Computing Curriculum 2020-21

Year	AUT1	AUT2	SPR1	SPR2	SUM1	SUM2
R	Using the Mouse (Paint / Online Games)		Maths / English (Online Games)	Digital Citizenship	Coding (Code.org)	Coding (Code.org)
1	Typing (Word)	Coding (Code.org)	Tables / Charts (Word / J2Data)	Digital Citizenship	Coding (Logo)	3D Modelling (Toy Theatre Cube)
2	Documents (Word)	Coding (Scratch)	Tables / Charts (Excel / J2Data)	Digital Citizenship	Coding (Logo)	3D Modelling (Toy Theatre Build)
3	E-mail (Google Accts)	Coding (Code.org)	Presentations (Google Slides)	Digital Citizenship	Coding (Logo)	3D Modelling (Toy Theatre Toy Form)
4	Databases / Search (Online)	Coding (J2Code)	Posters (Word/Publisher/Google Docs/Google Drawings)	Digital Citizenship	Coding (Logo)	Coding (Python)
5	Spreadsheets (Google Sheets)	Coding (MicroBit)	3D Modelling (Sketchup)	Digital Citizenship	Coding (Python)	Touch Typing
6	Websites (Google Sites)	Coding (Sonic Pi)	3D Modelling (Sketchup) (Next Year: 3D Animation (Blender))	Digital Citizenship	Coding (HTML)	Touch Typing

	Computer literacy, multimedia projects, presentations, data handling, MS Office, GSuite
	Coding, programming, logical thinking, computer science, algorithms, instructions
	Online safety, digital resilience, cyber bullying, privacy and security

Reception	AUT	SPR1	SPR2	SUM
Topic	*Using the mouse*	*Maths / English*	*Digital Citizenship*	*Coding*
Programs used	Paint	Online Games	Unplugged	Code.org
Topic Aims	AUT1 To move the mouse to different parts of the toolbox and click to select. To select colours from the set of swabs. To use the paint tin tool to fill areas with colour. To use pencil, paintbrush and spray can tools to draw lines. To use the shape tools. To use the Undo option to fix mistakes. AUT2 To continue to work on mouse control to include fine detail. To adjust, move and resize shapes and lines using the mouse. To produce increasingly confident drawings that incorporate shape tools, paintbrush tool, fill tool, straight line tool.	To learn how to write numbers on the computer screen (using the mouse). To play games involving counting and simple number patters. To be able to find missing numbers in a simple sequence. To sort objects into a simple Venn/Caroll diagram. To complete a simple pictogram/bar chart and understand what it represents. To access, choose and play simple literacy and numeracy games.	To understand why it is important to balance your time spent using devices. To consider how to stop using devices when you don't want to. To know how to travel safely on the internet.	To understand and explain what instructions are. To understand that instructions need to go in a certain order and need to make sense. To give instructions to a character to reach a goal by giving directions. To distinguish between left and right. To spot when instructions may have errors in them and correct them. To code a simple algorithm for movement and debug it. To understand how to make instructions shorter by repeating certain instructions. To notice patterns in certain instructions.

				To be able to explain why certain instructions did not work correctly.
Links to EYFS	*CLL1, PSRN3, K&U, PD, CD*			

