



Name : _____

Date : _____

Class : _____



LEARNING OBJECTIVES

By the end of this worksheet you should be able to :

- ☐ Explain the purpose of the CPU
- ☐ Describe the fetch-decode-execute cycle
- ☐ Identify the functions of the ALU and Control Unit
- ☐ Explain the purpose of key CPU registers
- ☐ Distinguish between addresses and data

A QUICK RECALL (STARTER)

- What does CPU stand for?

- Which CPU component performs arithmetic and logical operations?
 - ☐ Control Unit
 - ☐ ALU
 - ☐ Cache
 - ☐ Registers
- Circle the correct answer.
Which register stores the address of the next instruction?

MAR

MDR

Program Counter

B FILL IN THE MISSING WORDS

Use the words below:

fetch decode execute address data instruction register

- The CPU first _____ the next instruction from memory.
- The Control Unit then _____ the instruction.
- The MDR stores _____ transferred to or from memory.

C MATCH THE KEY TERMS

Term	Definition
1. ALU	Performs arithmetic and logical operations
2. Control Unit	Coordinates the CPU and sends control signals
3. Cache	Stores frequently used data and instructions

D APPLY YOUR KNOWLEDGE

Scenario

A calculator app is processing two calculations.

Calculation A

$125 + 87$

Calculation B

48×12

- Which CPU component performs both calculations?

- Which CPU component controls the processing of the instructions?

- Explain how the Control Unit and ALU work together.

D EXAM QUESTION

6 Marks

Explain the fetch-decode-execute cycle and the role of the MAR and MDR.

★ CHALLENGE

Extension

Design a real-world CPU scenario showing how concepts from 'Architecture of the CPU' improve computer performance. Justify every decision.

REFLECTION

Traffic Lights

Circle the colour that best describes your understanding

- ☐ I need more help
- ☐ I understand some of it
- ☐ I could explain this someone else

TEACHER FEEDBACK

Teacher / Mark:





Name : _____

Date : _____

Class : _____



LEARNING OBJECTIVES

By the end of this worksheet you should be able to :

- ☐ Describe cache memory
- ☐ Explain the purpose of registers
- ☐ Identify CPU storage areas
- ☐ Explain how cache improves performance
- ☐ Compare cache and registers

A QUICK RECALL (STARTER)

- Which CPU component stores frequently used data and instructions?

- Which storage area is located inside the CPU and holds very small amounts of data?
 - ☐ RAM
 - ☐ Registers
 - ☐ Secondary Storage
 - ☐ Optical Storage
- Circle the correct answer.
Which register stores intermediate calculation results?

MAR

MDR

Accumulator

B FILL IN THE MISSING WORDS

Use the words below:

cache registers processor memory data fast instructions

- Frequently used data and instructions are stored in _____.
- The _____ stores intermediate calculation results.
- Registers provide very _____ storage.

C MATCH THE KEY TERMS

Term	Definition
1. Cache	Stores frequently used data and instructions
2. Registers	Provide very small high-speed storage inside the CPU
3. Accumulator	Stores intermediate results from calculations

D APPLY YOUR KNOWLEDGE

Scenario

Two processors have different cache sizes.

Processor A

2 MB Cache 3.2 GHz 4
Cores

Processor B

16 MB Cache 3.2 GHz 4
Cores

- Which processor is likely to perform better?

- Why is Processor B likely to be faster?

- Explain why cache improves CPU performance.

D EXAM QUESTION

6 Marks

Explain the purpose of cache memory and registers.

★ CHALLENGE

Extension

Evaluate a real-world CPU scenario showing how concepts from 'Architecture of the CPU' improve computer performance. Justify every decision.

REFLECTION

Traffic Lights

Circle the colour that best describes your understanding

- ☐ I need more help
- ☐ I understand some of it
- ☐ I could explain this someone else

TEACHER FEEDBACK

Teacher / Mark:

