DE LA SALLE SCHOOL
ST HELENS
YEAR 7 – COMPUTING: FLOWOL
Half Term 5

This half term I am learning:	Key Terms I will learn this half term:
Culture	• Control
• How computers are used to control everyday events?	• Computer Programming
• The computer systems found in our homes	• Algorithm
	• Flowchart
Techniques / Technology	• Input
• How to plan and design a control system	• Process
• How to use Algorithms (Flowcharts and Pseudo Code) to plan and design a control system	• Output
• How to use the software: Flowol	• Decision
• How to apply the knowledge of control system and Algorithms to working a functioning computer model	• Variable
	• Mimic
By the end of this half term I will:	• Model
• Be able to recognise / understand key concepts that are used when creating computer based models	• Evaluation
• Be able to name the computer systems used to program computer based models	
OUTCOME	
• You will be able to create two different types of algorithms: Pseudocode and Flowcharts	
• You will have explored many different techniques including planning and programming techniques using the software Flowol	
• You will have explore a range of flowol mimics and programme them efficiently	

Learning Outcomes	Literacy Focus	Homework
HT5 week 1-2 – I will be able to:	Spelling	• Produce a Flowchart to program Rory to produce either a cup of tea or a sandwich
• Understand how what is meant by the term computer control		
• Understand the importance of instructions and the need for them to be precise		
• Understand the term algorithm and the fact that there is more than one type of algorithm that can be used		
• I will be able to identify the symbols required to produce an accurate flowchart		
Outcomes:		
• I will define the term computer control and be able to explain where and how it is used in everyday machines such as a washing machine		
• I will be able to produce two algorithms: Written instructions and flowcharts		

HT5 week 3 – I will be able to: • Understand the term algorithm and the fact that there is more than one type of algorithm that can be used. • Be introduced to the software package 'Flowol' **Outcomes:** • I will be able to produce three algorithms: Written, Flowcharts and PSEUDO CODE. • I will be able to program a simple mimic using the software Flowol and explain in detail the way it works and why?	Spelling, quality of written response.	• Explanation of computer models. What is the input- process and outputs of each model.
HT5 week 4/5 – I will be able to: • Understand the term algorithm and the fact that there is more than one type of algorithm that can be used • Understand the term 'Variable' and be able to include this within my algorithm and program **Outcomes:** • I will be able to produce three algorithms: Written, Flowcharts and PSEUDO CODE • I will be able to program two mimics using the software 'Flowol' and be able to include the idea of variables to improve the quality of my program • I will be able to fully explain the flowcharts I have produced to allow the 'Lighthouse and Greenhouse' mimic	Spelling, quality of written response.	• Revision for assessment next lesson
HT5 week 6: End of unit Assessment	Spelling, quality of written response.	

DE LA SALLE SCHOOL
ST HELENS
YEAR 8 – COMPUTING: SCRATCH
Half Term 5

This half term I am learning:

Culture

- How computer games are designed?
- The impact computer games have on society
- The fundamental elements included within all games

Techniques / Technology

- How to plan and design a simple 2D game
- How to use Algorithms (Written Instruction and Pseudo code) to plan and design a simple 2D game
- How to use the software: Scratch
- How to apply the knowledge of control programming and Algorithms to produce a basic 1 level 2D game

By the end of this half term I will:

- Be able to recognise / understand key concepts that are used when creating computer based games.
- Be able to explain the fundamental elements that are used in all games and why they are used.

OUTCOME

- You will be able to create two different types of algorithms: Written description and Pseudo Code
- You will have explored many different techniques including planning and programming techniques using the software Scratch

You will produce a simple 1 level 2D game (minimum)

Key Terms I will learn this half term:

- Control
- Computer Programming
- Algorithm
- Sprite
- Stage
- Code
- Blocks
- Variable

Learning Outcomes	Literacy Focus	Homework
HT5 week 1 – I will be able to: - Understand how what is meant by the term computer control and computer programming. - Understand the importance of instructions and the need for them to be precise. - I will familiarise myself with the software 'Scratch' and the screen features available. **Outcomes:** - I will explore Scratch and the use of a 'Sprite' and the 'Blocks' I have available to use. - I will be able to change and edit a chosen/new sprite - I will be able to control the movement of the sprite (Using the arrow keys)	Spelling	- Scratch Screen explanation
HT5 week 3 – I will be able to: - Understand the 'Blocks' of code available to me when programming a sprite **Outcomes:**	Spelling, quality of written response.	

