

Information Technology

Transition Booklet
Year 11 to Year 12

"What a computer is to me is the most remarkable tool that we have ever come up with. It's the equivalent of a bicycle for our minds." - Steve Jobs

The UK's tech sector is growing at 2.5 times the rate of the rest of the economy creating exciting jobs that require a range of skills and talent - but the UK is still facing a major digital skills shortage. In order to effectively prepare our workforce in an ever-changing digital economy, we need to inspire and support people into digital roles.

'There are a number of vocational and academic pathways that can provide people with the right technical skills to flourish in the industry.



IT is at the heart of everyday life, at work, home and in our leisure time: from computer graphics and control systems, to communications and problem solving, IT has an ever-increasing role to play.

The Cambridge Technicals in IT draw this together through a wide range of units such as Information Systems, installing software, creating a website, computer systems, computer animation and developing computer games.

This qualification is suitable for students studying in preparation for employment in IT and also students wishing to gain a Level 3 qualification to support further study in Further Education and Higher Education in IT or in any other sector or subject area. This new qualification is particularly attractive because of its real-world relevance and close alignment with industrial practice.

What areas of IT can I work in?

With one million people employed in the UK's IT industry, now is a great time to specialise in an area that interests you. If you possess the relevant knowledge and technical skills, you could work in:

- applications development
- computer forensics
- content management
- cyber security and risk management
- data analysis and analytics
- game development
- geographical information systems (GIS)
- hardware engineering
- information management
- technical support
- telecommunications
- web design/development.

For instance, your job may involve creating applications or systems, solving problems with technology or supporting those who use it. Employers in the IT industry also require graduates to work in their business, marketing, human resources (HR) and finance functions.

Many IT professionals also choose to work outside the sector, such as in the IT departments of retail, finance, manufacturing and public sector organisations.

Who are the main IT graduate employers?

Large and global companies include:

- Accenture
- Amazon
- Apple
- Capgemini
- Cisco
- Cognizant
- Facebook
- FDM
- Fujitsu
- Google
- IBM
- Infosys
- Intel
- Microsoft

Cambridge Technical Certificate IT-Level 3- 2019 Transition Work

Preparation

Please bring the following to your first lessons.

- An A4 Lever Arch File
- 2 Dividers- label tabs Unit 1- Fundamentals of IT and Unit 2-Global Information
- Dividers for Unit 1- label tabs LO1, LO2, LO3, LO4, LO5
- Dividers for Unit 2- label tabs LO1, LO2, LO3, LO4, LO5, LO6

Unit 1 Task - Resource to use:IT-Cambridge-Technicals-Unit-1 pdf

Complete all questions and diagrams.

Your answers should be condensed (*summary of key points*).

Task 1 - Complete each definition below, use lined paper if your answer will not fit.

Unit 1-LO 1.1-Computer Hardware

COMPUTER HARDWARE

Input devices definition:

Keyboard description:

Mouse description:

Scanner description:

Sensors description:

Barcode Reader description:

Microphone description:

Touch screen description:

Infrared IR description:

Resistive description:

Capacitive description:

Visual Display Unit (VDU) description:

Output devices definition:

Printer description:

Plotter description:

Speakers and headphones description:

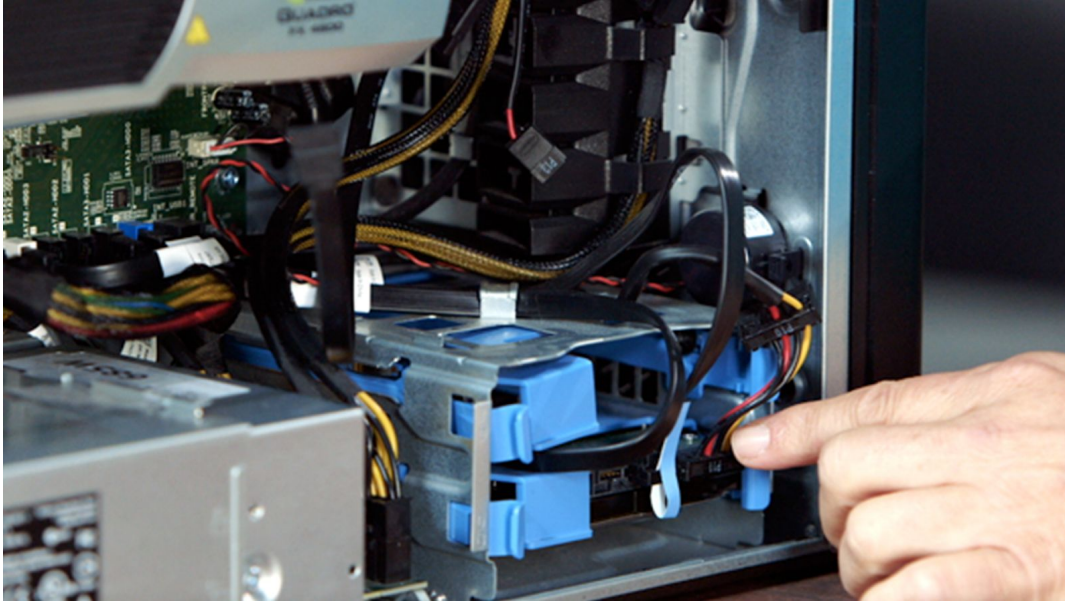
Braille description:

