

A LEVEL COMPUTER SCIENCE

“Computer Science is a discipline that seeks to understand and explore the world around us, both natural and artificial, in computational terms. Computer Science is particularly, but by no means exclusively, concerned with the study, design, and implementation of computer systems, and understanding the principles underlying these designs.”

Task

You are required to create a challenging single player multiplication game. The game must be suitable for a young target audience.

Aim to include:

- Feedback to each player including a notification when each of the questions have been answered correctly
- A score that increments when each question is answered correctly
- Lives that decrement when each question is answered incorrectly

The game must end when either the score reaches a predetermined number or the lives reach zero.

You must find a suitable programming language or application that will ensure you are able to create the game with a high level of complexity.

You are required to submit;

- Game submitted as an electronic file
- Any code produced
- Evidence of some testing (screen shots to demonstrate it works)

Please Note



We are not expecting a full implementation of a working game and you are not required to create a graphical user interface; However you **MUST** demonstrate a high level of understanding including thorough research capabilities.

Suggested platforms

- Python – text based language
- Scratch – block based language
- PowerPoint – presentation software
- Excel – spreadsheet software

Scratch Example - <https://scratch.mit.edu/projects/189907099/editor/>

Python Example - <https://www.youtube.com/watch?v=v1MUOyskkDg>

Graded Outcomes

A – Outstanding; B – Good; C- Satisfactory; D – Poor attempt

Please submit the following:

- Analysis (description of the problem)
- Success Criteria (list of criteria to solve)
- Design (demonstrate how you expect to solve the problem)
- Implementation (examples of annotated code)
- Testing (screen shots to show how it met the criteria)
- Evaluation (what was successful/unsuccessful?)

	A	B	C	D
Analysis	Clear description of the whole problem.	Description of the whole problem.	Some of the problem is discussed.	Limited description of the problem.
Success Criteria	SMART criteria include everything necessary to solve the problem.	Criteria include nearly everything to solve the problem.	Criteria include some items to solve the problem.	The main criteria is missing.
Design	Clear design without anything missing.	Clear design covering almost all elements.	Design covers most of the elements.	Some items missing in the design.
Implementation	All the code provided has been annotated.	Some of the code is annotated.	Code has been supplied with a few annotations.	Limited evidence of code supplied.
Testing	The screenshots demonstrate	The screenshots demonstrate	The screenshots demonstrate	Limited evidence supplied to

	the whole game works.	most of the game works.	some of the game works.	demonstrate the game is working.
Evaluation (QWC)	Full evaluation with few if any errors.	Evaluation with some errors.	Partly completed evaluation with some errors.	Incomplete evaluation.
Comments				
			Final Mark	

Useful Resources

AQA Computer Science – <http://www.aqa.org.uk/subjects/ict-and-computer-science/as-and-a-level/computer-science-7516-7517>

Specification -

<http://filestore.aqa.org.uk/resources/computing/specifications/AQA-7516-7517-SP-2015.PDF>

Map of Computer Science -

https://www.youtube.com/watch?time_continue=484&v=SzJ46YARaA&feature=emb_logo

Python Tutorial Videos - <https://www.youtube.com/watch?v=YYXdXT2l-Gg&list=PL-osiE80TeTt2d9bfVyTiXJA-UTHn6WwU>

Python Online Tutorials - <https://www.w3schools.com/python/default.asp>

Python IDE - <https://thonny.org/>

Scratch Tutorial - https://www.youtube.com/watch?v=r_1bkFdqv5k

A famous computer scientist once said ...



"Computer science is no more about computers
than astronomy is about telescopes"
Edsger W. Dijkstra

