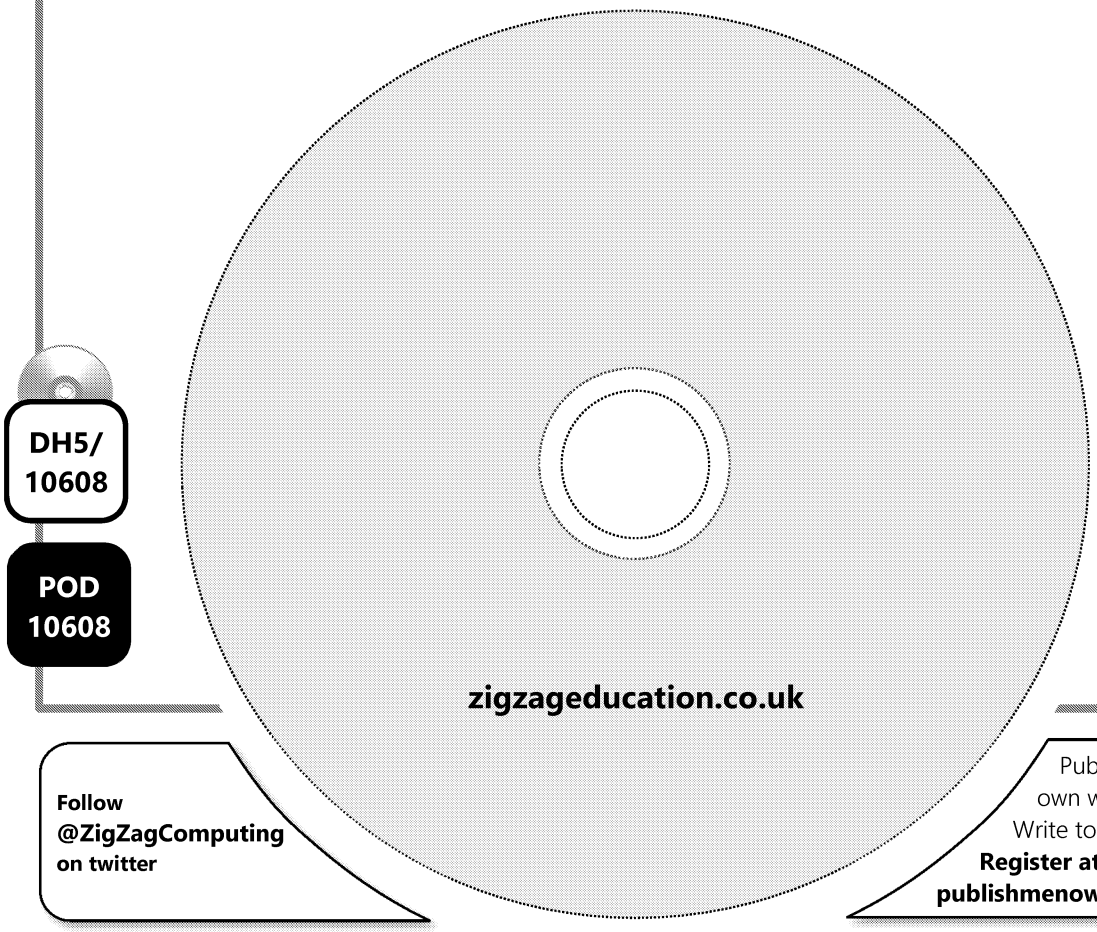
Zig Zag Education

Computer Science GCSE (9–1) | Eduqas | C500QS

2020 specification first exams in 2022

Keyword Activities

for Eduqas GCSE (9-1) Computer Science



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Contents

Teacher's Introduction

Overview

This resource has been produced to support teaching and learning of the **GCSE (9-1) Eduqas Computer Science** specification **C500QS**. The learning content is covered by the following sets of keywords with matching descriptions:

1. *The CPU*
2. *Primary and Secondary Storage*
3. *Networking and The Internet (Part 1)*
4. *Networking and The Internet (Part 2)*
5. *Cybersecurity*
6. *Storage Units, Number Bases and Characters*
7. *Representing Images and Sound, and Compression*
8. *Operating Systems*
9. *Algorithms and Programming Constructs (Part 1)*
10. *Algorithms and Programming Constructs (Part 2)*
11. *Program Construction*
12. *Ethical, Legal and Environmental Impacts*

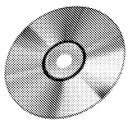
For each set, there are a number of different keyword activities on CD designed to give you a range of different options for classroom use, homework and revision. This variety enables you to take a different approach to different topics – such as using the Crosswords as homework for one topic, and the Match-up as a starter for another.

