# **Presentation notes**

Some of the key overarching aspects of Computer Science are given at the start of the presentation.

* Maths is included as GCSE CS requires an ability to perform calculations.
* For degree courses at top universities, Maths will be one of the expected A-levels required.
* CS and programming are creative subjects that require novel ingenuity to solve problems
* Most programmers in businesses are now working in teams, so the subject is far more sociable than many people think

CPU/Chip design is a highly specialised area of CS and Electronic Engineering. Although most people have heard of Intel, ARM is one of the major players in chip design and based in the UK. With more and more devices in the Internet of Things (IoT), this demand will only grow. Students may have also heard of the Raspberry Pi which uses an ARM processor.

Drones are currently a popular toy. They have many other uses such as checking damage to verify insurance claims, for farmers to check their fields/crops/livestock and for military purposes.

Robotics is becoming increasingly prevalent in our lives. Today they are cleaning our homes and cutting our lawns, but in the future, they may well be used in nursing homes to assist with care as well as analysing data.

Although the World Wide Web is three decades old, its growth is still expected to be phenomenal in the future. Students are still able to think up innovative ideas and compete with the largest companies in the world.

Augmented reality (AR) was shown to full effect with children walking around trying to find Pokémon. However, in the future, it is likely that more functional uses will appear. This has already started to happen in aircraft and cars. In the future AR is likely to be used in even more innovative ways.

CS is one of the best routes into entrepreneurship. It is possible to take a concept and start a business with no investment and just one home computer. Of the top 10 wealthiest people in the world, notice how many started in IT and had a firm grasp of programming:

* Jeff Bezos (£112 Billion) – Founded Amazon in his garage
* Bill Gates ($90 Billion) – Co-founder Microsoft, founded with his friend Paul Allen
* Mark Zuckerberg ($71 Billion) – Co-founder Facebook, with his student roommates
* Carlos Slim Helú ($67 Billion) – Telecoms investor – found that a background in linear programming gave him the edge in the business world
* Larry Ellison ($59 Billion) – Co-founder Oracle, makers of database software

The UK has a strong history of computer games that is still thriving to this day. Similar talent is also used in our TV and film industries. Historically, the UK has also been strong in producing computers. AMSTRAD CPC, BBC Micro, Sinclair ZX81/Spectrum were all from UK manufacturers.

Companies currently have a huge demand for people with Computer Science and IT skills, especially in programming, cyber-security and graphic design. These are some of the most in demand jobs in the UK in 2022 (https://www.corr-recruitment.co.uk/5-jobs-that-are-in-high-demand-in-the-uk-2022/).

There are fantastic opportunities for those who wish to study and excel in CS. Everyone today is a **consumer** of CS and IT products. Only some of those people have the joy of **producing** those products.

# Vocational qualifications

Two of the popular vocational qualifications for level 1/2 that are GCSE equivalent are given below.

## OCR Nationals in Creative iMedia Level 1/2

This qualification requires three modules, one of which is optional. It takes students through the many stages of pre-production which is assessed in an examination. The compulsory practical assignment is based around graphics, with one optional units being in a diverse range of subjects such as interactive digital media products or comic book creation.

Britain’s digital creative industries, which include film, TV, music and advertising were worth more than £104 billion per year in 2022. Students studying such courses will be preparing for a high growth and internationally well-respected area of the economy.

## BTEC Level 1/2 Tech Award in Digital Information Technology

This qualification has three components, one of which is an examination. Students study project planning, design and create user interfaces and dashboards to present and interpret data.

Topics on the examination consider many aspects that are essential to IT in industry from cybersecurity to law, ethics and policy. With 39% of businesses in 2021 experiencing a cyber breach or attack, this a growing area of specialism within the UK. Students studying such courses will be developing skills that are sought after and in growth areas of the economy.