SIXTH FORM SUMMER TRANSITION TASK

IT, CAMBRIDGE TECHNICAL

Qualification Level	Level 3, Introductory Diploma
Exam Board/ Syllabus	OCR
Contact(s)	Mr McGrory and Mr Cornelius
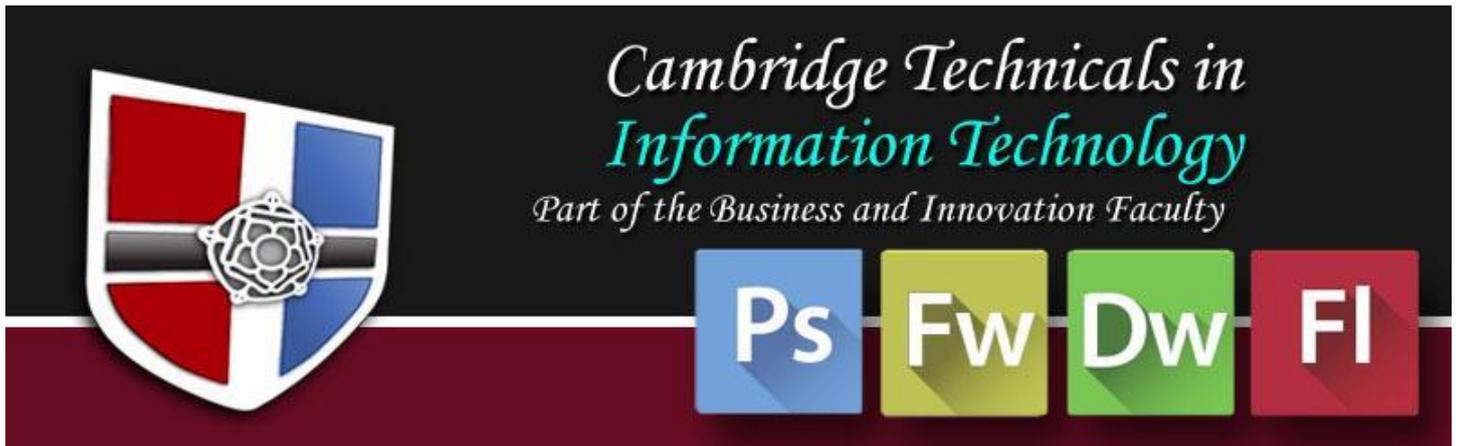
Cambridge Technicals in Information Technology Summer Transition Task

Welcome to **Cambridge Technicals in Information Technology**. This task will form part of the coursework evidence required for **Unit 12; Mobile Technology**. The task will be graded at Pass/Merit/Distinction and the expectation is that you achieve your Target Grade.

The aim of this unit is to broaden your knowledge and understanding of the wider potential of mobile technologies and its consequences to people and businesses. This unit is as much about new technologies as it is about promoting critical analysis of existing situations and proposing better solutions.

To pass Learning Objective 1 you are required to demonstrate your understanding of mobile technology. These include the factors that affect how your phone connects to the internet, or how a computer is joined to a server system. For this task you must write a **formal report, using Google Docs** with information under all of the sections below.

The report must be properly formatted, written in your own words, include the relevant headings and a bibliography referencing all of the sources used for research. **Bold headings** are main section areas and these need a general introduction. The **bullet points are sub-sections** and each **needs a paragraph** explaining the topic.

Presenting Your Work

Work will **not** be accepted, unless you follow this guidance;

- Work must be **word processed** as a formal report using **Google Docs**

- Put **Unit 12 Mobile Technology** in the page header

- Put your **full name** and **candidate number** (if known) in the page footer.

- **Page 1** must be a **title page**, with the following information on;
    - Unit 12 Mobile Technology
    - Cambridge Technicals - Level 3 Information Technology (2016)
    - Full Name
    - Candidate Number
    - Sponne School 27258

- **Page 2** must be a table of contents (using the 'insert' menu)

- Main text must be no bigger than point size 12.

- The last page of your report must include a **full list** of any websites/ books you used to help you complete the tasks.

