STOKE DAMEREL

Aspire Achieve Thrive

Autumn Term
(Term 1)

Computer Science

Year 10

Name: _____

Tutor: _____

GREENSHAW LEARNING TRUST

Year 10 Homework Timetable

Monday	English Task 1	Ebacc Option A Task 1	Option C Task 1	
Tuesday	Sparx Science	Option B Task 1	Modern Britain Task 1	
Wednesday	Sparx Maths	Science Task 1	Option C Task 2	
Thursday	Ebacc Option A Task 2	Sparx Science	Option B Task 2	Sparx Maths
Friday	Modern Britain Task 2	Science Task 2	English Task 2	

Sparx Science Complete 100% of their assigned homework each week
Sparx Maths Complete 100% of their assigned homework each week

Option A (EBACC)
French
Geography
History

Option B
Art
Business Studies
Catering
Music
Sport
IT
Childcare
Triple Science
Travel and Tourism

Option C
Business Studies
Catering
Drama
Health & Social Care
Sport
Computer Science
Media
Photography
Sociology

Week Beginning Date	Homework Task 1 Cornell Notes	Homework Task 2 Homework Question
Week 2 Monday 11 September	1.1 The Purpose of the CPU (Fetch-Execute Cycle)	Events that take place during the Fetch-Execute Cycle
Week 3 Monday 18 September	1.1 CPU Components and their function	Description of the function of the CPU
Week 4 Monday 25 September	1.1 Von Neumann Architecture	Types of registers used in the Von Neumann Architecture
Week 5 Monday 2 October	1.1 CPU Performance	Impact of the number of cores on CPU performance
Week 6 Monday 9 October	1.1 Embedded Systems	Examples of embedded systems
Week 7 Monday 16 October	1.2 The need for Primary Storage	Comparison of Primary and Secondary Storage
Monday 23rd October	HALF-TERM	
Week 8 Monday 30 October	1.2 RAM and ROM	Difference between RAM and ROM
Week 9 Monday 6 November	1.2 Virtual Memory	Explain how virtual memory can compensate for a lack of RAM
Week 10 Monday 13 November	1.2 The need for Secondary Storage	Describing the role of secondary storage
Week 11 Monday 20 November	1.2 Common Types of Storage	Identifying the characteristics of optical, solid state and magnetic storage types.
Week 12 Monday 27 November	1.2 Selecting suitable storage devices	Identify and explain the most suitable storage type for an e-book reader
Week 13 Monday 4 December	1.2 Units of Data Storage	Calculating the space required to store files on a secondary storage device.
Week 14 Monday 11 December	1.2 Processing binary data	Describe why computer systems use binary to store data.
Week 15 Monday 18 December	1.2 Data capacity calculations	Calculating the space required to store files on a secondary storage device.

WEEK 2: Cornell Notes (Homework task 1)

Date / /	1.1 The purpose of the CPU – The fetch-execute cycle ClearRevise Revision Guide: Page 2

Links	Notes
 Purpose of the CPU - Fetch-Execute Cycle **Questions**	

Summary

WEEK 2: Exam Question (Homework task 2)

Date…….

Question: Identify four events that take place during the fetch-execute cycle.

Answer:

[4 marks]

WEEK 2: Exam Question review and improvement (Classwork)

Question: Identify four events that take place during the fetch-execute cycle.

Answer:

[4 marks]

WEEK 3: Cornell Notes (Homework task 1)

Date / /	**1.1 CPU components and their function** ClearRevise Revision Guide: Page 3

Links	Notes
 CPU Components and their Function **Questions**	

Summary

WEEK 3: Exam Question (Homework task 2)

Date…….

Question:
Kerry wants to buy a new computer, but she does not understand what the different parts of a computer do. Kerry has heard of a CPU but does not know what it is. The following sentences describe the purpose of a CPU. Complete the sentences by filling in the missing words.

Answer:
CPU stands for ..... . It is the part of the computer that

fetches and executes the ..... that are stored in ..... .The

CPU contains the Arithmetic ..... Unit (ALU) and the ..... Unit (CU).

