

# Computer Sciences

Head of ICT - Mr S Howe

Key Stage 3 Co-ordinator - Mr J Moore

## Unit 1 - Programming on the Sense hats:

### **About the Unit:**

This is a practical unit, where pupils broaden and enhance their Computing and programming skills and capability in the use of Linux as well as using python to program the sense hats. They work with a range of digital tools and techniques to produce use a linux command shell as well as created a simple program using python. Pupils will use the various sensors on the senses hat to create a program that shows off Pixel art. The below areas will be covered in this unit:

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

## Unit 3 - Data Representation and Networking:

### **About the Unit:**

This is a theoretical unit, where pupils broaden and enhance their Computing knowledge in the how data is represented within a computer system as well as looking at how network work. This unit will be assessed via an exam in June. They work with a range of digital tools and techniques to produce use a verity of produces in relation to the topic areas which will aid their revisions for their exam program using python. The below areas will be covered in this unit:

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

## Unit 2 - Raspberry Pi project

### **About the unit:**

This is a practical unit, where pupils broaden and enhance their Computing and programming skills and capability in the use of different operating systems as well as programming languages. They work with a range of digital tools and techniques to produce use a linux command shell as well as created a simple program using sonic pi. Pupils will complete an independent investigation on linux as well as creating a piece of music using the sonic pi program. The below areas will be covered in this unit:

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

## Unit 4 - Python Programming

### **About the unit:**

This is a practical unit, where pupils broaden and enhance their Computing and programming skills and capability in the application of software development. They work with a range of digital tools and techniques to produce effective program and solutions. Pupils will create a Chatbot program to complete the Turing test. The below areas will be covered in this unit:

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

### Assessments:

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

### Homework:

Pupils complete journals and 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:

Complete course of study on Moodle with resources and assessment. [www.thedeantrustmoodle.org](http://www.thedeantrustmoodle.org); BBC Bitesize; Teach-ict.com, code Academy, Raspberry Pi website

# ICT

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## Term 1

### Unit 1 - Graphics Unit

This unit aims to introduce pupils to study a range of digital graphics skills using Microsoft and Adobe packages. You will be creating a logo, Website Banner and editing a collection of images to go on your website to meet the brief of "British values".

You will learn about:

- Using graphics packages
- Editing photographs
- Creating a logo
- Creating a website banner
- Reviewing what makes a good logo
- Applying changes to digital products to meet the brief

## Term 2

### Unit 2 - HTML and CSS

This is a practical unit, you will broaden and enhance your computing skills and capability. In addition you will work with a range of programming languages and digital graphics to produce effective a website.

You will learn about:

- History of the internet
- What is HTML
- What is CSS
- Practical programming experiences
- Creating digital posters
- Designing a website
- Creating a website using HTML and CSS
- Reviewing work

## Term 3

### Unit 3 - App Design

The purpose of the course is to create a space where you can solve problems you care about in a structured way, using ideas from experts in entrepreneurship, technology, community involvement, problem-solving and team work.

You will learn about:

- App History
- App Features
- Mood boards
- App Planning
- Creating a prototype
- Setting up a demo app
- Reviewing work

## Key Dates:

Submission of unit 1 in December.

## Homework:

Pupils complete journals and activities on Moodle that contain questions to check pupils' understanding of key terms and concepts relevant to the tasks completed. Homework is also set through Moodle assignments based on progress made in class.

## Other Useful Information:

Complete course of study on Moodle with resources and assessment.