- All work **must be your own**; copy and paste from resources will result in a U grade.

Report Topics - A Summary

1. **Understanding Mobile Technology**

    - Write at least two paragraphs introducing mobile technology and its usage in society. You should reflect on your own use of mobile technology and how it impacts your own life.

1.1 Mobile Devices

- Identify and describe the following mobile devices; *smartphone*, *phablet*, *tablet*, *sat-nav*, *smartwatch*, *netbook*, *laptop*.

- You must refer to actual examples (naming the manufacturer and model), describing their inputs and outputs and device pros and cons.

1.2 Mobile Connectivity

- Compare and contrast wired to wireless connection methods. Then explore a wide range of different mobile connectivity methods and their characteristics.

1.3 Mobile Device Operating Systems

- Define what an Operating System is, and explore five key areas; *Android, Windows, iOS, Linux* and *Future Operating Systems*. Focus specifically on mobile Operating Systems.

- For each, you must explain their characteristics, features, advantages and disadvantages

1.4 Current and Potential Future Uses of Mobile Technology

- Evaluate how mobile technology can impact wider society, including making predictions about how mobile technology might improve and develop. You must cover at least 8 of the topics provided.

Use relevant images to support your answers throughout the report.

Report Topics - Full Details

When completing each section, make sure all of the following keywords/ topics have been used and covered in good detail. Use it as a checklist to make sure you have covered everything.

1.1 Mobile Devices	- Smartphone - Phablet - Tablet - Sat-nav - Smartwatch - Netbook - Laptop	For each device, consider; o Device size o Embedded o Active versus passive o Use of inputs (mini keyboard, voice recognition, touchscreen) o Use of outputs (screen, audio, vibration alerts) o Summary of device pros and cons You should talk about devices in general, as well as mentioning specific models.
1.2 Mobile Connectivity	- Comparison of wired vs. wireless connection including; - number of users, range, mobility, security, ease of access - Cellular technologies; - CDMA, TDMA, GSM, CDS - Routing; - IP addresses, IPv4 compared to IPv6, DHCP compared to static IP, Subnet Mask, Default Gateway, MAC address - Network characteristics; - Bandwidth, latency, jitter, reliability - Standards; - GPS, 3G, 4G, 5G, Wi-Fi, Bluetooth, USB 1.0/ 2.0/ 3.0 - Limitations, ranges and uses of different standards; - Signal strength - Effects of distance and intervening objects - IEEE 802.11 - Frequencies (2.4GHz, 5GHz) - Channels and interference - RF characteristics (modulation, bandwidth, wavelength, amplitude, phase) - Preparation theory (absorption, refraction, reflection, interference) - Antennas (Omni-directional, semi-directional, bi-directional)	
1.3 Mobile Device Operating Systems	- Android - Windows - iOS - Linux based (e.g. Sailfish OS, Ubuntu Touch) - Future Operating Systems - Characteristics - Features - Advantages - Disadvantages	

1.4 Current and Potential Future Uses of Mobile Technology	- IoT (Internet of Things) - Smart city - Tagging endangered species - Robotic devices - Sat-nav - Consumer internet - GPS - Health monitors - CCTV - Drones - ATC and TCAS - Stock control and theft reduction with RFID - Car trackers - Electronic tagging of offenders - Cars e.g. self drive, traffic updates

Assessment Criteria

	Pass (E)	Merit (C)	Distinction (A)
Assessment Criteria	I will describe the different methods of mobile device connectivity	I will compare and contrast different Operating Systems used in mobile technology	I will evaluate the suitability of mobile technology for different situations
Section Headings	1.1 Mobile Devices 1.2 Mobile Connectivity	1.3 Mobile Device Operating Systems	1.4 Current & Potential Future Uses of Mobile Technology

Reminders

- Proof-read your work as you type.
- Spell check (F7) regularly
- Make sure you have used headings and sub-headings.
- Make sure main text is no larger than point size 12.
- List all research sources in the bibliography at the end of the report.
- Avoid using Wikipedia.