

AAQ Information

Technology

Transition Tasks



Name		
	Completed	Teacher signed off
Intro & Resources		
Cornell Notes		
Application Task		
Research Task		
Wider Reading Task		

Any questions please email: CHH@churchdownschool.com & DET@churchdownschool.com

Introduction

This pack contains a programme of activities and resources to prepare and ready you to start AAQ IT in September, you should spend 1 hour on each of these tasks.

At Churchdown School we study Edexcel AAQ Information Technology (Extended Certificate)

The specification can be found using this link and you must be familiar with it, for page references see units below:

[L3 AAQ BTEC Nat IT Ext Cert Spec](#)

AAQ information Technology is split up into 4 units:

Unit 1: Information Technology Systems (pages 29-44)

Unit 2: Cyber Security and Incident Management (pages 45-82)

Unit 3: Website Development (pages 83-96)

Unit 4: Relational Database Development (pages 97-108)

Many different skills will be developed during all these units, including extended writing, problem solving, recalling key terms, understanding how and why about certain topics and applying them to all areas of IT. These skills are some of which you will gain which will help you in later life if you go into any form of Computing field but any other direction too.

Resources:

All resources will be supplied by school either in a physical copy that you can borrow or as a digital copy you will be able to access from school or home.

Below is a selection of movies/books/online videos/social media accounts that should appeal to a computer scientist – someone with a problem solving and inquisitive mind who wants to understand how technology can change and better our lives. Have a browse below and keep up to date with developing news or interesting stories:

Movies/TV Shows

Explained (2018) – Netflix's – episode 6 called "Coding" – A history of the evolution of computer coding and predictions for how coding can shape the future.

Imitation Game (2014) – Based on a true story. Alan Turing, a British mathematician, joins the cryptography team to decipher the German enigma code.

The Matrix (1999) – A computer programmer led to fight a war against computers who constructed his entire reality.

The Martian (2015) – Astronauts leave behind one of their team presumed dead. However still alive Mark Watney uses a meagre amount of supplies to survive on the hostile planet.

Social Media

Microsoft – Instagram

BCS The Chartered Institute for IT @bcs – Twitter

@BBCTech – Twitter

@HansVestberg – Twitter – Hans Vestberg the Verizon CEO and former Ericsson CEO tweets about wireless and 5G news, as well as company updates

@Dr_Black – Twitter – Professor Sue Black a professor of computer science at UCL who tweets about tech and computer science.

@sundarprichai – Twitter – Sundar Pichai CEO of Google

@sirajraval – Twitter – Siraj Raval co-founder of Sage Health who tweets on AI news and trends.

Note taking practice task

The Cornell method of note taking

The expectation to do independent research at A Level will increase dramatically from GCSE.

There is a real skill to taking decent notes outside of lesson which are of value. Research has proven that one of the most effective methods is the “Cornell” note taking method.

1. To start download the “Cornell note taking template” from Craig n Dave:
 - <https://craigndave.org/cornell-note-taking/>
 - Watch the following two videos from Craig ‘n’ Dave:
 1. Video 1: [Need for operating systems](#)
 2. Video 2: [Types of operating systems](#)
 3. Video 3: [Device Drivers](#)
 4. Video 4: [Introduction to databases](#)
2. Write the title of the video and its topic in the top boxes (use a different sheet for each video).
3. In the main “Notes” section, write notes from the video. You can do this in any way you like, a suggestion might be to rewind slightly when the canvas changes, thinking carefully about what was important in the previous few minutes.
4. Having recorded the notes, review them:
 - Turn each part into a question in the section on the left.
 - For example, the notes may say, “The value of the program counter is passed to the memory address register”.
 - The question then becomes, “which register is the value of the program counter passed to?”
 - Sometimes these questions are easy, and at times they are more difficult to write.
 - There may also be more than one valid question.
 - You will need to decide for yourself which are the most appropriate questions for revision.
5. Finally pull out all the key words and their definitions words the notes and list them in the bottom section.

