

GCSE Computing (OCR)

What is GCSE Computing?

The course gives students a real, in-depth understanding of how computer technology works. Students will no doubt be familiar with the use of computers and other related technology from their other subjects and elsewhere. However, this course will give them an insight into what goes on 'behind the scenes', including computer programming.

The course will develop critical thinking, analysis and problem-solving skills through the study of computer programming, giving students a fun and interesting way to develop these skills, which can be transferred to other subjects and even applied in day-to-day life. In this respect, the course provides excellent preparation for students who want to study or work in areas that rely on these skills, especially where they are applied to technical problems. These areas include engineering, financial and resource management, science and medicine.

```
1 import turtle
2 __import__("turtle").__traceable__ = False
3
4 def draw_multicolor_square(t, sz):
5     """Make turtle t draw a multi-color square of sz."""
6     for i in ["red", "purple", "hotpink", "blue"]:
7         t.color(i)
8         t.forward(sz)
9         t.left(90)
10
11 wn = turtle.Screen() # Set up the window and its attributes
12 wn.bgcolor("lightgreen")
13
14 tess = turtle.Turtle() # Create tess and set some attributes
15 tess.pensize(3)
16
17 size = 20 # Size of the smallest square
18 for i in range(15):
19     draw_multicolor_square(tess, size)
20     size = size + 10 # Increase the size for next time
21     tess.forward(10) # Move tess along a little
22     tess.right(18) # ... and give her some extra turn
23
24 wn.mainloop()
25
```

The GCSE Computing qualification provides learners with:

- Gives learners a real, in-depth understanding of how computer technology works
- Provides excellent preparation for higher study and employment in Computer Science
- Develop critical thinking, analysis and problem-solving skills.

What will I study?

Unit title and description	Assessment and duration	Weighting
Unit A451: Computer systems and programming		
This unit covers the body of knowledge about computer systems on which the examination will be based.	1 hour 30 minutes Written paper 80 marks	40%
Unit A452: Practical investigation		
An investigative computing task, chosen from a list provided by OCR, which assesses the following: research, technical understanding, analysis of problem, historical perspective, use of technical writing skills, recommendations/evaluation.	Controlled assessment Investigative task. OCR-set scenario with a choice of research tasks. 45 marks	30%
Unit A453: Programming project		
Students will need to: <ul style="list-style-type: none">• Understand standard programming techniques• Be able to design a coded solution to a problem including the ability to:<ul style="list-style-type: none">- Develop suitable algorithms- Design suitable input and output formats- Identify suitable variables and structures- Identify test procedures.• Create a coded solution fully annotating the developed code to explain its function• Test their solution:<ul style="list-style-type: none">- To show functionality- To show how it matches the design criteria- Identifying successes and any limitations.	Controlled assessment Programming task. Design, develop and test a solution to a problem within the OCR-set scenario. 45 marks	30%

What are the entry requirements?

This is an *extremely* challenging qualification which will stretch the highest achievers. Students will need to be very enthusiastic and highly motivated in order to be successful on this course. Students will need to be prepared to carry out independent research in order to assist them in the completion of this qualification.

Progression after the Course:

The course provides excellent preparation for higher study and employment in the field of computer science. The increasing importance of information technologies means there will be a growing demand for professionals who are qualified in this area. Students who've taken a *GCSE* in Computing and who then progress to study the subject at A Level or university will have an advantage over their colleagues who are picking up the subject at these levels.

For more information contact Mr Bunn or Mr Ridney. Take a look at the OCR website: <http://www.ocr.org.uk/qualifications/gcse-computing-j275-from-2012/>