

# Computer Science

## Curriculum Manager:

Mr S Howe / Mr J Moore (KS3 – Co-ordinator)

## Teaching Staff:

Mr J Moore, Mr S Howe, Mrs S Webster, Mr B Kelly, Mr D Burgess, Mrs R Mazurek

## Curriculum Overview:

*Pupils will focus exclusively on their computational thinking, problem solving and programming ability within Computer Science in preparation for KS4 study. Pupils will gain experience in physical computing as well as programming languages to develop their knowledge from year 7 and 8. The pupils will sit four units of study throughout the year which are outlined below:*

### Programming on the Sense Hats – Unit 1

*This is a practical unit where pupils will use Linux and python to program the sense hats.*

*They will develop a Linux command shell and create a simple program using Python. Pupils will a range of sensors to create Pixel art.*

#### Areas of study:

- Background research into Sense Hat
- Introduction to python commands
- Independent project on the sense hat
- Pixel art project on the sense hat
- Feedback/Improvement
- Evaluation

### Raspberry Pi Project – Unit 2

*This is a practical unit, where pupils use a range operating systems and programming languages to develop a simple program using Sonic Pi. Pupils will complete an independent investigation on Linux as well as programming digital sounds.*

#### Areas of study:

- Background research into Linux
- Introduction to Linux commands
- Sonic Pi Introduction
- Practical investigation
- Feedback
- Evaluation

### Data Representation and Networking – Unit 3

*This is a theoretical unit, where pupils develop knowledge in how data is represented within a computer system as well as looking at how networks work. This unit will be assessed via a linear written examination during exam week in June.*

#### Areas of study:

- Programming languages (high and low level)
- Binary within a computer system
- Types of networks
- Network hardware
- Network topologies
- Network Security
- Revision

### Python Programming – Unit 4

*This is a practical unit, where pupils develop their capability in the application of software development. They work with a range of digital tools and techniques to produce effective programs and solutions. Pupils will create a Chatbot program to complete the Turing test.*

#### Areas of study:

- Background research
- Algorithms
- Program development
- Testing/feedback
- Evaluation

## Assessments:

*A range of assessments take place during each unit in line with 1-9 GCSE grades. These include self, peer, formative and summative assessments.*

## Homework:

*Pupils complete activities on Moodle or google classroom that contain questions to check pupils' understanding of key terms and concepts relevant to the tasks completed. Homework Form competition during term 1 on code academy.*

## Other Useful Information:

*Useful web links: [www.thedeantrustmoodle.org](http://www.thedeantrustmoodle.org), [www.bbc.co.uk/education](http://www.bbc.co.uk/education), [www.codeacademy.com](http://www.codeacademy.com), [www.code.org](http://www.code.org), [www.codecombat.com](http://www.codecombat.com), [www.raspberrypi.org](http://www.raspberrypi.org)*

# ICT

## Curriculum Manager:

Mr S Howe / Mr J Moore (KS3 – Co-ordinator)

## Teaching Staff:

Mr J Moore, Mr S Howe, Mrs S Webster, Mr B Kelly, Mr D Burgess, Mrs R Mazurek

## Curriculum Overview:

Pupils will experience a selection of ICT options based curriculums throughout year 9, which will allow them to make an informed decision and experience a wide range of skills in preparation for their KS4 studies. All units are delivered and assessed via Google Classroom, which pupils have access to through their Ashton computer login.

An overview of the year 9 ICT program of study can be found below:

### Project Planning – Term 1

The aim of this unit is for pupils to be able to plan their time effectively in order to maximise their outcomes against specific requirements. Pupils will learn how to develop and implement a range of pre-production documents for a project allowing them to prepare for the development stage.

#### Pupils will gain experience with:

- Research techniques
- Client requirements
- Target audiences
- Brief's and Specifications
- Website features
- Hardware and Software requirements
- Health and Safety in projects
- Planning a project
- Developing visualisation diagrams

### Web Development - Term 2

The aim of this practical unit, is for pupils to get to convert their planning of a project into a real example. Pupils will gain experience in web development as per a KS4 style scenario with specific requirements set out. Pupils will experience elements of Creative iMedia, Photography, GCSE ICT and Business studies.

#### Pupils will gain experience with:

- Web authoring tools
- Accessibility
- Designing interactive features
- Photo editing
- Image authoring
- Video editing
- Sound editing
- Price, place and promotion

### Business research project – Term 3

The aim of this theory based unit is to educate pupils on the marketing mix with practical examples which will give them experience for further KS4 study.

#### Pupils will gain experience with:

- Research process
- Collecting raw data
- Surveys
- Questionnaires
- Pitching an idea
- Product design
- Promotion
- Advertising
- Marketing mix
- Prototyping

## Assessments:

A range of assessment windows take place during each unit in line with 1 -9 GCSE Levels. These include Self, Peer, Formative and Summative assessments.

## Homework:

Students complete their homework using the ICT department Virtual Learning Environment (Moodle) or Google Classroom. All homework will be set using these systems and pupils can access it at home with their appropriate log in details. The web address for Moodle is [thedeantrustmoodle.org](http://thedeantrustmoodle.org)

## Other Useful Information:

Useful web links: [www.thedeantrustmoodle.org](http://www.thedeantrustmoodle.org), [www.bbc.co.uk/education](http://www.bbc.co.uk/education), [www.codeacademy.com](http://www.codeacademy.com), [www.code.org](http://www.code.org), [www.codecombat.com](http://www.codecombat.com)