ICT and iMedia Knowledge Map

What's the 5 year intention? Our curriculum has a strong emphasis on the cumulative acquisition and contextualisation of knowledge.

Light Hall School
The best from everyone, all of the time.

The Big Knowledge Picture

Year 7 → Year 11

- Introduction to computer system and basic office tools
- E-Safety – staying safe
- Computer hardware
- Control & Algorithms
- Programming - basics
- Web design
- Programming
- Digital Artefacts
- E-Safety
- Computer hardware
- Binary & Character Set
- Algorithms
- Legislation & Digital Graphics
- System Security
- Computing Project
- R081
- R082
- R087

The KS3 Big Questions

Year 7 → Year 9

What is the difference between Cyberbullying and traditional bullying?
What is the difference between RAM & ROM?
What are the main programming constructs?

What are the purpose, use and content of digital artefacts?
Explain the positive impact that technology has had on our lives
Explain the difference between ASCII and Unicode

What is are the steps in a binary search?
What are the main piece of legislation
What are the main threats to a computer system? How can you prevent them?

The KS4 Big Questions

Year 10 → Year 11

- What are pre-production documents?
- Compare the characteristics of them
- Assess the suitability of the pre-production document

YEAR 11

R087 Multimedia

Evaluate the strengths and weaknesses of the final multimedia product

When evaluating the product look back at the client requirements and see if it meets them

The final product should match the plans that have been designed

Target audience is a major design element and influences all planning choices

Multimedia products are used in businesses – kiosk machines as well as Sat Navs and Virtual Tours which businesses often use

Folder structure and file names are important

Assets need to be resized to 300DPi so that they are suitable for publishing

Produce the multimedia product meeting the design brief

Produce a mind map of the client requirements based on the design brief

What hardware is used when creating a multimedia product?

What is the purpose of multimedia products?

R082 Digital Graphics

Some files types like TIFF are better for publishing while types like GIF are web based.

Target audience impacts all design elements such as house style and content

Coursework should have name and candidate number on and should be check for error, all internet research should be referenced.

Compare different graphic files types

Who is the target audience and how will you meet their needs?

Recommend valid improvements to the digital graphic

Evaluate the produced graphic

Produce a work plan based on the given scenario

Trademark – using a brand/name that belongs to someone

File types include TIFF and JPEG

What legislation applies to the creation of digital graphics?

What is the difference between lossy and lossless compression?

Compare the characteristics of different digital grapes?

GCSE Exam and Post 16 Destination

YEAR 10 KEY STAGE 4

Project

What is Computational Thinking?

How do you carry out different types of testing?

Decomposition is about breaking the task down into small manageable chunks, there are many ways to do this.

If there is a byte of data and additional data is added it can cause an error or overflow

What is an overflow in Binary Adding?

R081 Pre-Production

Pre-production documents are used at the beginning of the product cycle

The difference between a storyboard and script is a storyboard doesn't have to have speech

Key elements of target audience are age, gender, ethnicity and income

5 main purpose of digital graphic: entertain, inform, educate, promote & advertise

What is the purpose, use and content of pre-production documents

Assess the strengths and weaknesses of the given document

What are the client requirements of the given scenario?

Data Rep

HEX uses a base 16 number system and bridges the gap between binary and denary

How do you convert into HEX?

Computer Hardware

Clock speed shows how many instructions can be carried out by the computer per second.

FDE Cycle is also know as the instruction cycle – this is the main function of the CPU

How can a computer systems performance be improved?

What is the purpose of the FDE Cycle?

What are the characteristics of the CPU registers?

System Security

A network attack is an attempt to gain access to, steal, modify or delete data on a network

How do you prevent the threats?

What are the main threats to a computer system?

Legislation & Digital Graphics

Computer Misuse Act deals with hacking and viruses

The Data Protection Act was replaced with GDPR in 2018

What are the main principles of the DPA?

What are the characteristics of different digital graphics

Algorithms

The main searching algorithms are Binary and Linear

Compare the characteristics of searching and sorting algorithms

YEAR 8

Web Design

How do you write HTML?

Hyper Text Mark-up Language

What makes a good website?

There are over 1.8 billion websites

Programming

Python was designed because it was similar to pseudocode

Pre-Production Documents are used as the first steep in planning a project

How do you convert instructions into programming code?

What is the purpose of testing?

What is the purpose, use and content of different digital artefacts?

Python is a High-Level programming language

Keywords when writing pseudocode: IPNUT, OUTPUT, IF, THEN, ELSE

Flowcharts are visual representations of algorithms

An algorithm is a set of instructions which is used to create a program

What are the main programming constructs?

What is Pseudocode?

What are the main flowchart symbols?

What is an algorithm?

Control & Algorithms

Computer Hardware

Technology has created jobs and allows people to work from anywhere

The central processing unit controls is the part of the computer that allows it to function

Embedded systems are present in everything we do – cooking, cleaning, telling the time

What impact has technology on the world? Discuss the positives and negatives

What are the characteristics of the CPU?

What is an embedded system?

What is the difference between RAM & ROM?

What is the difference between input and output devices?

What is a 'Digital Footprint'?

E-Safety

A computer system is made up of INPUTS – PROCESSES - OUTPUTS

When posting pictures think about what the picture shows – it can be dangerous

E-Safety is about keeping you safe online

What is the difference between cyberbullying and traditional bullying?

YEAR 9

Binary

Binary is number 2 based system (0 or 1), whereas denary is a number 10 based system (0-9)

How do you convert between Denary and Binary?

Why do we use HEX?

Character Sets

A character set is a table of data that links characters to numbers

What is the difference between ASCII and Unicode?

YEAR 7

E-Safety

Excellence • High expectations and aspirations • Love of Learning • Active participation • Sound moral compass