Task 2: Computer Hardware

Complete the table, put an x in the correct section:

Device	Input	Output	Communication
Modem			x
Braille terminal			
Sensors			
Graphics tablet			
Hub			
VDU			
Plotter			
Terminal adapter			
Barcode reader			
Network interface card			

Task 3: Computer Components



Key terms (for each one add a definition including an example/use)

Memory

Ports

Storage

What is the role of a CPU?

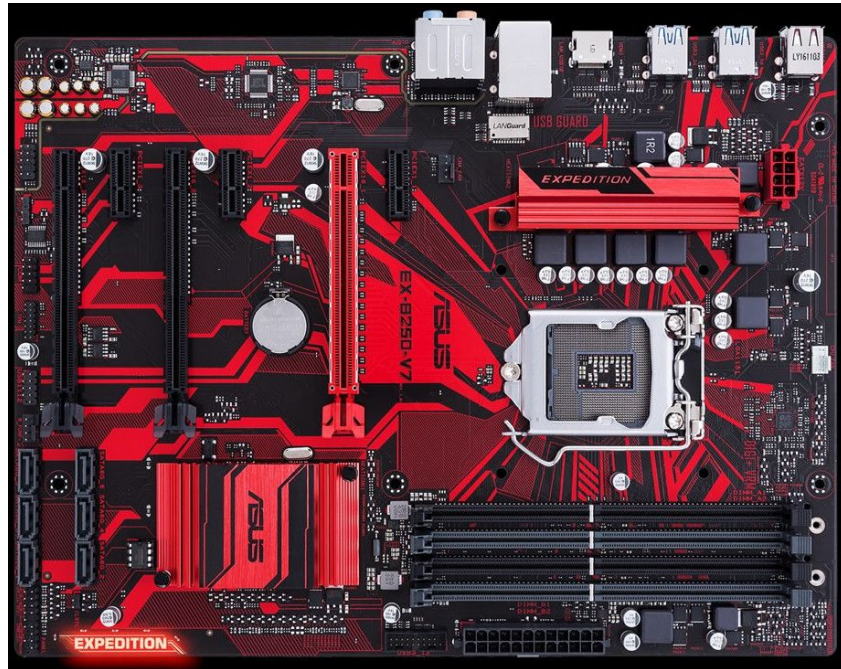
What are the components of a CPU and their purpose?

What is the role of a motherboard?