• I will be able to change the 'Stage' design for a given purpose. • I will be able to develop my code to allow sprite to 'hide'		
HT5 week 4/5 – I will be able to: • Understand the term algorithm and the fact that there is more than one type of algorithm that can be used • Fully understand the 'Blocks' of code available to me when programming a sprite • I will understand the term 'Variable' and be able to introduce variables into my programming **Outcomes:** • I will be able to introduce variables into my programming (e.g. timer/ score) • I will be able to fully explain using a written description algorithm what is happening in each block of my code	Spelling, quality of written response.	• Game Evaluation – Evaluate two existing Scratch games to allow me to develop a better understanding of what make a good challenging 2D, 1 level game.
HT5 week 6 – I will be able to: • Understand the term algorithm and the fact that there is more than one type of algorithm that can be used • Fully understand the 'Blocks' of code available to me when programming a sprite • I will understand the term 'Variable' and be able to introduce variables into my programming **Outcomes:** • I will challenge myself to explore more features of Scratch that I can use	Spelling, quality of written response.	• Game Plan – Design and explain the game you are going to produce as part of my assessment.
HT5 week 6/7: Scratch Assessment	Spelling, quality of written response.	

DE LA SALLE SCHOOL
ST HELENS
YEAR 9 – COMPUTING: SECTION 4 THE COMPUTER
Half Term 5/Half Term 6

This half term I am learning: (Theory)	Key Terms I will learn this half term:
Culture • Name the components of a computer system • Describe the function of different types of memory (RAM, ROM, cache) • Describe the differences and uses of an assembler, compiler and interpreter Techniques / Technology • Draw a diagram showing the components of a computer system and how they work together • List some functions of an operating system • List some items of utility software and state their purpose • Give examples of high-level and low-level languages **By the end of this half term I will: (Theory)** Culture • Describe the role of the components of the CPU • Explain the concept of the stored program computer • Describe the steps in the fetch-decode-execute cycle • Explain the concept of storing data in the "cloud" • Explain the need for embedded systems and their functions • Describe the functions of an operating system • Describe the suitability of a high-level or low-level programming language for a particular task • Describe the purpose and function of security and file management utility software • Describe how software can be used to simulate and model aspects of the real world • Describe the advantages and disadvantages of a compiler and an interpreter **PRACTICAL OUTCOME.** • Construct truth tables for a given logic statement (AND, OR, NOT) • Produce logic statements for simple problems	• Input-Process-Output • Model • CPU • Main Memory • RAM • ROM • Cache • Control Unit (CU) • Arithmetic/Logic Unit (ALU) • Register • Clock • Address Bus • Data Bus • Control Bus • Von Neumann Model • Stored Program Concept • Magnetic, Optical And • Solid State Storage Device • Embedded System • Truth Table • Logic Statement • Operating System • User Interface • Utility Software • Compression • Defragmentation • Anti-Virus • Anti-Spyware • Simulation Software • High-Level Language • Low-Level Language • Assembler • Compiler • Interpreter

Learning Outcomes	Literacy Focus	Homework
HT5 week 1 – I will be able to: • Understand the input-process-output model • Understand the function of the hardware components of a computer system (CPU, main memory, secondary storage, input and output devices) and how they work together	Spelling/ Quality of written answers	• Cache Memory exam style questions

• Understand the function of different types of main memory (RAM, ROM, cache) **Outcomes:** • I will be able to produce, label and explain the fetch-execute-decode model • I will be able to label and explain how data travels through the computer		

HT5 week 2 – I will be able to:
• Understand the concept of a stored program
• Understand the role of the CPU components in the fetch-decode-execute cycle:
    o Control Unit (CU)
    o Arithmetic/logic unit (ALU)
    o registers
    o clock
    o address bus, data bus, control bus
 	
Outcomes:
• I will be able to develop the models created from week 1 with additional knowledge I have gained on the purpose of the COU, its role and the what affects the performance of the CPU.
	Spelling, quality of written response.	

HT5 week 3 – I will be able to: • Understand how data is stored on physical devices (solid state, optical, magnetic) • Understand the concept of storing data in the "cloud" and other contemporary secondary storage **Outcomes:** • I will be able identify and explain the different storage devices available and their uses as well as the pros and cons of each device	Spelling, quality of written response.	• Storage Devices

HT5 week 4 – I will be able to:
• Construct truth tables for the following logic gates:
    NOT
    AND
    OR
• Construct truth tables for a given logic statement
• Produce logic statements for a given problem
 	
Outcomes:
• I will be able to independently be able to construct a truth table for a variety of given scenarios
	Spelling, quality of written response.	• Boolean Logic

HT5 week 5– I will be able to: • Know what an operating system is and how it manages files, processes, hardware and the user interface • Understand the need for embedded systems and their functions.	Spelling, quality of written response.	• Operating Systems

