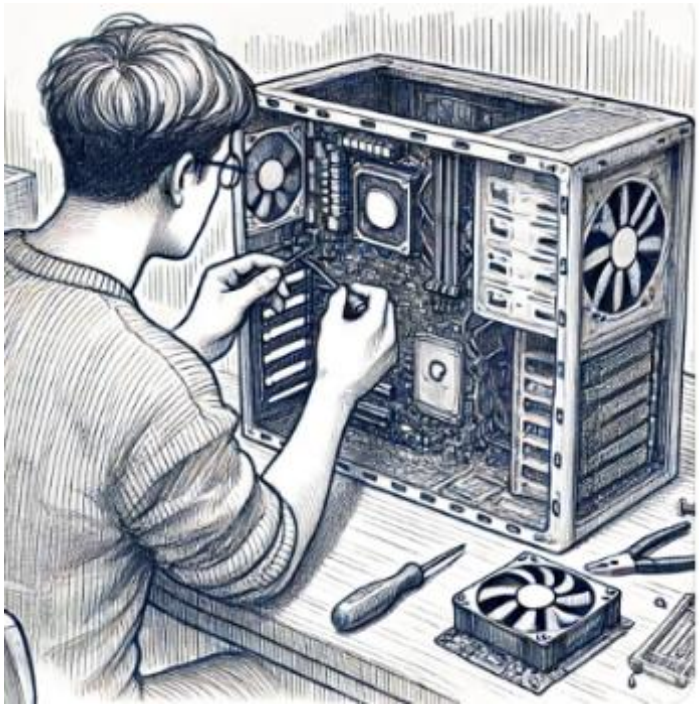
CAMBRIDGE TECHNICALS
I.T.
SUMMER ASSIGNMENT

IT Workbook: Building a Desktop Computer
Sixth Form Students

Introduction

Welcome to your IT project on building a desktop computer! This workbook will guide you through the process of selecting the components for a desktop computer. By the end of this project, you will have researched and chosen each part of a computer, understanding the factors that affect its performance. Your final output will be a PowerPoint presentation where you will present your computer build and the reasoning behind your choices.

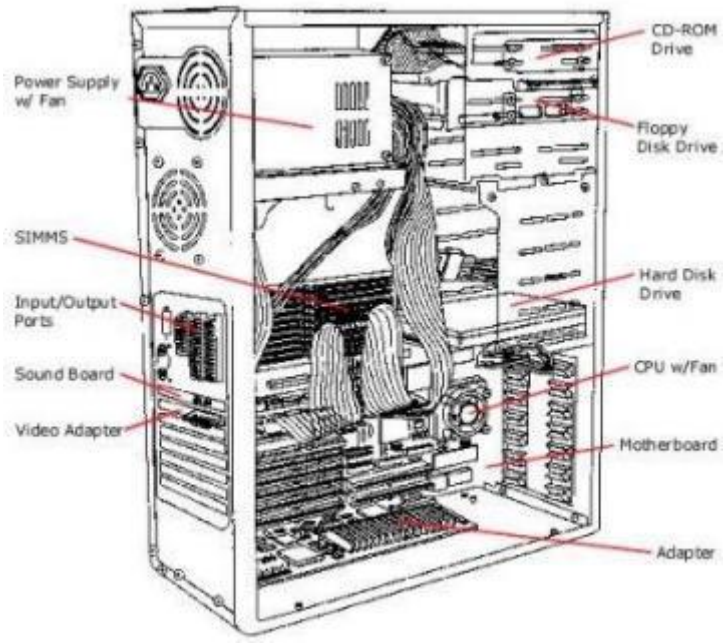


Task Overview

1. Understanding Computer Components
2. Researching Components
3. Selecting Components
4. Calculate Cost
5. Peripheral Selection
6. Creating the PowerPoint Presentation

1. Understanding Computer Components

Before you start selecting components, it's essential to understand what each part of a computer does and how it affects performance. Here are the main components you need to research:



- Central Processing Unit (CPU)
- Motherboard
- Random Access Memory (RAM)
- Storage (HDD, SSD)
- Graphics Processing Unit (GPU)
- Power Supply Unit (PSU)
- Computer Case
- Cooling System (fans, liquid cooling

Task: Complete the table on the next page to demonstrate your understanding of computer components.

Hardware Component	Purpose	Key Characteristics	Other considerations
Central Processing Unit (CPU)	Processes instructions from programs and performs calculations	Clock speed, core count, multi-threading capacity, cache size	Compatibility with motherboard and cooling system, cost
Motherboard			
Random Access Memory (RAM)			
Storage (HDD, SSD)			
Graphics Processing Unit (GPU)			
Power Supply Unit (PSU)			
Computer Case			
Cooling System (fans, liquid cooling)			

2. Researching Components

Using the internet, research the different options available for each component. Consider factors such as performance, compatibility, and price. Make notes on at least two different options for each component.

