# 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** | **Data Representation**<br>Binary Conversion<br>HEX conversion<br>Binary Representation of Images<br>Binary Representation of Sound<br>Binary Representation of colour<br>Compression—Lossy and Lossless<br>Intermediate UK Bebras Competition 2025 | **Python Programming using**<br>Oak Academy<br>Zigzag Python<br>Turing lab<br>Photoshop 3D graphic manipulation<br>**Mid-Year Assessment on Ms Forms** | **Introduction to Networking threats**<br>**3D Photo editing in Photoshop** |
| **Skills to be developed** | **Image Representation**<br>Remembering binary digits and conversion<br>create images out of individual elements, to help them understand pixels<br>represent the colour of each pixel using one or two binary digits<br>Explore GIMP environment<br>Create and manipulate images using GIMP<br>**Sound Representation**<br>understand the true nature of sound<br>Sound waves<br>Digital sound<br>Analogue sound<br>Sample size<br>Sample<br>Frequency<br>**Colour Representation**<br>Understand RGB<br>Create colours by mixing RGB<br>Use the colour picker<br>**Compression**<br>Lossy<br>Lossless | Arithmetic operations<br>Getting User Input<br>Formatting Outputs<br>Data Types<br>Boolean<br>If statements<br>Else clause<br>String manipulation<br>Lists<br>For loops<br>While loops | **Network threats**<br>complete cyber explorers challenges to learn network threats and vulnerabilities<br>**Photoshop Manipulation**<br>Adding text<br>Understanding main shortcut keys<br>Color replacement tool<br>Cloning tools<br>Selection brush tool<br>Filtering<br>History brush<br>Sponge tool |

**Website Links**

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

https://w3schools.com

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 topics and will be assessed using progress paths, formal tests, MS form quizzes/topic tests.

Information from these assessments will contribute in making decisions regarding reporting student progress and predicting outcomes. Current guidelines mean that we cannot provide as much detailed written feedback as is typical from core subjects. In addition, teachers will evaluate students' learning through enrichment activities, class contribution, homework and a range of other activities. 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 Go 4 Schools 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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