**

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts (Coding)

use sequence, selection, and repetition in programs; work with variables and various forms of input and output (Coding)

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

Internet Safety Lessons

## Computing Whole School Curriculum Map – 2021/2022

	<p><u>Throughout the year, including focus days (Anti bullying. Safer Internet Week, Assemblies)</u></p>		
	<p><b>Knowledge &amp; understanding</b></p> <ul style="list-style-type: none"> <li>• Can they discuss the positive and negative impact of the use of ICT in their own lives and those of their peers and family?</li> <li>• Do they understand the potential risk of providing personal information online?</li> <li>• Do they recognise why people may publish content that is not accurate and understand the need to be critical evaluators of content?</li> <li>• Do they understand that some websites and/or pop-ups have commercial interests that may affect the way the information is presented?</li> <li>• Do they recognise the potential risks of using internet communication tools and understand how to minimise those risks (including scams and phishing)?</li> <li>• Do they understand that some material on the internet is copyrighted and may not be copied or downloaded?</li> <li>• Do they understand that some messages may be malicious and know how to deal with this?</li> <li>• Do they understand that online environments have security settings, which can be altered, to protect the user?</li> <li>• Do they understand the benefits of developing a 'nickname' for online use?</li> <li>• Do they understand that some malicious adults may use various techniques to make contact and elicit personal information?</li> </ul>	<p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Do they follow the school's safer internet rules?</li> <li>• Can they make safe choices about use of technology?</li> <li>• Do they use technology in ways which minimises risk, e.g. responsible use of online discussions, etc?</li> <li>• Can they create strong passwords and manage them so that they remain strong?</li> <li>• Can they independently, and with regard for e-safety, select and use appropriate communication tools to solve problems by collaborating and communicating with others within and beyond school?</li> <li>• Can they competently use the internet as a search tool?</li> <li>• Can they reference information sources?</li> <li>• Can they use appropriate strategies for finding, critically evaluating, validating and verifying information, e.g. using different keywords, skim reading to check relevance of information, cross checking with different websites or other non ICT resources?</li> <li>• Can they use knowledge of the meaning of different domain names and common website extensions (e.g. .co.uk; .com; .ac; .sch; .org; .gov; .net) to support validation of information?</li> </ul>	

## Computing Whole School Curriculum Map – 2021/2022

- |  |  |  |  |
|--|--|--|--|
|  | <ul style="list-style-type: none"><li>• Do they know that it is unsafe to arrange to meet unknown people online?</li><li>• Do they know how to report any suspicions?</li><li>• Do they understand they should not publish other people's pictures or tag them on the internet without permission?</li><li>• Do they know that content put online is extremely difficult to remove?</li><li>• Do they know what to do if they discover something malicious or inappropriate?</li></ul> |  |  |
|--|--|--|--|