

# Southam College Computing & ICT Department

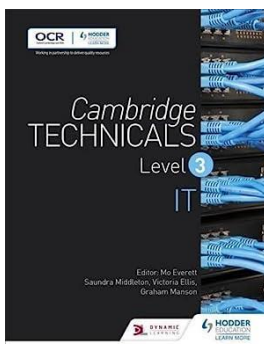


## Summer Project

This booklet provides several tasks for you to update your current knowledge and learn new concepts required for A Cambridge National

Please complete the research and tasks. These will form the basis of a suitability test when you return in September.

Bring this booklet back in for checking on your first lesson in September.



You will find the following book invaluable and will support you throughout your two year course.

## Section 1 - Computer Hardware

Computer hardware can be defined as any component that the user can physically touch. These are generally broken down into Input & Output devices.

An Input device allows the user to interact with the computer system by entering data whereas an Output device allows the computer system to provide the user with information, data or instructions.

**Task 1** - The following is a selection of input and output devices. Complete the table indicating with a tick as to whether they are input or output devices plus briefly explain what its purpose is.

Device	Input or Output	Purpose
Speaker		
Mouse		
Keyboard		
Monitor		
Plotter		
Headphones		
Printer		
Scanner		

Sensor		
Microphone		
Barcode Reader		
Graphics Tablet		

**Task 2 - Research, identify, state and explain at least two different input and output devices specifically engineered for people with disabilities.**

Name of Input Device 1:

Explanation:

Name of Input Device 2:

Explanation:

Name of Output Device 1:

Explanation:

Name of Output Device 2:

Explanation:

Another part of a computer system is storage. Storage can generally be divided into two categories: Primary and Secondary.

**Task 3 - Using the tables below, research and complete the table to explain the features and purpose of the storage identified:**

**Primary Storage**

Random Access Memory (RAM)	
Read Only Memory (ROM)	

**Secondary Storage**

Magnetic	
Cloud	
Solid State	
Optical	

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**Task 4 - Question:**

Alicia is using a helmet mounted camera to record footage whilst snowboarding. Suggest two reasons why a flash memory card is a good choice for secondary storage in this scenario, and two reasons why a hard disk would be unsuitable

**Answer:**

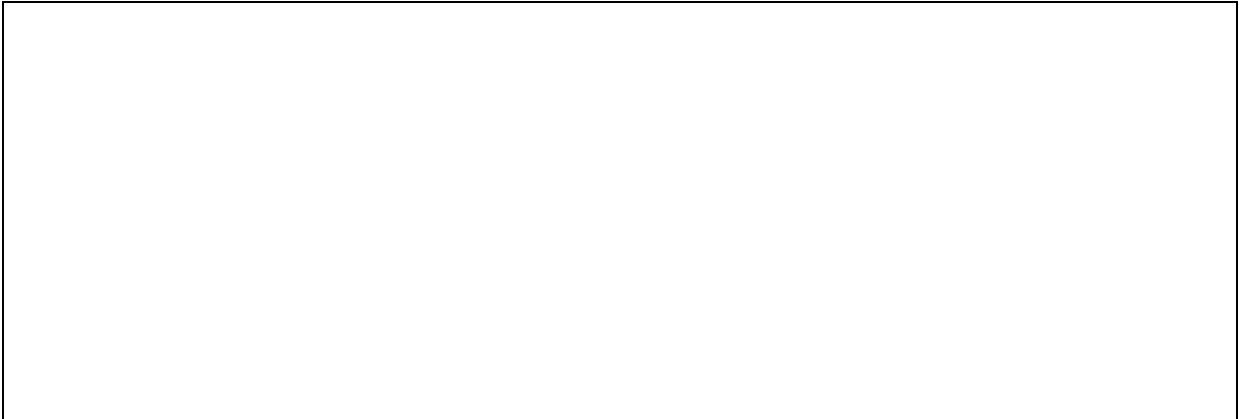
**Section 2 - Software**

There are many different types of software and how these can be classified.

**Task 5 - Consider the different software classifications below and describe how each differ:**

Open Source 'vs' Closed Source

Off The Shelf 'vs' Bespoke

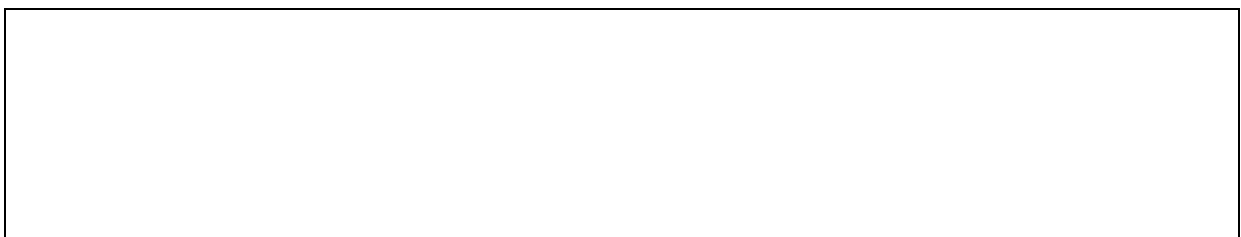


Shareware 'vs' Freeware



Software is more commonly known as Application Software (or Apps for short)

**Task 6 - Define the term 'application software'**



**Task 7 - The following is a common list of application software that you may use quite frequently. For each describe its main purpose:**

Word Processor:

Spreadsheet Packages:

Presentation Software:

Desktop Publishing Software (DTP):

Web Browsers:

One major piece of software on most computer systems is the operating system

**Task 8 - Define what an operating system is:**

### Section 3 – Networks

Networks are collections of connected computing devices. They consist of a number of devices known as nodes, which are mostly made up of various computers, but can also include shared peripherals such as printers, scanners and secondary storage devices.

Networks can be implemented in a variety of topologies depending upon how they need to be used. Each with their own advantages and disadvantages.

**Task 9 – For each of the following network topologies draw a diagram of its layout and describe one advantage and one disadvantage for each.**

Bus:

Star:



Ring:

Mesh:

**Task 10 – Define a LAN, WAN, MAN and PAN (do not just state what the acronym means!).**

LAN:

WAN:

MAN:

PAN:

For networks to function successfully there have to be rules and standards that must be followed. These are known as 'Protocols'. One common protocol is the TCP/IP stack model. This governs how data should be formatted, addressed and routed across a network. This model makes use of four layers (Application, Transport, Internet & Link).

**Task 11 - Using the table on the next page, explain how the TCP/IP stack model works and describe each of the layers involved**

Explain the TCP/IP stack model:

Layer	Purpose
Application	
Transport	
Internet	

Link	

### Section 4 – Threats To Computer Systems

All computer systems come with a degree of insecurity, some larger than others. Each of these threats are usually aimed at targeting one aspect of the computer system.

**Task 12 – Explain each of the following security threats and what they are specifically targeting:**

Phishing:

Hacking:

Virus:




**DON'T FORGET TO HAND THIS IN WHEN YOU RETURN IN SEPTEMBER**