Year 1	AUT1	AUT2	SPR1	SPR2	SUM1	SUM2
Topic	*Typing Basics*	*Coding*	*Tables and Charts*	*Digital Citizenship*	*Coding*	*3D Modelling*
Programs used	Word	Unplugged/Code.org	Typing.com/J2Data	Google Chrome	J2code/Logo	Google Draw/Toy Theatre - Cube
Topic Aims	To use the keyboard to write words, phrases and sentences. To use the enter key to make new lines, backspace to erase mistakes and space bar for spaces between words. To use the comma and full stop keys. To alter font size/colour/style. To locate, open and save files in given folders. To log-in to computers independently, remembering username and password.	To understand what algorithms are. To understand that algorithms work by executing precise instructions. To be able to give simple instructions and make them more precise. To be able to code simple algorithms for movement. To predict how a simple algorithm will execute. To debug an algorithm by using sequence and testing.	To recognise letters and numbers on a keyboard as well as the space bar, Enter and Backspace. To use secondary key functions using the Shift key. To increase typing efficiency by practising drills. To understand that computers can be used to collect data. To collect data from a survey or questionnaire. To create a simple table using Word. To create a simple pictogram and bar chart using a given website. To interpret what is shown in the charts and graphs. To answer simple questions from the graphs and charts.		To use a Logo emulator to move a turtle forward, backward, turn left and turn right. To follow a list of commands to make shapes. To identify and correct mistakes. To know left and right depending on where a turtle is facing. To use the repeat function as a shortcut to creating a shape or pattern. To predict what shape will be made from a set of code.	To use the fill tool to create basic pixel patterns. To use the build, delete and rotate tools. To change the colour and size of cubes. To use the tools accurately to build more complicated models.
Challenge	*To memorise key locations and use both hands to type.*	*To use logical thinking to create more complex algorithms.*	*To become an efficient typist using both hands. To decorate their charts.*	*To make a poster explaining the key rules of using the web safely.*	*To create interesting patterns and shapes using the code.*	*To create a more complex model according to a specific idea.*

Year 2	AUT1	AUT2	SPR1	SPR2	SUM1	SUM2
Topic	*Documents Basics*	*Coding*	*Making Tables and Graphs*	*Digital Citizenship*	*Coding*	*3D Modelling*
Programs used	Word	Scratch	Typing.com/Excel	Google Chrome	Logo	Toy Theatre - Build
Topic Aims	To locate and open Microsoft Word. To log-in to the computers independently and quickly. To locate the class folder where files are saved. To type a list using capital letters and full stops and the Enter button to make new lines. To open, save and print files. To correct sentences using the mouse and arrow keys. To alter text in a variety of ways. To add pictures to a document	To understand the basics of Scratch, including adding backgrounds, sprites and starting code with green flag. To know how to use movement and size change blocks for animation. To understand how loops work and use the forever and repeat blocks correctly. To know how to make sprites go to a particular place and appear/disappear. To code a simple game using the techniques learnt above. To create a simple game using some code blocks with support. To understand why each block has been added to the game. To be able to debug errors that occur in the game.	To type efficiently using both hands. To use the Shift key (left and right) confidently for capital letters and symbols. To be a resilient typist and be able to type long passages efficiently. To explain that computers can be used to collect data. To collect data from a survey or questionnaire. To create a table on Excel and add data they have collected to it. To create a simple bar chart and pie chart on Excel. To interpret what is shown in the charts and graphs. To answer simple questions from the graphs and charts.			
Challenge	*To make a document about a topic of choice, including text and pictures.*	*To do this without support and add own creative additions to the animations.*	*To become an efficient typist using all fingers. To decorate their charts.*		*To create interesting patterns and shapes using the code.*	

Year 3	AUT1	AUT2	SPR1	SPR2	SUM1	SUM2
Topic	*E-Mails*	*Coding*	*Presentations*	*Digital Citizenship*	*Coding*	*3D Modelling*
Programs used	Google Accounts	Code.org	Google Docs, Google Slides	Google Chrome	Logo	Toy Theatre – Toy Form
Topic Aims	To understand what Gmail and Gsuite are and what they are used for. To choose a secure password. To be able to log in to the Google account independently. To learn how to send emails to people respectfully and safely. To explain the need for respect online when communicating with others. To understand and explain the need for privacy online, including sharing data and choosing secure passwords. To reply to emails, add attachments such as pictures and To open your Google Drive and locate files.	To understand what coding and computer programming involves. To understand the key vocabulary in coding. To be able to predict what an algorithm will do. To be able to sequence code correctly. To know how to debug algorithms. To be able to use loops efficiently to cut down the amount of code. To be able to use input and output statements to obtain a desired outcome. To be able to use conditional statements to obtain a desired outcome.	To launch and navigate Google Classroom. To create and share a new Google Slides project with a partner. To understand the difference between editing and viewing privileges. To attach a file from Google Drive to an assignment on Google Classroom. To complete a simple presentation on Google Slides with a partner. To know how to communicate online with your partner. To search for and add images and video safely to your work.			
Challenge	*To memorise your password and send emails independently.*	*To apply coding knowledge to a project and explain what all the code is and does.*	*To learn how to use Gsuite in more detail.*	*To create a poster showing their internet legend status.*	*To use MicroBit creatively to design something unique.*	

