KS3 ASSESSMENT

Computing
BRAMHALL HIGH SCHOOL

	Acquiring	**Developing**	**Secure**	**Mastered**
	Is beginning to acquire the necessary knowledge for the topic(s)	Is developing the knowledge necessary to understand the topic	Understands the topic and is able to make links using the knowledge	Fully understands the topic and is able to confidently link knowledge.
Term 1a Impact of Technology	**Acquiring** Knows and mostly respects the basic rules of a computer room Recognises what Cyberbullying is, the dangers involved and how to report any instances	**Developing** Follows the rules of a computer room Recognises what Cyberbullying is, the harms caused, dangers involved and how to report any instances Can create a presentation on cyberbullying that informs an audience	**Secure** Follows the rules of a computer room at all times Understands what Cyberbullying is, the harms caused, dangers involved and how to report any instances Can create a detailed presentation on cyberbullying that informs and educates an audience	**Mastered** Ensures the computer room is respected at all times by all users Understands the all aspects of what Cyberbullying is in detail, the harms caused, dangers involved and how to report any instances Can create an extensive presentation on cyberbullying that informs and educates an audience on many aspects of cyberbullying

Term 1b Spreadsheets	Identify columns, rows, cells, and cell references in spreadsheet software Use formatting techniques in a spreadsheet	Use basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /) Use the autofill tool to replicate cell data	Explain the difference between data and information Explain the difference between primary and secondary sources of data Use the functions SUM, COUNTA, MAX, and MIN in a spreadsheet Use a spreadsheet to sort and filter data and collect data	Analyse data Create appropriate charts in a spreadsheet Use the functions AVERAGE, COUNTIF, and IF in a spreadsheet Use conditional formatting in a spreadsheet Apply all of the spreadsheet skills covered in this unit
Term 2a Scratch	Create a simple script that moves the sprite create and edit new costumes for an existing sprite	Create a simple script that animates the sprite automatically Delete, resize and draw new sprites Animate a sprite using costumes	Create variables to set up scoring in the game Make an autonomous sprite chase the sprite controlled by the player Use coordinates and random numbers to set start position of sprites	Use broadcast to start the game Combine different conditions using If...Else... to govern the game outcome Draw using the pen feature of Scratch Create simple subroutines

		Make sprites start in a pre-set starting position using coordinates	Give the user instructions at the beginning of the game	Use the broadcast feature in Scratch to create subroutines Enable user input to set the number of sides of each shape
Term 2b Computer Systems	Recall that a general-purpose computing system is a device for executing programs Recall that a program is a sequence of instructions that specify operations that are to be performed on data Explain the difference between a general-purpose computing system and a purpose-built device	Describe the function of the hardware components used in computing systems Describe how the hardware components used in computing systems work together in order to execute programs Recall that all computing systems, regardless of form, have a similar structure ('architecture')	Define what an operating system is, and recall its role in controlling program execution Describe the NOT, AND, and OR logical operators, and how they are used to form logical expressions Use logic gates to construct logic circuits, and associate these with logical operators and expressions Describe how hardware is built out of increasingly complex logic circuits Recall that, since hardware is built out of logic circuits,	Analyse how the hardware components used in computing systems work together in order to execute programs Describe the steps involved in training machines to perform tasks (gathering data, training, testing) Describe how machine learning differs from traditional programming Associate the use of artificial intelligence with moral dilemmas

			data and instructions alike need to be represented using binary digits Identify examples of artificial intelligence and machine learning in the real world	Explain the implications of sharing program code Provide broad definitions of 'artificial intelligence' and 'machine learning'
Term 3a Zoo Project	Can research given topics on the internet and save resources Can create a basic artefact displaying some factual information	Know the difference between fact and opinion Create a factsheet on a chosen zoo animal Create a logo for a local zoo	Can clearly identify the difference between fact and opinion Create a good quality factsheet that is informative and attractive Create 3 logos and then research which is the most effective Write an evaluation of the final product	Use research effectively when creating resources Select appropriate resources and reject Inappropriate resources from the Internet Create a high quality factsheet that is very informative and attractive Create 3 logos, researches which is the most effective and makes clear adjustments to final product based on feedback

