



Year 9 Computer Science ALL

Subject Leader: Mrs Muyunda Oldham

Year 9 Computer Science aims to engage, endeavour and excel all by building students programming skills and better understanding computing concepts which have been introduced in Year 7 and 8. The block and basic text programming is extended to Python text based programming. Binary conversion and addition is developed to data representation of images, colour, sound & compression.

Topics to be covered in Year 9

	Term 1	Term 2	Term 3
Topics to be covered	Binary Conversion HEX conversion Binary Representation of Images Binary Representation of Sound Binary Representation of colour Compression—Lossy and Lossless Intermediate UK Bebras Competition 2024	Python Programming— Zigzag Python Resource Photoshop Mid Year Assessment on Ms Forms	Intro to Network threats and vulnerabilities Operating systems Ethics Data Science EOY Exam on MS forms
Skills to be developed	Image Representation Remembering binary digits and conversion create images out of individual elements, to help them understand pixels represent the colour of each pixel using one or two binary digits Explore GIMP environment Create and manipulate images using GIMP Sound Representation understand the true nature of sound Sound waves Digital sound Analogue sound Sample size Sample Frequency Colour Representation Understand RGB Create colours by mixing RGB Use the colour picker Compression Lossy Lossless	Basic number operations Values, variables and Expressions Datatypes Functions Control Structures Lists Working with Files Creating your own classes Dealing with Errors Algorithms Photoshop Cropping Selecting Masking Layers Blending Colour balance Saturation	Network threats complete cyber explorers challenges to learn network threats and vulnerabilities Data trends Global data Recognise examples of where large data sets are used in daily life Select criteria and use data set to investigate predictions Evaluate findings to support arguments for or against a prediction Statistical state of mind Define the terms 'correlation' and 'outliers' in relation to data trends Identify the steps of the investigative cycle Solve a problem by implementing steps of the investigative cycle on a data set Use findings to support a recommendation

Website Links

<https://www.bbc.co.uk/education>

<https://w3schools.com>

<https://code.org/learn>

<http://www.bing.com/search?q=cisco+binary+game&src=IE-SearchBox&FORM=IESR02>

<https://www.codecademy.com/learn/all>

<https://teach-ict.com>

<https://senecalearning.com/en-GB/>

Marking, Assessment and Feedback

Over the course of an academic year students will complete a number of progress paths, formal test/quiz assessments, these will be used to assess where students are in their learning journey. The UK Bebras computational challenge will be taken. This is assessed externally.

Information from these assessments could be used when making decisions regarding reporting student progress home and predicting outcomes. Current guidelines mean that we cannot provide as much detailed written feedback as it typical. As a result of this, we will during lessons, evaluate students' learning through a range of activities including quizzes, class discussions, detailed questioning and other strategies. Through this, students will know where they are in their learning journey and what they need to do next to make further progress.

Teachers will continue to provide planned written feedback on selected pieces of work.

Homework

Homework will be set using the online platform <https://www.go4schools.com/>

Contact Information:

If you would like to contact the Science Department please email: science@gilberd.com or contact your child's teacher.

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