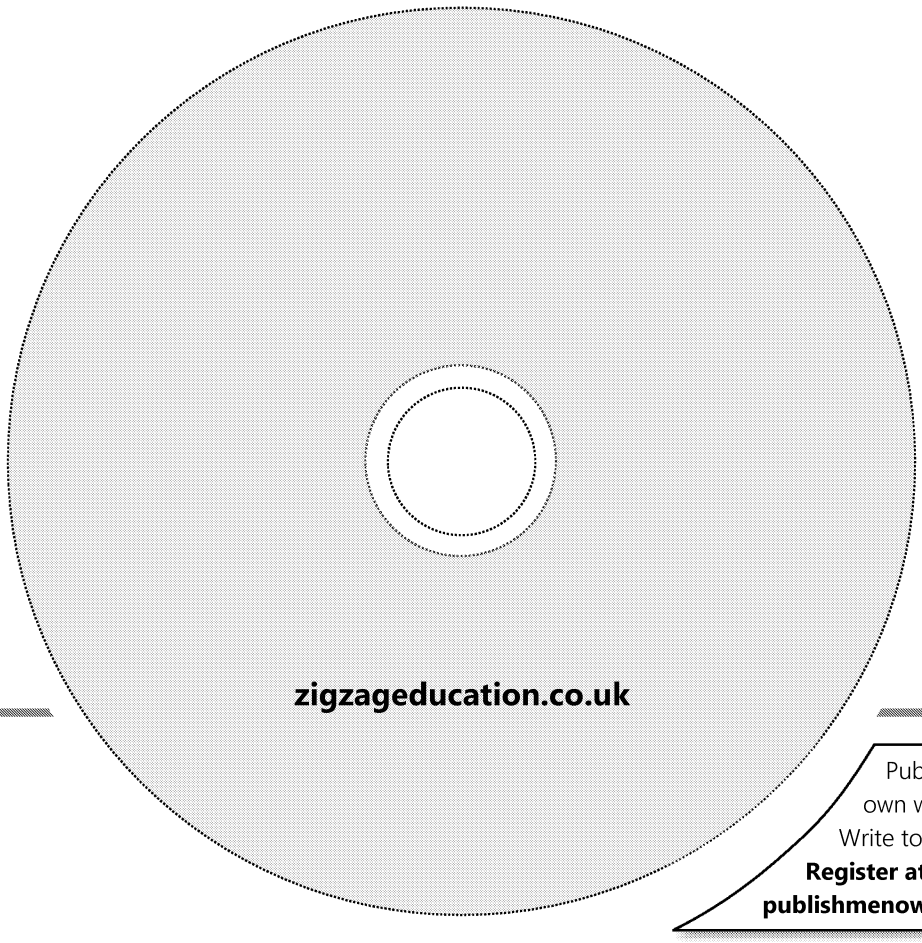
Zig Zag Education

Computer Science GCSE (9–1) | OCR | J277

2020 specification
First examinations from 2022

Keyword Activities

for OCR GCSE Computer Science (J277)



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Contents

Teacher's Introduction

Overview

This resource has been produced to support teaching and learning of the *OCR GCSE (9–1) Computer Science* specification *(J277)*. The learning content is covered by the following sets of keywords with matching descriptions, which cover all of the subject content in Component 01 and Component 02.

- *Systems Architecture (1.1)*
- *Primary Storage (1.2.1) & Secondary Storage (1.2.2)*
- *Units, Data Storage & Compression (1.2.3—1.2.5)*
- *Networks and Topologies (1.3.1)*
- *Wired & Wireless Networks, Protocols and Layers (1.3.2)*
- *Network Security (1.4)*
- *Operating Systems & Utility Software (1.5.1—1.5.2)*
- *Ethical, Legal, Cultural & Environmental Impacts (1.6)*
- *Algorithms (2.1)*
- *Programming Fundamentals (2.2) - Part 1*
- *Programming Fundamentals (2.2) - Part 2*
- *Defensive Design & Testing (2.3)*
- *Boolean Logic, Languages & IDEs (2.4—2.5)*