Outcomes: • I will be able to explain the different types of operating systems available and highlight the pros and cons of all. • I will be able to explain the features included within an Operating System		
HT6 week 1 – I will be able to: • Understand the purpose and functions of utility software (managing, repairing and converting files; compression; defragmentation; backing up; anti-virus; anti-spyware) • Understand how software can be used to simulate and model aspects of the real world **Outcomes:** • I will be able to explain in detail the need for utility Software • I will be able to explain the features of utility Software	Spelling, quality of written response	• Revision for assessment
HT6 week 2: The Computer – End of unit Assessment		

DE LA SALLE SCHOOL
ST HELENS
YEAR 10 – COMPUTING: THE COMPUTER
Half Term 5/Half Term 6

This half term I am learning: (Theory)

Culture
- Name the components of a computer system
- Describe the function of different types of memory (RAM, ROM, cache)
- Describe the differences and uses of an assembler, compiler and interpreter

Techniques / Technology
- Draw a diagram showing the components of a computer system and how they work together
- List some functions of an operating system
- List some items of utility software and state their purpose
- Give examples of high-level and low-level languages

By the end of this half term I will: (Theory)

Culture
- Describe the role of the components of the CPU
- Explain the concept of the stored program computer
- Describe the steps in the fetch-decode-execute cycle
- Explain the concept of storing data in the "cloud"
- Explain the need for embedded systems and their functions
- Describe the functions of an operating system
- Describe the suitability of a high-level or low-level programming language for a particular task
- Describe the purpose and function of security and file management utility software
- Describe how software can be used to simulate and model aspects of the real world
- Describe the advantages and disadvantages of a compiler and an interpreter

PRACTICAL OUTCOME
- Construct truth tables for a given logic statement (AND, OR, NOT)
- Produce logic statements for simple problems

Key Terms I will learn this half term:
- Input-Process-Output
- Model
- CPU
- Main Memory
- RAM
- ROM
- Cache
- Control Unit (CU)
- Arithmetic/Logic Unit (ALU)
- Register
- Clock
- Address Bus
- Data Bus
- Control Bus
- Von Neumann Model
- Stored Program Concept
- Magnetic, Optical And
- Solid State Storage Device
- Embedded System
- Truth Table
- Logic Statement
- Operating System
- User Interface
- Utility Software
- Compression
- Defragmentation
- Anti-Virus
- Anti-Spyware
- Simulation Software
- High-Level Language
- Low-Level Language
- Assembler
- Compiler
- Interpreter

Learning Outcomes	Literacy Focus	Homework
HT5 week 1 – I will be able to: • Understand the input-process-output model • Understand the function of the hardware components of a computer system (CPU, main memory, secondary storage, input and output devices) and how they work together	Spelling/ Quality of written answers	• Cache Memory exam style questions

• Understand the function of different types of main memory (RAM, ROM, cache) **Outcomes:** • I will be able to produce, label and explain the fetch-execute-decode model • I will be able to label and explain how data travels through the computer		

HT5 week 2 – I will be able to:
• Understand the concept of a stored program
• Understand the role of the CPU components in the fetch-decode-execute cycle:
    o Control Unit (CU)
    o Arithmetic/logic unit (ALU)
    o registers
    o clock
    o address bus, data bus, control bus
 	
Outcomes:
• I will be able to develop the models created from week 1 with additional knowledge I have gained on the purpose of the COU, its role and the what affects the performance of the CPU
	Spelling, quality of written response.	

HT5 week 3 – I will be able to: • Understand how data is stored on physical devices (solid state, optical, magnetic) • Understand the concept of storing data in the "cloud" and other contemporary secondary storage **Outcomes:** • I will be able identify and explain the different storage devices available and their uses as well as the pros and cons of each device	Spelling, quality of written response.	• Storage Devices
HT5 week 4 – I will be able to: • Construct truth tables for the following logic gates: NOT AND OR • Construct truth tables for a given logic statement • Produce logic statements for a given problem **Outcomes:** • I will be able to independently be able to construct a truth table for a variety of given scenarios	Spelling, quality of written response.	• Boolean Logic
HT5 week 5– I will be able to: • Know what an operating system is and how it manages files, processes, hardware and the user interface • Understand the need for embedded systems and their functions **Outcomes:**	Spelling, quality of written response.	• Operating Systems

• I will be able to explain the different types of operating systems available and highlight the pros and cons of all • I will be able to explain the features included within an Operating System		
HT6 week 1 – I will be able to: • Understand the purpose and functions of utility software (managing, repairing and converting files; compression; defragmentation; backing up; anti-virus; anti-spyware) • Understand how software can be used to simulate and model aspects of the real world **Outcomes:** • I will be able to explain in detail the need for utility software • I will be able to explain the features of utility software	Spelling, quality of written response	• Revision for assessment
HT6 week 2: The Computer – End of unit assessment		