Application Task

1. True or False: “ A user interface is the software that allows users to interact with a computer”
2. State the two roles that the OS has to manage
3. State the two main types of software on a computer. A _____ & U _____
4. Identify the type of OS that: “Allow more than one person to use a computer at the same time”
 - a. Real time
 - b. Multi-user
 - c. Embedded
 - d. Multitasking
5. Identify the type of OS that: “Each active program is scheduled to receive a tiny time slice in quick rotation, giving the impression they are operating at the same time”
 - a. Real time
 - b. Multi-user
 - c. Embedded
 - d. Multitasking
6. Define the term device driver
7. Define the term database
8. What part of the table is records:
 - a. Table
 - b. Rows
 - c. Columns
9. What is the name of the link between tables?
10. A record needs to be uniquely identified by what type of key?
11. A table has a relational link to another table, what type of key?
12. Identify a benefit of a database
13. Identify the type of database “single table”
 - a. Flat file
 - b. Relational
14. Identify the type of database “multiple tables”
 - a. Flat file
 - b. Relational
15. State a disadvantage of a flat file database
16. One to one is a type of relationship within a database. State another

Research – Website Development

Within Website Development course you will understand how different design principles can affect the appearance and aesthetics of a website. Website designers need to consider the following principles to make sure that the websites are not overcrowded and difficult to use as this can detract users.

These design principles include:

- Usability
- White space
- Site layout
- Accessibility
- Spacing
- Navigation
- Typography
- Consistency
- Alignment
- Clarity
- Accuracy
- Content
- Media
- Simplicity

Research these and produce a written report on 3 of the design features, consider the following in your report:

- Explain 3 of these design principles
- Explain how EBay uses these design principles in their website
- Explain how Amazon uses these design principles in their website
- Compare and contrast how both websites use the 3 design principles you have chosen.

The report should be:

- Work should be typed up
- A minimum of an A4 page (font size 11)
- Include images/screenshots to help explain your ideas and research
- All references used must be included

Example reference:

Webpage:

Author, A.A (Year, Month Day). Title of webpage. Website Name. URL

Book:

Author, A.A. Year of Publication). Title of work: Capital letter also for subtitle. Publisher

[Harvard Reference Generator Tool: Easy Harvard-style referencing created for essays, reports and dissertations :: Neil's Toolbox](#) – you can also use the following website to build up the reference instead.

Wider Reading – Cyber Security

Within your Unit 2: Cyber Security and Incident Management you will learn about the different types of threats, legal requirements, impact to business of a security breach and methods used to mitigate against these. You must understand cyber security incidents that are happening around the UK and the world.

Threats fall under 2 main categories:

- Internal – employee actions (sabotage, deliberate and accidental)
- External – data theft, destruction of data, disruption of systems by competitors, cyber criminals, terrorists, social engineering, physical security, unauthorised.

Read about real-life examples of threats that have happened to businesses:

- Find two different types of threats in each category (x2 internal and x2 external)
- Ensure you cover the following areas:
 - Name of the business
 - Type of threat that affected them
 - What happened?
 - How did it affect their day-to-day running of the business?
 - What legal, financial or reputational impacts did that business have?

The following websites might be a good starting point:

- [The National Cyber Security Centre | National Cyber Security Centre](#)
- [National Institute of Standards and Technology](#)
- [OWASP Foundation, the Open Source Foundation for Application Security | OWASP Foundation](#)

The report should be:

- Work should be typed up
- A minimum of an A4 page (font size 11)
- Include images/screenshots to help explain your ideas and research
- All references used must be included Initial research can be conducted using BBC Technology website.

Example reference:

Webpage:

Author, A.A (Year, Month Day). Title of webpage. Website Name. URL

Book:

Author, A.A. Year of Publication). Title of work: Capital letter also for subtitle. Publisher

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