[5 marks]

WEEK 3: Exam Question review and improvement (Classwork)

Question:
Kerry wants to buy a new computer, but she does not understand what the different parts of a computer do. Kerry has heard of a CPU but does not know what it is. The following sentences describe the purpose of a CPU. Complete the sentences by filling in the missing words.

Answer:
CPU stands for ..... . It is the part of the computer that

fetches and executes the ..... that are stored in ..... .The

CPU contains the Arithmetic ..... Unit (ALU) and the ..... Unit (CU).

[5 marks]

WEEK 4: Cornell Notes (Homework task 1)

Date / /	**1.1 Von Neumann architecture** ClearRevise Revision Guide: Page 3

Links	Notes
 1.1 Von Neumann architecture **Questions**	

Summary

WEEK 4: Exam Question (Homework task 2)

Date…….

Question:
Alicia has designed a computer using Von Neumann architecture. Describe the purpose of two registers that are used by Von Neumann architecture.

Answer:

Name of Register	Purpose

[4 marks]

WEEK 4: Exam Question review and improvement (Classwork)

Question:
Alicia has designed a computer using Von Neumann architecture. Describe the purpose of two registers that are used by Von Neumann architecture.

Answer:

Name of Register	Purpose

[4 marks]

WEEK 5: Cornell Notes (Homework task 1)

Date / /	**1.1 Characteristics of CPUs (CPU Performance)** ClearRevise Revision Guide: Page 4

Links	Notes
 1.1 Characteristics of CPUs **Questions**	

Summary

WEEK 5: Exam Question (Homework task 2)

Date…….

Question:
Alicia has designed a computer using Von Neumann architecture.

Alicia says:
"My computer has a quad-core processor, so it will run twice as fast as a computer with a dual-core processor".

Explain why this statement is not always true.

Answer:

[3 marks]

WEEK 5: Exam Question review and improvement (Classwork)

Question:
Alicia has designed a computer using Von Neumann architecture.

Alicia says:
"My computer has a quad-core processor, so it will run twice as fast as a computer with a dual-core processor".

Explain why this statement is not always true.

Answer:

[3 marks]

WEEK 6: Cornell Notes (Homework task 1)

Date / /	**1.1 Embedded systems** ClearRevise Revision Guide: Page 4

Links	Notes
 1.1 Embedded systems **Questions**	

Summary

WEEK 6: Exam Question (Homework task 2)

Date…….

Question:
Xander's tablet computer comes with system software, including an operating system and utility system software. Xander also has a smart watch. Tick (✓) one box to show whether the smart watch or the laptop is an example of an embedded system.

Answer:

	Is an example of an embedded system
Smart watch	
Laptop	

[1 mark]

Question
Explain why the device you chose is an embedded system

Answer:

[2 marks]

WEEK 6: Exam Question review and improvement (Classwork)

Question:
Xander's tablet computer comes with system software, including an operating system and utility system software. Xander also has a smart watch. Tick (✓) one box to show whether the smart watch or the laptop is an example of an embedded system.

Answer:

	Is an example of an embedded system
Smart watch	
Laptop	

[1 mark]

Question:
Explain why the device you chose is an embedded system

Answer:

[2 marks]

WEEK 7: Cornell Notes (Homework task 1)

Date / /	**1.2 The need for primary storage** ClearRevise Revision Guide: Page 6

Links	Notes
 1.2 The need for primary storage **Questions**	

Summary

WEEK 7: Exam Question (Homework task 2)

Date……

Question:
Tick each correct statement for Primary and Secondary Storage

Answer:

	Primary Storage	Secondary Storage
Most storage types are volatile		
All storage types are non-volatile		
Largest storage capacity		
Fastest access times		

[4 marks]

Question:
Fill in the missing words from the description below.

Answer:
Primary storage consists of R_____ A_____ M_____, R_____ O_____

M_____, R_____ and C_____. Primary storage holds the D_____ and

I_____ which the CPU needs to access while the computer is running.