Alternatively, differentiate the activity for a given topic; for example, you might want to give your stronger students the **Crosswords** early on while you start weaker learners on the **Match-up** (where terms and definitions are both available). **Domino** and **Bingo** activities add an element of fun and reinforcement, as well as the potential for pair and group work. Finally, the **Flash Cards** come into their own for revision and the **Table-fill** and **Write Your Own Glossary** allow students to test their understanding by correctly filling in keywords or definitions.

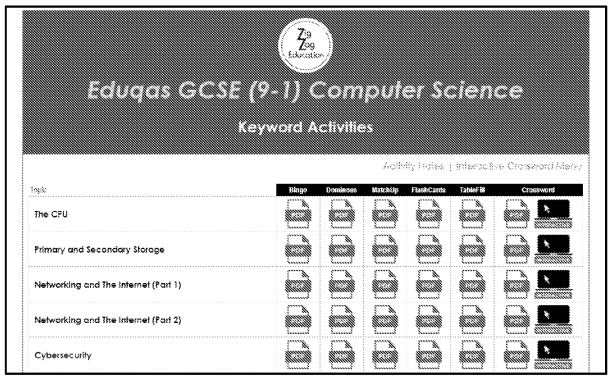
For more information about the different activities included, see overleaf. →

Digital Format!

All of the activities are provided electronically on the accompanying CD. To use on a school network, the entire contents of the CD need to be copied and pasted into an accessible location.



Providing easy access to the activities are two HTML menus:



1. ***Access All* Menu** →

   Location: index.html

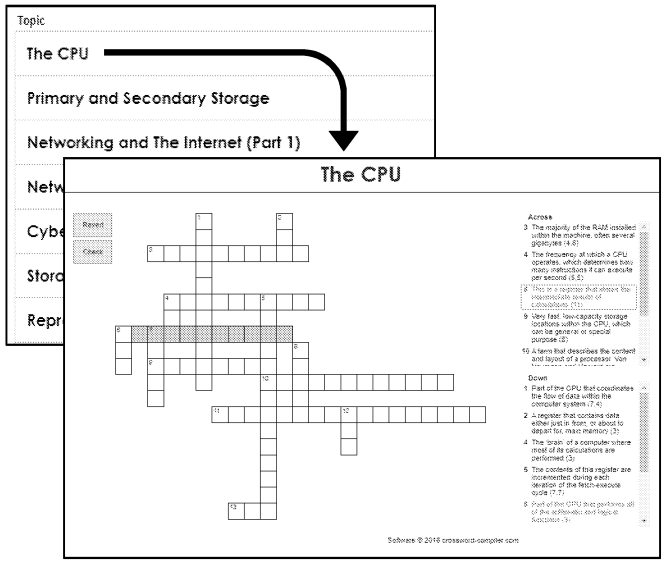
   This menu, designed primarily for teacher use, includes links to everything provided on the CD – allowing you to easily select what you need when preparing your lessons.

   If you intend to give learners access to this menu, then be aware that it does include links to the solutions.

2. ***Interactive Crossword* Menu** →

   Location: interactive-crosswords/index.html

   This menu, which can be accessed via the *Access All* Menu, is included to allow learner access to just the interactive crosswords (without the answers).



Activity Types

All activities are provided as PDF files, allowing for easy printing and sharing on your school's internal network or VLE. In addition, each of the single-page activities (*Crosswords*, *Match-up* and *Table-fill*), as well as the solutions, are provided on paper too.

The activities included in this resource are as follows:

Bingo

✓ PDF

Each student is given a different bingo card containing a selection of words from the set. The teacher reads the definitions using the Keyword Answers, and the student must match the definition to the words on their card to complete rows, columns, and the full bingo card. The bingo activity is available for sets with 12 or more words.

Crosswords

✓ PDF ✓ PAPER

These traditional keyword activities are equally effective as lesson or homework activities – and are also an excellent way of easing students into their revision programme.