OCR (J277) specification references are given in brackets

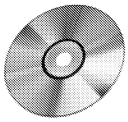
For each set, there are a number of different keyword activities on CD designed to give you a range of different options for classroom, homework and revision. This variety enables you to take a different approach to different topics – such as using the Crosswords as homework for one topic, and the Match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

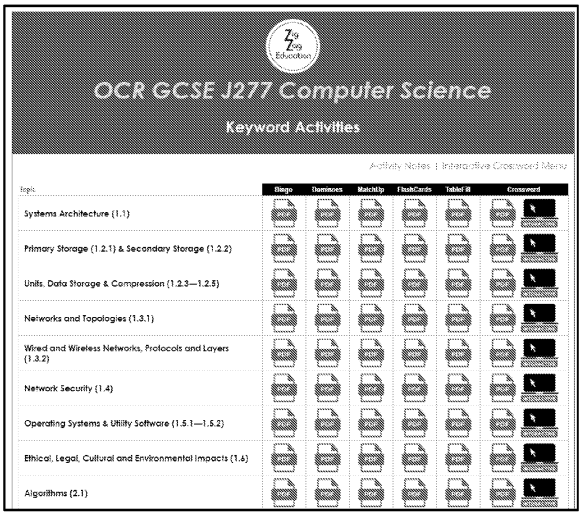
For more information about the different activities included, see overleaf →

Digital Format

All of the activities are provided electronically on the accompanying CD. To use on a *secure* school network/VLE, the entire contents of the CD needs 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**

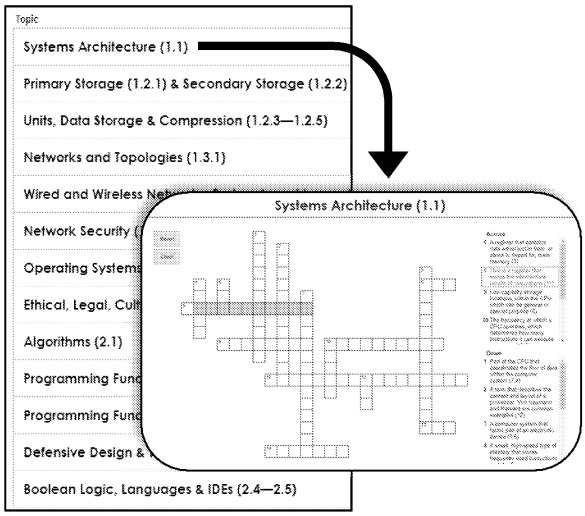
   This menu, designed primarily for teacher use, includes links to everything on provided on the CD – allowing you to easily select what you need when preparing your lessons.

   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).

