**Cambridge Technicals in IT**

**Summer Transition Task 2020**

# INTRODUCTION

Welcome to **Cambridge Technicals in IT**. 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, ONE DRIVE** with information under all the sections below.

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

# ASSISTANCE

Any queries regarding this course, and the transition task should be

 sent to; LDavies@kingswoodsecondaryacademy.org

# PRESENTING YOUR WORK

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

● Work must be **word processed** as a formal report using **One Drive.**

## ● Put Unit 12 Mobile Technology in the page header

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

* **Page 1** must be a **title page**, with the following information on;
* Unit 12 Mobile Technology
* Cambridge Technical - Level 3 IT (2016)
* Full Name
* Candidate Number
* 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 - 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 TOPIC – FULL DETAILS

When completing each section, make sure all 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 * Embedded
* Active versus passive
* Use of inputs (mini keyboard, voice recognition, touchscreen)
* Use of outputs (screen, audio, vibration alerts)
* 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;  o number of users, range, mobility, security, ease of access Cellular technologies; o CDMA, TDMA, GSM, CDS Routing; o IP addresses, IPv4 compared to IPv6, DHCP compared to static IP, Subnet Mask, Default Gateway, MAC address Network characteristics; o Bandwidth, latency, jitter, reliability Standards; o GPS, 3G, 4G, 5G, Wi-Fi, Bluetooth, USB 1.0/ 2.0/ 3.0 Limitations, ranges and uses of different standards;o Signal strength o Effects of distance and intervening objects o IEEE 802.11 * Frequencies (2.4GHz, 5GHz) o Channels and interference
* RF characteristics (modulation, bandwidth, wavelength, amplitude, phase)
* Preparation theory (absorption, refraction, reflection, interference)
* Antennas (Omni-directional, semi-directional, bidirectional)
 |
| **1.3 Mobile** **Device** **Operating** **Systems**  | * Android
* Windows
* iOS
* Linux based (e.g. Sailfish OS, Ubuntu Touch)
* Future Operating Systems

o Characteristics o Features o Advantages o 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
 |

# REMINDERS

* Proof-read your work as you type.
* 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.