In addition to the photocopiable worksheets and PDF, the crosswords are provided in interactive format on the accompanying CD-ROM. These are web-based (HTML5) and will run straight from your Internet browser.

Dominoes / Loop Cards

✓ PDF

This is essentially another match-up activity, but this one is designed to be used in a more active way to engage students. It is recommended that students work in pairs or small groups.

Half of each card contains a keyword, and the other half contains a description. To complete the activity, students must align all the cards in the correct order. There is a 'Start' and a 'Finish', meaning that if any cards are left outside the chain, then students have gone wrong somewhere.

Match-up

✓ PDF ✓ PAPER

Students match descriptions to their keywords by drawing lines between them. Because there are similar descriptions and keywords, students are likely to make the odd mistake while completing the activity, so it is recommended that they use a pencil to start with! By eliminating the keywords that they are familiar with, students can then think about and learn the ones that they are less confident with.

Flash Cards

✓ PDF

These are a helpful revision tool. To make the cards, fold the page in half, then cut out each card and stick them together so the keyword is on one side and the definition the other. In addition, students could use these to play a game of pairs. Cut each card in two and place them all face down on the table. Students will then take it in turns to turn over two cards with the aim of matching a keyword to its definition. Matched-up cards are removed, and the game is finished when all the cards have been matched.

Glossary Builders

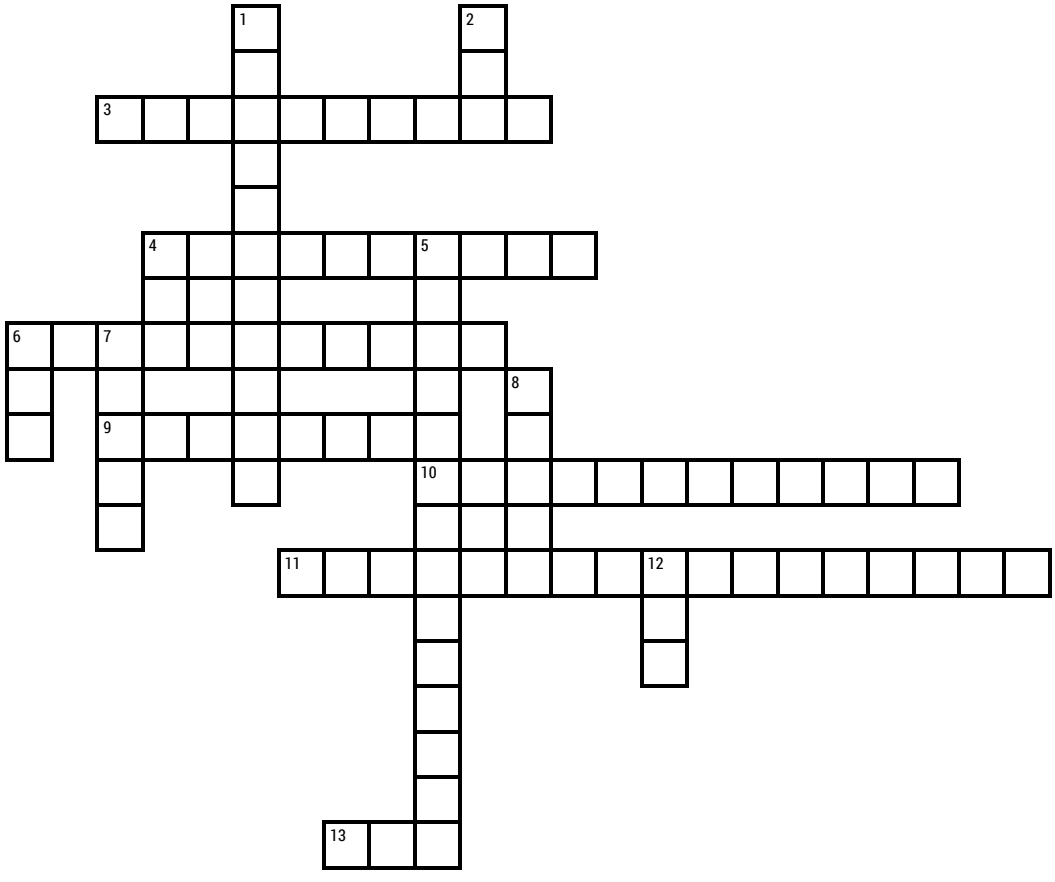
> ***Table-fill***
>
> ✓ PDF ✓ PAPER
>
> Nothing fancy – students simply write the keyword which is being described, without any other help. Because this activity tests the students' own knowledge, it is best used as a homework activity at the end of each topic or during revision. This then acts as a check that they have grasped the key terminology for each topic. Alternatively, the tables could be given to students at the beginning of the topic, to see what they already know.
>
> ---
>
> ***Write Your Own Glossary***
>
> ✓ PDF
>
> Like the Table-fill, this activity can be used to test students before learning a topic, or as a revision tool after learning a topic. Students are given a list of the keywords and need to produce their own definitions. Using Table-fill and Write Your Own Glossary, lessons can be differentiated for all levels of learner.

