

Topic Titles	Doodle 4 Google	Computing Heroes	Advanced Modelling	Python	Code.org Course 3	KS3 – 7-9 KS4 – CS and BTEC NC – National curriculum
Objectives	Pupils will develop graphics based on a real life topic that they have to research and justify their findings and designs.	Pupils will study selected elements of how computers operate and behave based on a selection computing heroes and learning about their achievements.	Pupils will study the spreadsheet software Microsoft Excel to produce financial models. They will learn how to create formulas, advanced functions, and model real life situations.	Pupils will be given existing programs to become accustomed to using the Python and syntax, alongside the opportunity to extend their programming skills by extending/amending programs and creating ones from scratch.	Pupils will create and test a range of programs using text commands, which allows them to gain an understanding of sequence, loops and functions. Pupils will use the program so self-evaluate their code and find fix errors.	
Link to the future	KS3 YR 9 – Robotics unit NC - undertake creative projects that involve selecting, using, and combining multiple applications. Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	KS4: Paper 2 Computer Science NC - Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming.	KS4: BTEC using data component 2 NC - Collecting and analysing data. Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems	KS4: Computer Science – Python NC - Textual programming language - to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	KS4: Computer Science – Python NC - graphical and textual programming language, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	
Knowledge & skills						Literacy
STAGE 4	Can confidently present their work and justify their decision based on the given audience, with attention to trustworthiness, and design decisions. All images will be created from scratch using a range of tools and not just retrieved from the internet.	Can use multiple logic gates connected together. Can construct a webpage using HTML with minimal input Can use multiple encryption methods Independently	Can independently design and create a model linked to a real-life situation and analyse the data. Can independently decide which advanced functions to use based on a scenario.	Can independently create a program using IF ELIF ELSE. Cast data into the correct datatype Can independently solve errors	Can work fully independently to solve errors Can use functions to make code more efficient.	<ul style="list-style-type: none"> • Create coherent and fluent paragraphs using appropriate conjunctions. • Use varied, appropriate and extensive IT related terminology. • Spelling, punctuation and grammar are accurate
STAGE 3	They are able to present their work and explain the purpose of the design based of research they have conducted. Can create images using a range of tools and not just retrieved from the internet.	Can demonstrate the inputs and outputs of the logic gates Can create HTML with minimal help. Can use multiple encryption methods with minimal help	Can confidently use If statements, Countif, and Conditional formatting. Know when and why to use Absolute cell referencing.	Can create a program using IF and Else code. Can create and use a list. Can identify the correct datatype for the program	Can use conditions to determine an outcome	<ul style="list-style-type: none"> • Create coherent paragraphs using appropriate conjunctions. • Use some varied IT related terminology. • Spelling, punctuation and grammar are mostly accurate.
STAGE 2	They are able to describe the elements of their design that closely link to the theme. Can create images using some of the tools.	Can write basic HTML code with help. Can identify the three logic gates Can use one encryption method	Can use SUM, MIN, MAX, AVERAGE, functions. Know when to use relative cell referencing. Can create a graph using two separate data sources.	Can add commentary to programs. Can create an input variable. Can concatenate variables and strings.	Can use loops and repetition in their code	<ul style="list-style-type: none"> • Create coherent paragraphs using appropriate punctuation. • Use some IT related terminology. • Spelling, punctuation and grammar are usually accurate.
STAGE 1	They are able to identify the elements of their design. Can create images using basic tools.	Can identify HTML Can list the three logic gates Can identify encryption	Can use arithmetic operators (+ - / *) to create simple formulas Can create a graph.	Can create a string. Can create a variable.	Can create simple commands to move	<ul style="list-style-type: none"> • Can use capital letters and basic punctuation so work is mostly coherent. • Use some IT related terminology where appropriate. • Spelling and grammar does not affect understanding.