Resources:
- Official manufacturer websites
- Tech review websites
- Online retailers

Task: Complete the table listing at least two of the options for each component, including their specifications and prices.

Hardware Component	Brand/Model Name/Number	Specification	Price
Central Processing Unit (CPU)	**1.**		
	2.		
Motherboard	**1.**		
	2.		
Random Access Memory (RAM)	**1.**		
	2.		
Storage (HDD, SSD)	**1.**		

Hardware Component	Brand/Model Name/Number	Specification	Price
	2.		
Graphics Processing Unit (GPU)	1.		
	2.		
Power Supply Unit (PSU)	1.		
	2.		
Computer Case	1.		
	2.		
Cooling System (fans, liquid cooling)	1.		
	2.		

3. Selecting Components

Based on your research, select the components for your desktop computer. Ensure all components are compatible with each other.

Considerations:
- Budget: How much are you willing to spend?
- Use Case: What will you use the computer for? (e.g., gaming, video editing, general use)
- Future-Proofing: Will the components be sufficient for future software and hardware requirements?

Task: Write a paragraph below about the requirements for your computer. How it is it going to be used? What is your rough budget?

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Write a paragraph for each component from the previous table, explaining which specification you have chosen, justifying your choice based on budget and needs.

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4. Calculate cost

Task: Calculate the cost of your computer so far. Are you within budget?

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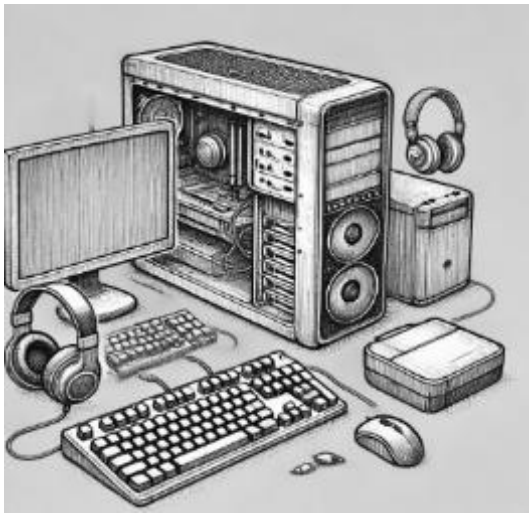
5. Peripheral Selection



Choose peripherals to complete your setup. This might include:

- Monitor
- Keyboard
- Mouse
- Speakers or Headphones
- Printer (optional)

Task: Research and choose peripherals that match your needs and preferences.

Peripheral Type	Specification/description	Cost

Task: Add the cost of these to your previous costing

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6. Creating a PowerPoint Presentation

Create a PowerPoint slide deck to present your computer build. Your presentation should include:

1. Title Slide: Your name and the title of the project.
2. Introduction: Brief overview of the project.
3. Component Slides:
   - One slide per component.
   - Include images, specifications, and your reasoning for choosing each component.
4. Peripheral Slides:
   - One slide for each peripheral.
   - Include images, specifications, and your reasoning for choosing each peripheral.
5. Conclusion: Summary of your computer build and any final thoughts.

Task: Create and save your PowerPoint presentation. Make sure it is clear, concise, and visually appealing.

Submission

Email your PowerPoint presentation to Mrs Bowen and Mr Kenvyn before the first day of term in September.

Glossary

Make sure you are familiar with all the below terms.

Central Processing Unit (CPU)

- The main chip in a computer responsible for carrying out instructions from programs.

Motherboard

- The primary circuit board that connects all the components of a computer.

Random Access Memory (RAM)

- A type of computer memory that stores data temporarily for quick access by the CPU.

Storage (HDD, SSD)

- Devices used to store data permanently. HDDs are traditional hard drives, while SSDs are faster solid-state drives.

Graphics Processing Unit (GPU)

- A specialized processor designed to accelerate graphics rendering.

Power Supply Unit (PSU)

- Converts electrical power from an outlet into usable power for the internal components of a computer.

Peripherals

- External devices connected to the computer to provide input and output.
- **Examples -** Monitor, keyboard, mouse, headphones, printer.

Clock Speed

- The speed at which a CPU executes instructions, measured in GHz.

Core Count

- The number of independent units within a CPU that read and execute program instructions.

Socket Type

- The physical and electrical interface between the CPU and the motherboard.

Chipset

- A set of electronic components on the motherboard that manage data flow between the processor, memory, and peripherals.

Read/Write Speeds

- The speed at which data can be read from or written to a storage device.

Expansion Slots

- Slots on the motherboard used to add additional cards, such as GPUs, sound cards, or network cards.

Good luck with your project! Feel free to ask for help if you need any assistance.