Selected Activities and Completed Glossary Page

This sample shows one example of several activities.
The whole resource contains approximately 90 activities –
6 or 7 activities for each of the 12 topics.

The resource covers 234 key terms.

The CPU



Across

3 The majority of the RAM installed within the machine, often several gigabytes (4,6)

4 The frequency at which a CPU operates, which determines how many instructions it can execute per second (5,5)

6 This is a register that stores the intermediate results of calculations (11)

9 Very fast, low-capacity storage locations within the CPU, which can be general or special purpose (8)

10 A term that describes the content and layout of a processor. Von Neumann and Harvard are common examples. (12)

11 This is repeated by a computer in order to carry out tasks required of it (5-7,5)

13 A register that stores the memory location that will be accessed next (3)

Down

1 Part of the CPU that coordinates the flow of data within the computer system (7,4)

2 A register that contains data either just in from, or about to depart for, main memory (3)

4 The 'brain' of a computer where most of its calculations are performed (3)

5 The contents of this register are incremented during each iteration of the fetch-execute cycle (7,7)

6 Part of the CPU that performs all of the arithmetic and logical functions (3)

7 There may be many of these individual processors within a CPU (5)

8 A small, high-speed type of memory that stores frequently used instructions or data (5)

12 A register that contains the instruction currently being worked on by the CPU (3)

The CPU *(Table Fill)*

This is a register that stores the intermediate results of calculations	
Part of the CPU that performs all of the arithmetic and logical functions	
A term that describes the content and layout of a processor. Von Neumann and Harvard are common examples.	
A small, high-speed type of memory that stores frequently used instructions or data	
The frequency at which a CPU operates, which determines how many instructions it can execute per second	
Part of the CPU that coordinates the flow of data within the computer system	
There may be many of these individual processors within a CPU	
The 'brain' of a computer where most of its calculations are performed	
A register that contains the instruction currently being worked on by the CPU	
This is repeated by a computer in order to carry out tasks required of it	
The majority of the RAM installed within the machine, often several gigabytes	
A register that stores the memory location that will be accessed next	
A register that contains data either just in from, or about to depart for, main memory	
The contents of this register are incremented during each iteration of the fetch-execute cycle	
Very fast, low-capacity storage locations within the CPU, which can be general or special purpose	

The CPU *(Match Up)*

1	A register that contains data either just in from, or about to depart for, main memory
2	A register that contains the instruction currently being worked on by the CPU
3	A register that stores the memory location that will be accessed next
4	A small, high-speed type of memory that stores frequently used instructions or data
5	A term that describes the content and layout of a processor. Von Neumann and Harvard are common examples.
6	Part of the CPU that coordinates the flow of data within the computer system
7	Part of the CPU that performs all of the arithmetic and logical functions
8	The 'brain' of a computer where most of its calculations are performed
9	The contents of this register are incremented during each iteration of the fetch-execute cycle
10	The frequency at which a CPU operates, which determines how many instructions it can execute per second
11	The majority of the RAM installed within the machine, often several gigabytes
12	There may be many of these individual processors within a CPU
13	This is a register that stores the intermediate results of calculations
14	This is repeated by a computer in order to carry out tasks required of it
15	Very fast, low-capacity storage locations within the CPU, which can be general or special purpose

ACCUMULATOR	
ALU	
ARCHITECTURE	
CACHE	
CLOCK SPEED	
CONTROL UNIT	
CORES	
CPU	
CIR	
FETCH-EXECUTE CYCLE	
MAIN MEMORY	
MAR	
MDR	
PROGRAM COUNTER	
REGISTER	

The CPU