[4 marks]

WEEK 7: Exam Question review and improvement (Classwork)

Question:
Tick each correct statement for Primary and Secondary Storage

Answer:

	Primary Storage	Secondary Storage
Most storage types are volatile		
All storage types are non-volatile		
Largest storage capacity		
Fastest access times		

[4 marks]

Question:
Fill in the missing words from the description below.

Answer:
Primary storage consists of R_____ A_____ M_____, R_____ O_____

M_____, R_____ and C_____. Primary storage holds the D_____ and

I_____ which the CPU needs to access while the computer is running.

[4 marks]

WEEK 8: Cornell Notes (Homework task 1)

Date / /	**1.2 RAM & ROM** ClearRevise Revision Guide: Page 6

Links	Notes
 1.2 RAM & ROM **Questions**	

Summary

WEEK 8: Exam Question (Homework task 2)

Date…….

WEEK 7: Exam Question review and improvement (Classwork)

Question:
Describe two differences between RAM and ROM

Answer:

[4 marks]

WEEK 8: Exam Question review and improvement (Classwork)

Question:
Describe two differences between RAM and ROM

Answer:

[4 marks]

WEEK 9: Cornell Notes (Homework task 1)

Date / /	**1.2 Virtual memory** ClearRevise Revision Guide: Page 7

Links	Notes
 [1.2 Virtual memory]	
Questions	

Summary

WEEK 9: Exam Question (Homework task 2)

Date…….

Question:
Alicia has designed a computer using Von Neumann architecture.

A computer only has 2GB of RAM. Alicia says that virtual memory can be used instead of adding more RAM. etc. Explain how virtual memory can compensate for the lack of RAM in Alicia's computer.

Answer:

[3 marks]

WEEK 9: Exam Question review and improvement (Classwork)

Question:
Alicia has designed a computer using Von Neumann architecture.

A computer only has 2GB of RAM. Alicia says that virtual memory can be used instead of adding more RAM. etc. Explain how virtual memory can compensate for the lack of RAM in Alicia's computer.

Answer:

[3 marks]

WEEK 10: Cornell Notes (Homework task 1)

Date / /	**1.2 The need for secondary storage** ClearRevise Revision Guide: Page 8 and 9

Links	Notes
 [1.2 The need for secondary storage]	
Questions	

Summary

WEEK 10: Exam Question (Homework task 2)

Date…….

Question:
Fill in the blanks in each of the 4 statements about why Secondary Storage is needed

Answer:
Secondary storage is needed because ROM is r_____ o_____ and RAM is v_____

Secondary storage is needed for storage of p_____ and data when power is turned off.

Secondary storage acts as a form of s_____ - p_____ storage for data that can change.

Secondary storage can be used to b_____ and a_____ of data files.

[4 marks]

WEEK 10: Exam Question review and improvement (Classwork)

Question:
Fill in the blanks in each of the 4 statements about why Secondary Storage is needed

Answer:
Secondary storage is needed because ROM is r_____ o_____ and RAM is v_____

Secondary storage is needed for storage of p_____ and d_____ when power is turned off.

Secondary storage acts as a form of s_____ - p_____ storage for data that can change.

Secondary storage can be used to b_____ and a_____ of data files.

[4 marks]

WEEK 11: Cornell Notes (Homework task 1)

Date / /	**1.2 Common types of storage** ClearRevise Revision Guide: Page 8 and 9

Links	Notes
 1.2 Common types of storage **Questions**	

Summary

WEEK 11: Exam Question (Homework task 2)

Date…….

Question
For each description tick one column to indicate whether the description relates to optical, magnetic or solid-state storage.

