Standard Grade Computing: Learning Outcomes

General purpose Packages

Word processing

Learning Outcome	G	A
I can describe the benefits of using a computer		
I know the meanings of: **insert**, **amend** and **delete** when using a word processor		
I know that **WIMP** stands for Windows Icons Mouse Pull-down-menu		
I can explain when you would use a **Standard Paragraph**		
I can describe the steps in creating a **Standard Letter** (Mail Merge)		
I know when you should use a **Header** or a **Footer**		
I can explain why **standard file formats** are needed when sharing data between applications		
I can explain the difference between an **integrated package** and a **stand-alone** application		
I know when you might use **Search and Replace**		
I can describe how a **spell checker** works		
I know when you might use a word processed **template**		
I can describe advantages of a **Graphical User Interface (GUI)**		

Spreadsheets

Learning Outcome	G	A
I know the difference between **rows** and **columns** in a spreadsheet		
I know that cells can contain **labels**, **data** or **formulae**		
I know when you might use a **chart** to display information		
I know how to **replicate** a formula		
I know what **cell formatting** is available in a spreadsheet		
I can insert a row or a column in a spreadsheet		
I can explain the difference between **absolute** and **relative** cell references		
I know that a conditional formula takes the form of: **= if(condition, result1,result2)**		
I know when you might use **cell protection in a spreadsheet**		
I can explain the difference between **dynamic** and **static** data linkage		

Databases

Learning Outcome	G	A
I know the difference between a **file**, a **record** and a **field** in a database		
I know when you might use a **key field**		
I know how to calculate the **storage requirements** of a database		
I know when to use a **sort**, a **simple search** and a **complex search**		
I can describe a **calculated field**		
I can add a record to a database		
I can describe why **backups** a re needed		
I know that you can protect a database using **physical security**, **passwords** and **encryption**		
I know when you might use **online help** and **online tutorials**		
I know the difference between **data subjects** and **data users**		
I know about the **Data Protection Act** the **Computer Misuse Act** and the **Copyright Act**		
I know when you might use an expert system		

Computer Systems:

Learning Outcome	G
I can draw a diagram showing **input, process, output, memory** and **backing storage** and how data flows between them	
I can describe a number of **input** and **output** devices	
I know the difference between **Read Only Memory (ROM)**, **Random Access memory (RAM)**	
I know the difference between a **program** and its **data**	
I know how to sort **bit, byte, kilobyte, megabyte, gigabyte** and **terabyte** in order of size	
I can describe the **functions** of an operating system: **memory management, file handling peripheral handling** and providing the **User Interface** I can describe how computers store **numbers, text** and **graphics** I can describe a **hierarchical** filing system and why it is useful I can describe the **features** of **high level languages** I know why computers only understand **machine code** and why High Level Languages need to be translated I can describe backing storage devices such as **floppy disk, hard disk, CDROM, CDR, CD-RW and USB Drive**	
I know that the Central Processing Unit (CPU) is made up of an **Arithmetic and Logic Unit (ALU)** a **Control Unit** and **registers**	
I can explain the difference between **serial** and **random** access backing storage devices	
I understand what **Memory Addressing** means	
I know when you might use files or computers which are **Multi Access**	
I know when you might use **Multi Programming**	
I can describe the difference between a **mainframe,** a **desktop,** a **laptop** and a **palmtop** computer	
I know the hardware needed for **multimedia** and **virtual reality**	

Computer Networks:

Learning Outcome	G
I know the difference between a **Wide Area Network (WAN)** and a **Local Area Network (LAN)** I know when you might use a **modem** to connect to a network I know when you might use a **Network Interface Card (NIC)** to connect to a network I know what hardware would be needed for **Video Conferencing** I can describe how to use a **Search Engine** I can describe the **World Wide web (WWW)** I know that you need a **browser** to view web pages I know how to use **Email** responsibly I know that web pages are written using **Hypertext Markup Language (HTML)** I know that networks need to be kept secure using **passwords** and **encryption**	

Automated Systems:

Learning Outcome	G
I can describe the main moving parts of a robot	
I can explain why **sensors** and **feedback** are needed for robots	
I can describe the difference between an **open loop** and a **closed loop**	
I understand the term **Computer Aided Design / Computer Aided Manufacture (CAD/CAM)**	
I can explain **degrees of freedom** in a robot arm	
I can describe the safety precautions needed for robots	
I can describe why **adaptability** and **accuracy** are advantages when introducing robots into a manufacturing process	
I can explain the **short term costs** and **long term advantages** of introducing automated systems	
I can explain why robots need to be programmed using a specialised **control language**	
I can describe the advantages of using a **simulator** for dangerous or expensive equipment	
I know when you might use **real time processing** for an automated system	
I can describe the difference between **analogue** and **digital** data	
I know when you might use **ROM Embedded systems**	

Commercial Data Processing:

Learning Outcome	G
I can explain the difference between **data** and **information**	
I can describe the benefits of **Electronic Funds Transfer (EFT)**	
I can describe what kind of information is stored in **bar codes**	
I know the difference between **Interactive** and b**atch processing**	
I know when you might use **Magnetic Ink Character Readers (MICR)**	
I know when you might use **Optical Character Readers (OCR)**	
I can describe how **check digits** work	
I know the difference between **verification** and **validation**	
I can describe the different jobs of: Computer operator, Programmer, and **Systems Analyst**	
I can list the types of **running costs** needed for commercial data processing	

Programming:

Learning Outcome	G
I can explain why **internal documentation** is needed when writing software	
I know that the software development process consists of: **Analysis, Design, Implementation, Testing, Documentation, Evaluation** and **Maintenance** I know the difference between a **fixed** and a **conditional** loop I can use the three data types: **integer, real** and **string** to create variables I can use **simple** and **complex conditional statements** in programs I can use **arrays** to store data in a program I can explain why test data needs to be **normal, extreme** and **exceptional**	