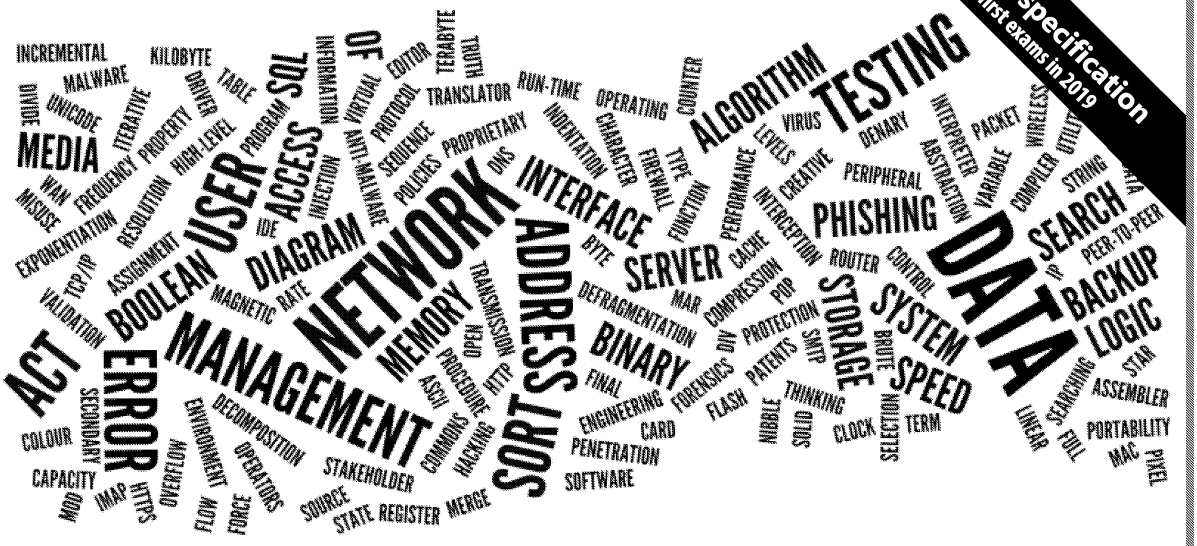
Zig Zag Education

Computer Science GCSE | WJEC | 3500QS

2017 specification
first exams in 2019



Keyword Activities

for WJEC GCSE Computer Science (2017 spec)

BG11/ 7529

POD 7529

zigzageducation.co.uk

Contents

Teacher's Introduction

Overview

This resource has been produced to support teaching and learning of the *WJEC GCSE Computer Science* specification (first teaching September 2017). The learning content is covered by the following sets of keywords with matching descriptions, which cover all of the subject content in Unit 1 and Unit 2.

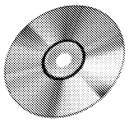
- *Hardware Devices*
- *System Architecture and Logic*
- *Networking and The Internet (Part 1)*
- *Networking and The Internet (Part 2)*
- *Storage Units, Number Bases and Characters*
- *Representing Images and Sound*
- *Operating Systems*
- *Software Development*
- *Security and Data Management (Part 1)*
- *Security and Data Management (Part 2)*
- *Ethical, Legal and Environmental Impacts*
- *Problem Solving, Algorithms and Programming Constructs*
- *Programming (Part 1)*
- *Programming (Part 2)*

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.

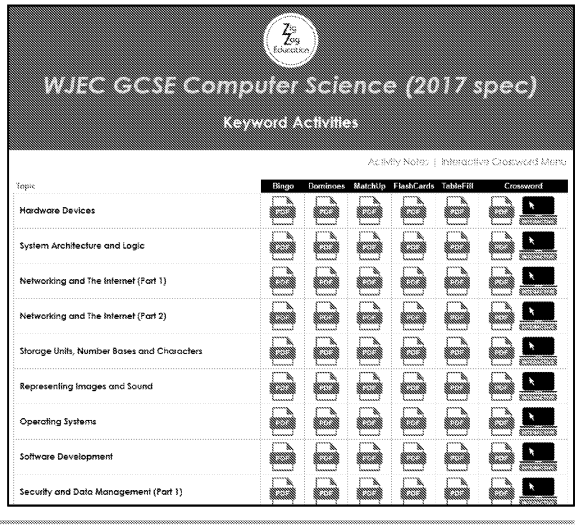
Alternatively, differentiate the activity for a given topic; for example, you might want to give your stronger students the **Crosswords** early on while you start weaker learners on the **Match Up** (where terms and definitions are both available). **Domino** and **Bingo** activities add an element 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