Answer

	Optical	Magnetic	Solid State
Uses a laser to read the data stored			
Provides the highest storage capacities			
No moving parts, so are therefore more reliable			
Slowest access speeds			
Thin, lightweight and portable			
Examples include: CD, DVD and Blu-Ray			
Examples include: Flash Memory Cards and USB Pen Drives			
Examples Hard Disk Drives and Tape			

[9 marks]

WEEK 11: Exam Question review and improvement (Classwork)

Answer

	Optical	Magnetic	Solid State
Uses a laser to read the data stored			
Provides the highest storage capacities			
No moving parts, so are therefore more reliable			
Slowest access speeds			
Thin, lightweight and portable			
Examples include: CD, DVD and Blu-Ray			
Examples include: Flash Memory Cards and USB Pen Drives			
Examples Hard Disk Drives and Tape			

[9 marks]

WEEK 12: Cornell Notes (Homework task 1)

Date / /	**1.2 Suitable storage devices** ClearRevise Revision Guide: Page 8 and 9

Links	Notes
 1.2 Suitable storage devices **Questions**	

Summary

WEEK 12: Exam Question (Homework task 2)

Date…….

Question:
Apu has a handheld e-book reader (eg A ‘Kindle’ device) that allows him to store and read electronic books.

State which type of storage is most suitable for storing the electronic books inside the e-book reader. Explain one reason why this type of storage is the most suitable.

Answer:

Storage Type (Magnetic, Optical or Solid State)	**Explain why this type of storage is most suitable**

[3 marks]

WEEK 12: Exam Question review and improvement (Classwork)

Question:
Apu has a handheld e-book reader that allows him to store and read electronic books.

State which type of storage is most suitable for storing the electronic books inside the e-book reader. Explain one reason why this type of storage is the most suitable.

Answer:

Storage Type (Magnetic, Optical or Solid State)	**Explain why this type of storage is most suitable**

[3 marks]

WEEK 13: Cornell Notes (Homework task 1)

Date / /	**1.2 Units of data storage** ClearRevise Revision Guide: Page 11

Links	Notes
 1.2 Units of data storage **Questions**	

Summary

WEEK 13: Exam Question (Homework task 2)

Date…….

Question:
Layla is an artist. She draws images by hand. The image is then scanned and stored on a computer. Layla stores her images on a secondary storage device.

Each image has a fixed size of 1 MB. The storage device has a capacity of 3 GB. Calculate how many images can be saved on the storage device. Show your working.

Answer:

_____ images

[2 marks]

WEEK 13: Exam Question review and improvement (Classwork)

Question:
Layla is an artist. She draws images by hand. The image is then scanned and stored on a computer. Layla stores her images on a secondary storage device.

Each image has a fixed size of 1 MB. The storage device has a capacity of 3 GB. Calculate how many images can be saved on the storage device. Show your working.

Answer:

_____ images

[2 marks]

WEEK 14: Cornell Notes (Homework task 1)

Date / /	**1.2 Processing binary data** ClearRevise Revision Guide: Page 11

Links	Notes
 1.2 Processing binary data **Questions**	

Summary

WEEK 14: Exam Question (Homework task 2)

Date…….

Question:
Computers make use of electronic switches called transistors.

Describe how transistors can be used to store a value in binary.

Answer:

[2 marks]

WEEK 14: Exam Question review and improvement (Classwork)

Question:
Computers make use of electronic switches called transistors.

Describe how transistors can be used to store a value in binary.

Answer:

[2 marks]

WEEK 15: Cornell Notes (Homework task 1)

Date / /	**1.2 Data capacity calculations** ClearRevise Revision Guide: Page 11

Links	Notes
 1.2 Data capacity calculations **Questions**	

Summary

WEEK 15: Exam Question (Homework task 2)

Date…….

Question:
William is creating a film for a school project using a digital video camera. William transfers the videos to a computer for editing.

The computer has 1GB of storage free. Calculate the number of videos that could be stored on the computer if each video was 100MB in size. Show your working.

Answer:

_____ videos

[2 marks]

WEEK 15: Exam Question review and improvement (Classwork)

Question:
William is creating a film for a school project using a digital video camera. William transfers the videos to a computer for editing.

The computer has 1GB of storage free. Calculate the number of videos that could be stored on the computer if each video was 100MB in size. Show your working.

Answer:

_____ videos

[2 marks]

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