Bramhall High School Computing

A level – Computer Science, (Need grade 6 and above and grade 6 in Maths)
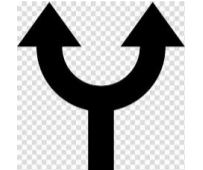
End of year exams!!

BTEC
(Need Grade 5 in Computer Science)

Other post 16 options – Apprenticeships, other A level subjects, other BTEC subjects, other training, College.

Revision and consolidation of learning

Operating Systems and Utilities
Drivers, User Interfaces, Utlity Software, Degragmentation

Protocols
IP Addresses, Packets, Networking layers, TCP/IP

Data Representation
Binary, Hexadecimal, Denary, ASCII code, Image and Audio properties, Compression techniques

The CPU
Von Neumann architecture, Fetch-execute cycle, Random access memory

Ethical, Cultural, environmental and Legal Issues
Ethical issues, e-waste, Digital Divide, Legal acts, proprietary software, open-source software

Threats
Social Engineering, blagging, phishing, malware, DOS, SQL injection, Encryption

Networks
LAN & WAN, Peer2Peer, Client Server, NICs, Bandwidth

Primary and Secondary Storage
RAM, ROM, Storage Types, Storage Devices

YEAR 11

YEAR 10

Advanced Vector Graphics
Using Inkscape
Sonic the hedgehog
Light and dark
Complex images
Bitmap trace
Advanced effects

Programming Challenges

Programming Fundamentals
Iteration and loops, trace tables

Searching and Sorting Algorithms
Binary Search, Linear Search, bubble sort, insertion sort, merge sort

Boolean Logic
Logic Gates, Logic Circuits, Truth Tables, AND/OR/NOT

Programming Languages and IDES
Low level languages, high level languages, Instruction Set, Opcode and Operand

Media Animations
Move, rotate, scale, colour
Animations, names, parenting
Complex models, and colours
Organic Modelling
Lights, camera, render,

Algorithms
Computational thinking, Decomposition, Abstraction, Sequence, Selection, iteration

Data Types
String manipulation, Index, String traversal, Concatenation, Casting

Creating Robust Programs
Authentication, Validation ,Maintainability, Modular testing, Iterative testing

Representations – going audio to visual
Binary mosaic
Colour
Collage

YEAR 9

National Curriculum Compliant

Year 9 examination

National Curriculum Compliant

Year 8 examination

Mobile App Development
App for that
Tappy tap app
School lab studios
User Input
App development
Completion

Cyber Security
You and your data
Social Engineering
Script Kiddies
Rise of the bots
There's no place like 127.0.0.1

SIRI Project
More advanced coding skills
IF Statements
Completion
Evaluation

Intro to Vector Graphics
Shapes
Paths
Icons

Scratch Project 2
You've got the moves
Fly cat fly
Loop de loop
Treasure those lists

Introduction to Python (RPi)
Python coding
basic skills e.g. display, create a variable
Response to a variable
Tme delays
Evaluation skills

5. Representation – clay to silicon 1. Across time and Space
2. Lights and drums
3. Binary digits
4. Numbers in binary
5. Large quantities
6. Turing's mug

YEAR 8

Zoo Project
Internet research
Reliability of sources
Creation of digital artefact
Vector Graphics introduction
Evaluation

Computer Systems
Get in gear
Under the hood
Orchestra conductor
Its only logical
Thinking machines
Sharing

Mobile Phone Technology
Features and specification
Using Apps
GPS and 4G/5G
Coverage
Data Transfer

Year 7 examination

National Curriculum Compliant

Use of Algorithms
Everyday algorithms
Flowchart representation

Impact of Technology
Introduction, email
Room rules
Respectful Communication
Cyberbullying
Impersonation Online

YEAR 7

Scratch Project 1
Programming, Sequencing, Variables, Selection, Operators, Iteration, Problem Solving

Networks
Protocols
Hardware
Wireless networks
Internet
World wide web

Spreadsheet modelling
Quick Calculations
Collecting Data,
Data Master
Level up data skills

welcome