Year 4	AUT1	AUT2	SPR1	SPR2	SUM1	SUM2
Topic	*Search Engines*	*Coding*	*Posters*	*Digital Citizenship*	*Coding*	*Coding*
Programs used	Google	J2Code	Word/Publisher/Docs/Drawings	Google Chrome	Logo	Python
Topic Aims	To list some different search engines and which companies own them. To explain how search engines amass a database by using web crawling and web spiders. To explain how an online search is a search for certain words within its index. To explain various ways in which results are ranked. To use efficient search terms to find answers to given questions. To use search engines to find varied web results, e.g. map results and image results. To reduce web results by filtering and using Boolean operators.	To add backgrounds and multiple sprites to the game. To program the sprites to move either by themselves or to respond to key presses/mouse movements. To create a scoring system using variables that resets when the game starts. To create a separate variable for lives. To be able to spot errors and debug through their own testing and in-depth checking. To understand how to use conditionals and events to trigger appropriate in-game responses.	To use a search engine to find appropriate websites and filter the results. To search through data for relevant information. To set out text and images in a poster. To present accurate information appropriate for the audience. To alter backgrounds, fonts size/colour/face, text wrapping, image crops and borders. To experiment with using different software to produce a poster, deciding which one you prefer to use.			
Challenge	*To design their own web search challenges for others.*	*To create a multi-levelled game with a win and lose screen.*	*To explain the advantages and disadvantages of different software.*			

Year 5	AUT1	AUT2	SPR1	SPR2	SUM
Topic	*Spreadsheets*	*Coding*	*3D Modelling*	*Digital Citizenship*	*Coding*
Programs used	Google Sheets	MicroBit	SketchUp	Google Chrome	Python
Topic Aims	To record data in a table of results. To alter the cells widths/heights and font size/style/colour when appropriate. To insert rows and columns. To turn the table into a variety of different graphs. To move graphs onto new sheets. To include a graph headings and x/y axis headings.	To design and write programs that simulate a physical system. To work with various forms input and output. To use sequence, selection and repetition when coding. To work with programming variables. To break large problems into smaller parts. To debug errors in coding algorithms. To predict the behaviour of the MicroBit from given algorithms. To work safely and respectfully with a piece of hardware.			To understand that functions can be loaded within Python as a coding language. To use the turtle function to make shapes. To use the turtle function to create a design based on Matisse's Snail. To understand and explain what each line of code means. To use variables to achieve and outcome and to debug typos and other errors. To create a simple timing game on Python.
Challenge	*To experiment with formulas to make sums and averages.*	*To use MicroBit creatively to design something unique.*			*To embellish their artistic designs by experimenting with code. To add their own features to the game.*

Year 6	AUT1	AUT2	SPR1	SPR2	SUM
Topic	*Websites*	*Coding*	*3D Modelling*	*Digital Citizenship*	*Coding*
Programs used	Google Sites	Code Club Projects/Sonic Pi	Skechup	Google Chrome	HTML
Topic Aims	To understand that websites are made up of multiple pages with links to different parts. To be able to create a home page and other pages (each on different themes) for a website on a given topic. To be able to accurately link across the pages on the website. To give the website appropriate formatting and images. To research information online to put on the website. To ensure the accuracy of information added to their website.	To know how to play musical notes using numbers and use repetition to repeat notes. To use samples and repetition to create a drum loop. To manipulate samples to create special effects. To program the Tetris Theme using musical notes and work with musical notation. To program a musical round (Frere Jacques) to learn how to play sounds concurrently and program music using letter names. To use live_loop to make multiple pieces of music play in time with each other.			To understand what HTML is and how it is used. To understand how to tags < > work in HTML.
Challenge	*To ensure that the website is appropriate for the audience and is engaging.*	*To use these skills to compose a new piece of music.*			