				Writes a detailed evaluation of the final product that looks at the WHAT, HOW and WHY
Term 3b Integrated Sports Project	Create digital artefacts which meet few criteria Perform internet research with limited success Your artefacts created follow a limited house style	Create digital artefacts which meet most criteria Perform internet research with some success Your artefacts created follow a house style somewhat	Create professional looking digital artefacts which meet most criteria Perform internet research with success Your artefacts created follow a house style Present your work in a portfolio	Create professional looking digital artefacts which meet all criteria Perform accurate internet research with success Your artefacts created follow a professional looking house style Present your work in a professional looking portfolio

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Term 1a Everyday Algorithms	Can write a simple step by step list to solve an everyday problem Can use flow chart shapes effectively and link them accordingly	Can write step by step algorithm stages for problems Can create a flow chart based on a sequence of steps in a process with all types of shapes used	Can write detailed step by step algorithm stages for problems which includes decisions and repeated tasks Can create a flow chart based on a sequence of steps in a process using correct sequencing, Iteration and decision boxes Can explain how abstraction, decomposition, Iteration and decisions are used	Can write complex step by step algorithm stages for all problems which includes decisions and repeated tasks Can create a flow chart for each task based on a sequence of steps in a process using correct sequencing, Iteration and decision boxes with loops included and no errors Can explain in detail how abstraction, decomposition, Iteration and decisions are used for every example given

Term 1b Binary Representations	Demonstrate a limited understanding of binary numbers Produce a very basic program on micro:bit	Demonstrate an understanding of binary numbers Produce a basic program on micro:bit Perform some binary conversions Perform some binary calculations	Demonstrate a good understanding of binary numbers Produce a purposeful program on micro:bit Perform most binary conversions Perform some binary calculations	Demonstrate an excellent understanding of binary numbers Produce a meaningful program on micro:bit Perform all binary conversions Perform all binary conversions
Term 2a Introduction to Programming	Understands that python is a computing language. Recognises and can use some command words like print	Understands that python is a high-level computing language Recognises and can use several command words like print, Input Can write a simple program and undertake some problem solving Begins to understand what a variable is and uses them in their program	Can effectively use Python as a programming language Recognises and can use most key words like print, input, +, if Can write a simple program and undertake most problem solving Confidently understands what a variable is and uses it in the program Can write if statements and understands their use	Can independently create programmes using Python Recognises and uses key words like print, input, +, if, elif confidently and creatively Can write a detailed program and undertake problem solving effectively Confidently understands what a variable is and how to use them Can create fully working if statements and understands their use and limitations

| Term 2b Networks | Know what a computer network is and explain how data is transmitted between computers across networks

List examples of the hardware necessary for connecting devices to networks | Define 'protocol' and provide examples of non-networking protocols

Compare wired to wireless connections and list examples of specific technologies currently used to implement such connections | Define 'bandwidth', using the appropriate units for measuring the rate at which data is transmitted, and discuss familiar examples where bandwidth is important

Define what the internet is Explain how data travels between computers across the internet Describe key words such as 'protocols', 'packets', and 'addressing' | Explain in detail the difference between the internet, its services, and the World Wide Web Describe in detail how services are provided over the internet List all of these services and the context in which they are used Explain the term 'connectivity' as the capacity for connected devices ('Internet of Things') to collect and share information about me with or without my knowledge (including microphones, cameras, and geolocation)

Describe in detail how internet-connected devices can affect me |
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| Term 3a

Mobile Technology | Can compare two types of mobile phone and their respective technologies

Knows what megapixels, cores and processors are

Knows what phone apps are | Can explain various features of a modern mobile phone

Can make some evaluation comments over the importance of these features

Can identify different apps and how they are used | Can explain how different users require different levels of phone technologies according to their needs

Can evaluate and make decisions over which technology is the best for a given user

Can evaluate various apps available to users, both paid and free

Can explain various methods of data transfer and evaluate them according to given criteria | Can explain in detail how different users require different levels of phone technologies according to their needs

Can evaluate and make decisions over which technology is the best for a given user giving detailed reasons

Can evaluate various apps available to users, both paid and free with sound reasoning

Can explain in detail various methods of data transfer and evaluate them according to given criteria |

Term 3b Vector graphics	Identify what a vector graphic is Show a basic understanding of the program and its tools Create limited vector images using some of the skills you have been shown	Explain what a vector graphic is Show an understanding of the program and its tools Create vector images using some of the skills you have been shown Perform a basic evaluation of your work	Explain what a vector graphic is and its benefits Show a good understanding of the program and its tools Create vector images using most of the skills you have been shown Perform a good evaluation of your work	Compare Vector and Bitmap graphics and the benefits of both Show a good understanding of the program and its tools and demonstrate your knowledge Create effective vector images using all the skills you have been shown Perform a critical evaluation of your work

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Term 1a Advanced Python Programming	Can write basic code on Python Can use MU and produce an Output	Able to write code based on own questions Can explain what different lines of code do	Can create different IF, ELIF and ELSE code with appropriate responses Can write professional questions and responses Can create a random number generator Make some attempt at the extension task	Can create many different IF, ELIF and ELSE code with detailed and appropriate responses Can write highly professional questions and responses Can create a sophisticated and meaningful random number generator Can complete extension task to a high level
Term 1b Cybersecurity	Identify what happens to data entered online Recognise how human errors pose security risks to data List the common malware threats	Explain the difference between data and information Explain the need for the Data Protection Act Define hacking in the context of cyber security	Implement strategies to minimise the risk of data being compromised through human error Explain how a DDoS attack can impact users of online services	Critique online services in relation to data privacy Explain the need for the Computer Misuse Act Question how malicious bots can have an impact on societal issues

		Identify the most effective methods to prevent cyberattacks	Identify strategies to reduce the chance of a brute force attack being successful Examine how different types of malware causes problems for computer systems	Compare security threats against probability and the potential impact to organisations Explain how networks can be protected from common security threats
Term 2a User interfaces	Show a basic understanding of what a user interface is Undertake little research into current user interfaces Create a basic user interface with little functionality	Show an understanding of what a user interface is Undertake some research into current user interfaces Create a basic user interface with some functionality Write a basic evaluation the user interface you have created	Show a good understanding of what a user interface is Undertake research into current user interfaces Create a user interface with useful functionality Write an evaluation the user interface you have created	Show a clear understanding of what a user interface is and provide examples Undertake research into current user interfaces Create a good user interface with meaningful functionality Write a critical evaluation the user interface you have created

Term 2b Advanced Spreadsheets	Can import an external dataset in to own files Can format a worksheet Can add a column to a worksheet	Can add a function to show specific results Can replicate a function for other rows	Can add a range of specific functions to a worksheet Can add ACTION COMMENTS to a dataset Can create a digital dashboard to illustrate data	Can produce a detailed worksheet and dashboard Can use professional presentation techniques Can include techniques such as tables, pivot tables, sparklines, graphs and charts
Term 3a Database Applications	Can plan a basic database Can create a basic database	Can create a database Can select correct data types	Can create a database with several fields Can select appropriate data types having considered alternatives Can add combo box(es) to provide menus Can create a FORM to make data entry easier Can design a QUERY Can produce a basic REPORT	Can create a database with several fields with useful data Can select appropriate data types having considered alternatives and can justify choice Can add combo box(es) to provide menus with several options Can create a well-designed FORM to make data entry easier Can design PARAMETER QUERIES for several fields

				Can produce a professional REPORT that is well designed
Term 3b Advanced Sports Project	Create digital artefacts which meet few criteria Perform internet research with limited success Your artefacts created follow a limited house style	Create digital artefacts which meet most criteria Perform internet research with some success Your artefacts created follow a house style somewhat	Create professional looking digital artefacts which meet most criteria Perform internet research with success Your artefacts created follow a house style Present your work in a portfolio	Create professional looking digital artefacts which meet all criteria Perform accurate internet research with success Your artefacts created follow a professional looking house style Present your work in a professional looking portfolio