DUKE'S SECONDARY SCHOOL
FACULTY OF IT & Computing

LONG TERM CURRICULUM PLAN

YEAR 7		
HT1	**HT3**	**HT5**
Impact of technology – Collaborating online respectfully Students look at protecting themselves online including password safety, how to deal with and report cyberbullying, and looking after their digital footprint. They look at what is acceptable when communicating online through critiquing work in a respectful manner.	Networks from semaphores to the Internet Students look at early forms of communication and a brief history of networking. They look at the reasons for, and benefits of networking computers, network hardware and topologies. Students learn the difference between the internet and world wide web, and the protocols and domains used.	Programming essentials in Scratch – part II Follow on from part 1. Unit Looks at decomposition and how it can be used to create subroutines. Introduces condition controlled iteration and allows learners to evaluate when to use each. Introduces structured lists.
HT2	**HT4**	**HT6**
Modelling data – Spreadsheets Students learn the basics of using spreadsheets and collecting and understanding data. Covers data inputs, formatting techniques and basic formulas. Students gain an understanding of collecting and analysing their own data sets as well as theory such as the difference between data	Programming essentials in Scratch – part I Students learn how computers process instructions. Unit involves predicting the outcomes of simple sequences and the importance of sequencing. Covers variables and naming conventions, operators, selection and count controlled loops. Most tasks use the PRIMM learning model.	Using media – Gaining support for a cause Students conduct research into a worthy cause (which they choose) and create a website to gain support for that cause. Students are taught to search for information online and form judgements on the trustworthiness of the information, as

and information, and primary and secondary data.		well as knowing what can be used in terms of copyright and creative commons licensing.

YEAR 8		
HT1	**HT3**	**HT5**
Computing systems Students learn what a computer is and how to distinguish a general purpose machine from a purpose built device. Classifying electronic devices. Introduction to computer architectures and links between components. Looks at operating systems and boolean logic (NOT AND OR)	Introduction to Python programming Students learn what an algorithm is and how it translate to inputting machine instruction. They write simple programs which assign values to variables and takes user input. students gain an understanding of python syntax and how to find and correct errors. Students build on learning from scratch units by familiarising themselves with other programming constructs - iteration, control flow, selection etc	Developing for the web Students learn what HTML is and use tags to produce a basic static web page using notebook. The are able to modify this by changing tag values. Students use CSS to build on the HTML and improve the look. Students also look at how web searches are carried out (indexing, crawling etc)
HT2	**HT4**	**HT6**

Mobile app development Students learn the importance of decomposition and how to create GUI elements to meet a user's need. This unit is based around a project where students create a block based application using code.org. Pupils consider user inputs and variables in a condition driven programming environment.	Media – Vector graphics	Representations – from clay to silicon Students are introduced to symbols and the importance of writing through a virtual museum tour. The importance of symbols is linked to representations in a computer (binary). Students expand on this by learning binary number conversions, representation sizes and ASCII.

YEAR 9		
HT1	**HT3**	**HT5**
Cybersecurity Students learn the difference between data and information, how organisations collect data, and what they might do with it. This leads into gaining an awareness of the importance of the data protection act. Students look at a number of cyber threats (Viruses, worms	Physical computing Students look at what a micro:bit is, and into its built in inputs, outputs and other components. They use makecode.com to create block coded programs which are downloaded to the micro:bit.	Representations – going audiovisual Unit starts by exploring the theory of digital images and sound (Bit depth, Resolution, sample rate) and the effect this can have on file sizes. Learners learn the difference between lossy and lossless

etc) and the security measures that can protect against them (firewall, encryption etc)		compression and when each one is used. Practical tasks in audacity and blender.
HT2	**HT4**	**HT6**
Media – Animations	Python programming with sequences of data Students build on skills learnt last year. Unit involves performing data operations on variables and lists, condition controlled loops, count controlled loops, string manipulation. Students will understand the difference in data types and how it affects the program syntax.	Data science Students learn how visualising data can help to see patterns and trends. They use a range of online tools to look at data, make predictions, and then prove or disprove predictions. Students learn how to select appropriate criteria to analyse data, collect useful data, and make conclusions. Students look at correlations in data, outliers, and the impact that outliers have on the usefulness of data. (link to using spreadsheets)