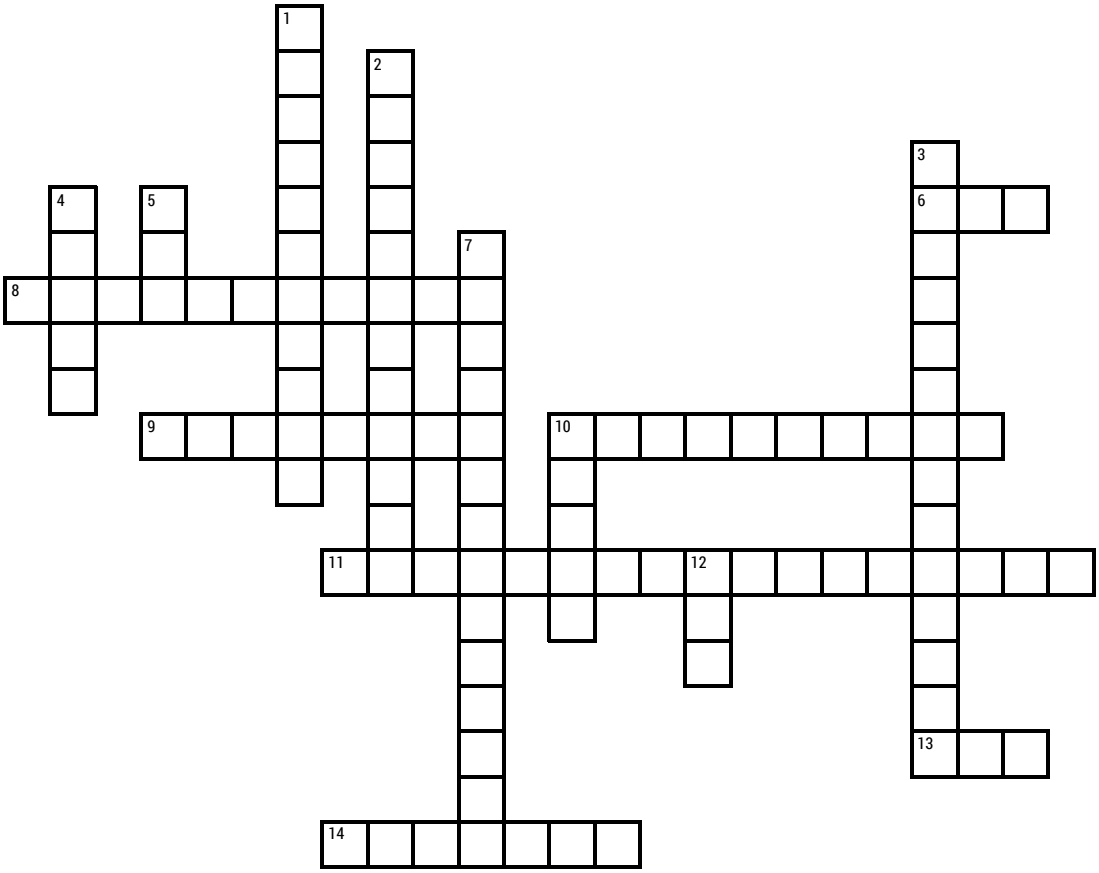


Selected Activities and Completed Glossary Page

This sample shows one example of several activities.
The whole resource contains approximately 90 activities –
6 or 7 activities for each of the 13 topics.

The resource covers 197 key terms.

Systems Architecture (1.1)



Across

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

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

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

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

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)

14 Each memory location is identified by a unique one of these (7)

Down

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

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

3 A computer system that forms part of an electronic device (8,6)

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

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

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

10 A single CPU may contain numerous individual processors, called… (5)

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

Systems Architecture (1.1) *(Table Fill)*

This is a register that stores the intermediate results of calculations	
Each memory location is identified by a unique one of these	
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	
A single CPU may contain numerous individual processors, called…	
The 'brain' of a computer where most of its calculations are performed	
A computer system that forms part of an electronic device	
This is repeated by a computer in order to carry out tasks required of it	
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	
Low-capacity storage locations, within the CPU, which can be general or special purpose	

Systems Architecture (1.1) *(Match Up)*

1	A computer system that forms part of an electronic device
2	A register that contains data either just in from, or about to depart for, main memory
3	A register that stores the memory location that will be accessed next
4	A single CPU may contain numerous individual processors, called…
5	A small, high-speed type of memory that stores frequently used instructions or data
6	A term that describes the content and layout of a processor; Von Neumann and Harvard are common examples
7	Each memory location is identified by a unique one of these
8	Low-capacity storage locations, within the CPU, which can be general or special purpose
9	Part of the CPU that coordinates the flow of data within the computer system
10	Part of the CPU that performs all of the arithmetic and logical functions
11	The 'brain' of a computer where most of its calculations are performed
12	The contents of this register are incremented during each iteration of the fetch-execute cycle
13	The frequency at which a CPU operates, which determines how many instructions it can execute per second
14	This is a register that stores the intermediate results of calculations
15	This is repeated by a computer in order to carry out tasks required of it

ACCUMULATOR	
ADDRESS	
ALU	
ARCHITECTURE	
CACHE	
CLOCK SPEED	
CONTROL UNIT	
CORES	
CPU	
EMBEDDED SYSTEM	
FETCH-EXECUTE CYCLE	
MAR	
MDR	
PROGRAM COUNTER	
REGISTER	

Systems Architecture (1.1)