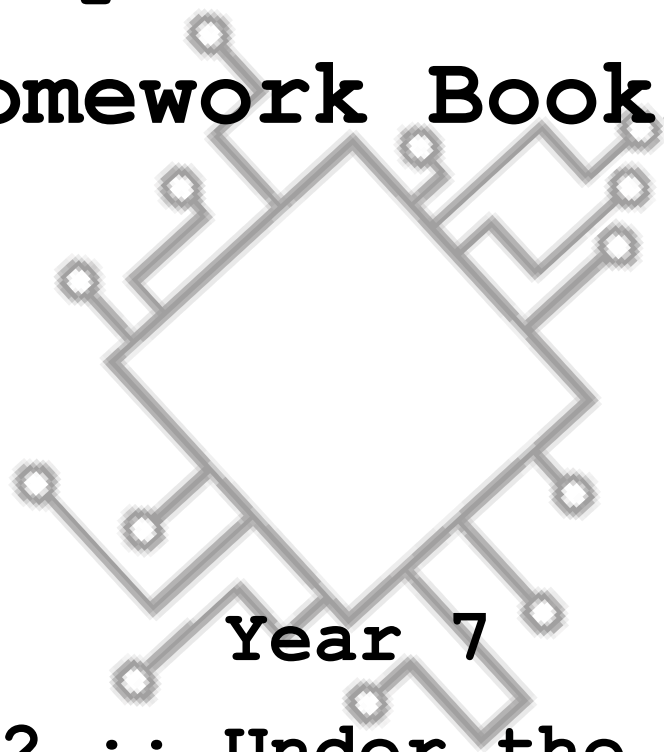


Name : _____



Computer Science Homework Booklet



Year 7

**Term 2 :: Under the Hood &
John von Neumann**

Homework 1 : Flipped Learning	Due Date:	Completed? <input type="checkbox"/>
Homework 2 : Dear Jonny	Due Date:	Completed? <input type="checkbox"/>
Homework 3 : John von Neumann	Due Date:	Completed? <input type="checkbox"/>
Homework 4 : Revision Questions	Due Date:	Completed? <input type="checkbox"/>

Homework 1 – Flipped Learning

Use your Knowledge Organiser to complete this homework task

Create a revision mind map of the different things you will be learning about in this project ...

- The motherboard
- The CPU
- Motherboard connections
- Computer memory
- Secondary storage

Homework 2 – Dear Jonny

Use the web link <http://itslearning365.com/portalv3/mod/page/view.php?id=35> and complete the Dear Jonny task

Homework 3 – John von Neumann

Use the web link <http://itslearning365.com/portalv3/mod/hvp/view.php?id=3861> and complete the missing information about John von Neumann

Homework 3 – Revision Questions

Answer these revision questions ...

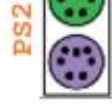
- 1 Who invented the architecture (design) for all modern computers?
- 2 What is the von Neumann Architecture also known as?
- 3 Draw and label a diagram to show the von Neumann Architecture
- 4 What does CU stand for?
- 5 What does ALU stand for?
- 6 What are the four main parts of the von Neumann Architecture?
- 7 Given an example of an input device
- 8 What name is used for the memory in the von Neumann architecture?
- 9 Give an example of an output device
- 10 Name two registers and explain what they do

KNOWLEDGE ORGANISER :: UNDER THE COVER

The word **compute** comes from the Latin word meaning **compute** - which means to count up.

Computing is something we all do every day, whether we are doing math, sorting or searching for something, or generally trying to understand something.

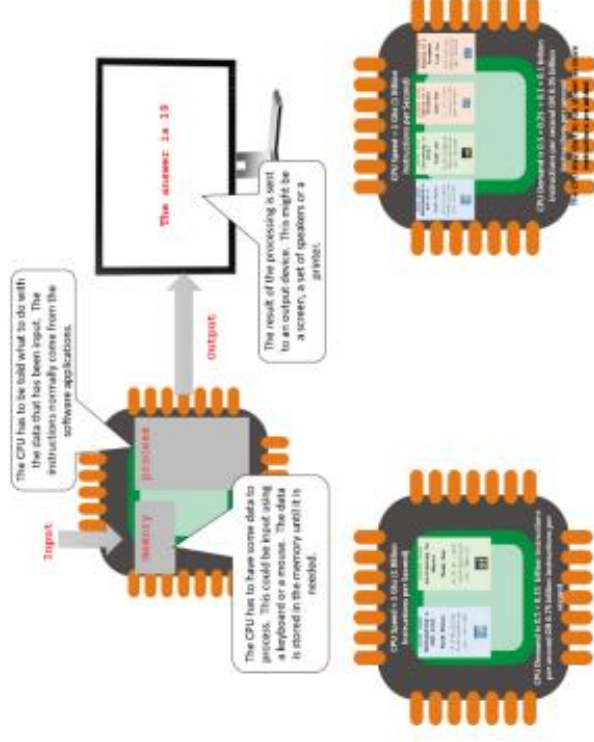
THE MOTHERBOARD



KEY TERMS

Mouse, Keyboard, Monitor, Printer, CPU, Memory, Storage, Ghz, Fetch – Decode – Execute, RAM, ROM, Motherboard, Hard Drive, Web Cam, Microphone

THE CPU



1 Ghz = 1 Billion instructions per second

MEMORY AND STORAGE

RAM



ROM



SECONDARY STORAGE

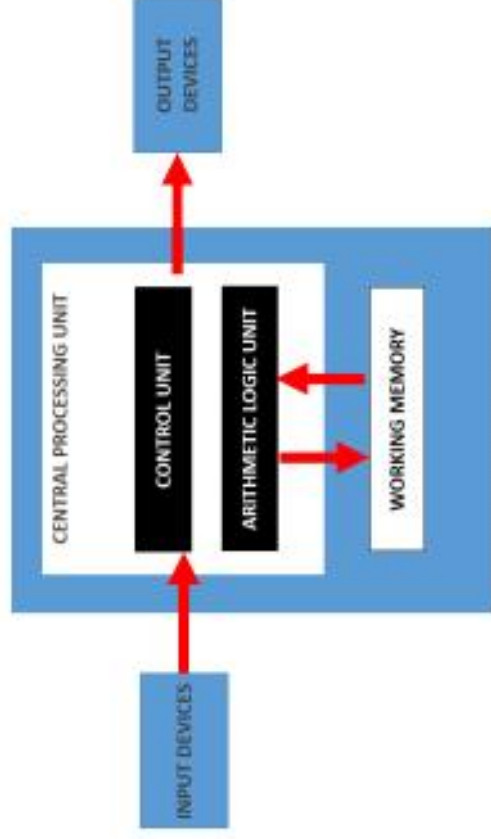


KNOWLEDGE ORGANISER :: VON NEUMANN ARCHITECTURE

Born : December 28, 1903, Budapest, Hungary
Died : 8 February 1957
Family fled to America before World War II
Studied maths & physics
Work on the Manhattan Project during WW2 developing the Atomic Bomb and Hydrogen Bomb
Came up with the von Neumann Architecture for modern computers



VON NEUMANN ARCHITECTURE



FTTECH DECODE EXECUTE CYCLE



KEY TERMS

CPU	Central Processing Unit
Control Unit	Sends control signals to other parts of the computer
ALU	Arithmetic Logic Unit
Buses	Connections from the CPU to other parts of the computer
Register	A small piece of memory inside the CPU
Memory Unit	The RAM memory for the computer
PC	Program Counter
Accumulator	Register that stores the results of calculations
MDR	Memory Data Register
MAR	Memory Address Register
PC	Program Counter
CIR	Current Instruction Register