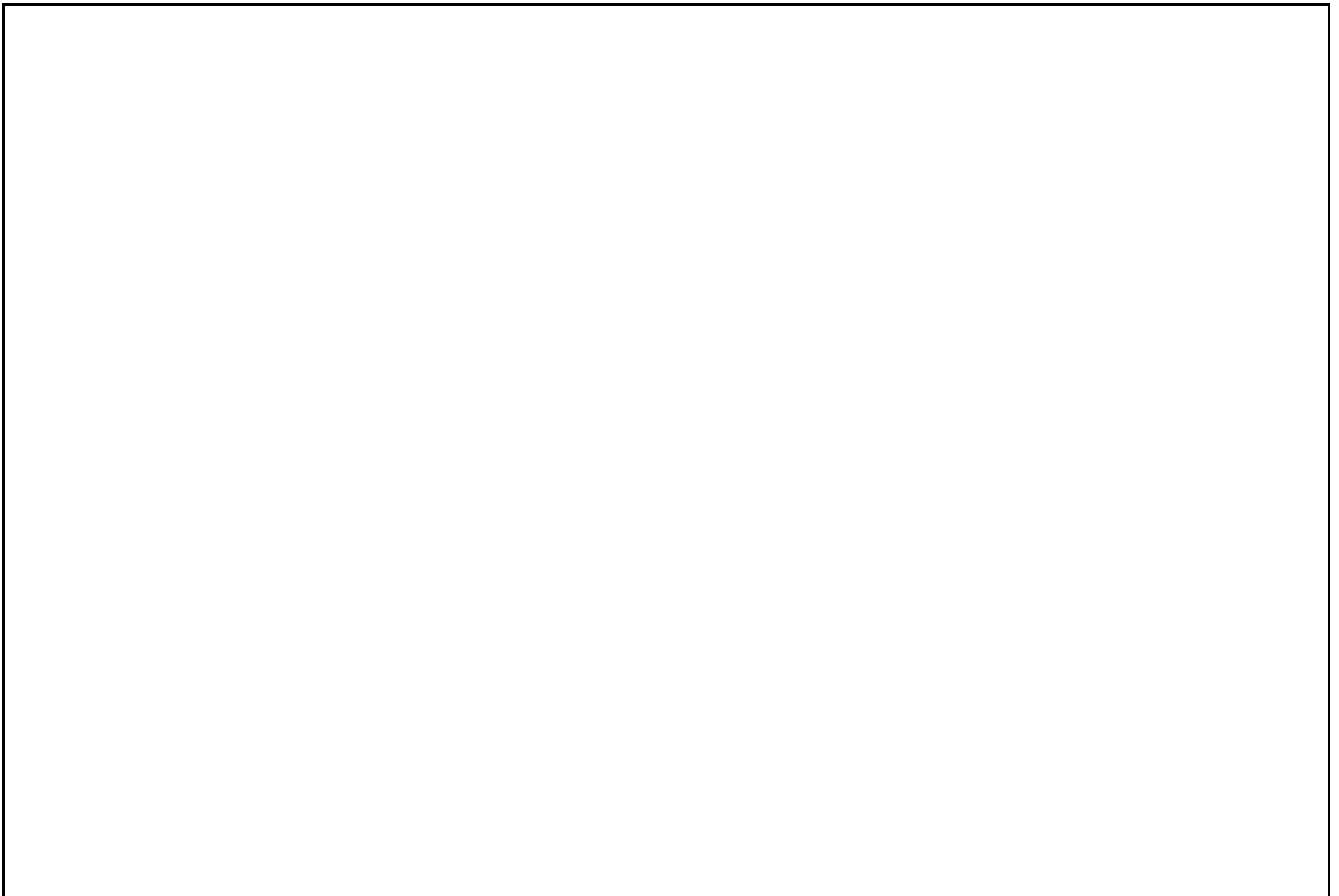
Name three different types of port and what they are used for

Task 4 - Motherboards

- a. Identify and label the main components on a motherboard.



- b. **Draw a diagram** to show the position of the processor chip, the BIOS chip, the battery, the power supply connector, the memory slots, the expansion slots, the ports and other important components.



Task 5 - IT Job Roles



Investigate the following job roles:

Games Designer

App Designer

Programmer

Find out:

1. What skills are required for each role
2. What personal skills are required for each
3. What qualifications do you need for each
4. What pay progression is there, e.g. starting pay and senior pay

Task 6 - General IT Knowledge

1. Explain these **external storage devices** and state their **strengths and weaknesses**,

	Strengths	Weaknesses
Flash drives		
Cloud storage		
Solid state discs		
Optical hard drives		

2. What is an expansion card?
3. Explain these **Expansion Card** types
 - a. Sound cards
 - b. Graphics cards
4. What is **RFID** and how is it used?
5. Explain 3 **embedded systems**.

6. Describe at least **two strengths** and **two weaknesses** of each **cable type**.

- a. UTP
- b. STP
- c. Coaxial
- d. Optical fibre.

7. Explain standards, such as **GSM** (Global System for Mobile Communications), and associated technologies such as **3G** and **4G**.

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8. What is an IP – **Internet Protocol**?

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9. What is an **IP Address**? Give an example IPv4 and IPv6 in your answer.

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