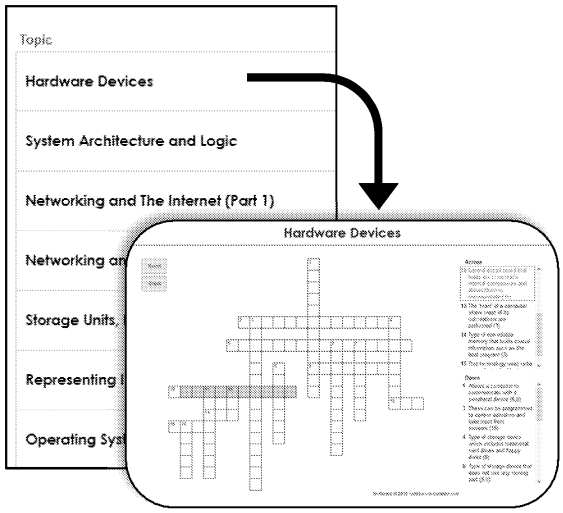
   This menu, designed primarily for teacher use, includes links to everything on provided on the CD – allowing you to easily select what you need when preparing your lessons.

   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).



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Register your email address to receive any future free updates* made to this resource or other Computer Science resources your school has purchased, and details of any promotions for your subject.

** resulting from minor specification changes, suggestions from teachers and peer reviews, or occasional errors reported by customers*

Go to **zzed.uk/freeupdates**

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

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.

✓ PDF

Crosswords

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

✓ PDF ✓ PAPER

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

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.

✓ PDF

Half of each card contains a keyword, and the other 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 of the chain, then students have gone wrong somewhere.

Match Up

Students match descriptions to their keyword 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.

✓ PDF ✓ PAPER

Flash Cards

These are a helpful revision tool. To make the cards, fold the page in half, then cut each card and stick 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 face down on the table.
Students will then take it in turns to turn over two cards with the aim of matching up a keyword to its definition. Matched up cards are removed and the game is finished when all the cards have been matched.

✓ PDF

Table Fill

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, they could be given to students at the beginning of the topic, to see what they already know.

✓ PDF ✓ PAPER

Write Your Own Glossary

Like the Table Fill, this activity can be used to test pupils 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.

✓ PDF

Selected Activities and Completed Glossary Page

This sample shows one example of several activities.
The whole resource contains approximately 100 activities –
6 or 7 activities for each of the 14 topics.

The resource covers 254 key terms.

Hardware Devices *(Match Up)*

Type of storage device that does not use any moving part	***CPU***
A computer system that forms part of an electronic device	***DEVICE DRIVER***
Allows a computer to communicate with a peripheral device	***EMBEDDED SYSTEM***
Central circuit board that holds the computer's internal components and allows them to communicate	***FLASH***
Main memory of a computer that stores data, applications and the operating system while in use	***HARDWARE***
Memory type used by SSDs, USB drives and SD cards (derived from solid-state storage)	***MAGNETIC STORAGE***
Non-volatile memory which is not directly accessed by the CPU; used to save data and program files	***MICROCONTROLLER***
Term used to describe memory that requires power to maintain the data stored within it	***MOTHERBOARD***
The 'brain' of a computer where most of its calculations are performed	***OPTICAL STORAGE***
The physical parts that make up a computer system	***RAM***
These can be programmed to control actuators and take input from sensors	***RFID***
This technology uses radio waves to track objects, people or animals	***ROM***
Type of memory that combines the computer's RAM with temporary space on the hard disk	***SECONDARY STORAGE***
Type of non-volatile memory that holds crucial information such as the boot program	***SOLID STATE STORAGE***
Type of storage device which includes traditional hard drives and floppy disks	***VIRTUAL MEMORY***
Type of storage device which involves the use of lasers to read and write data, e.g. CD, DVD	***VOLATILE***

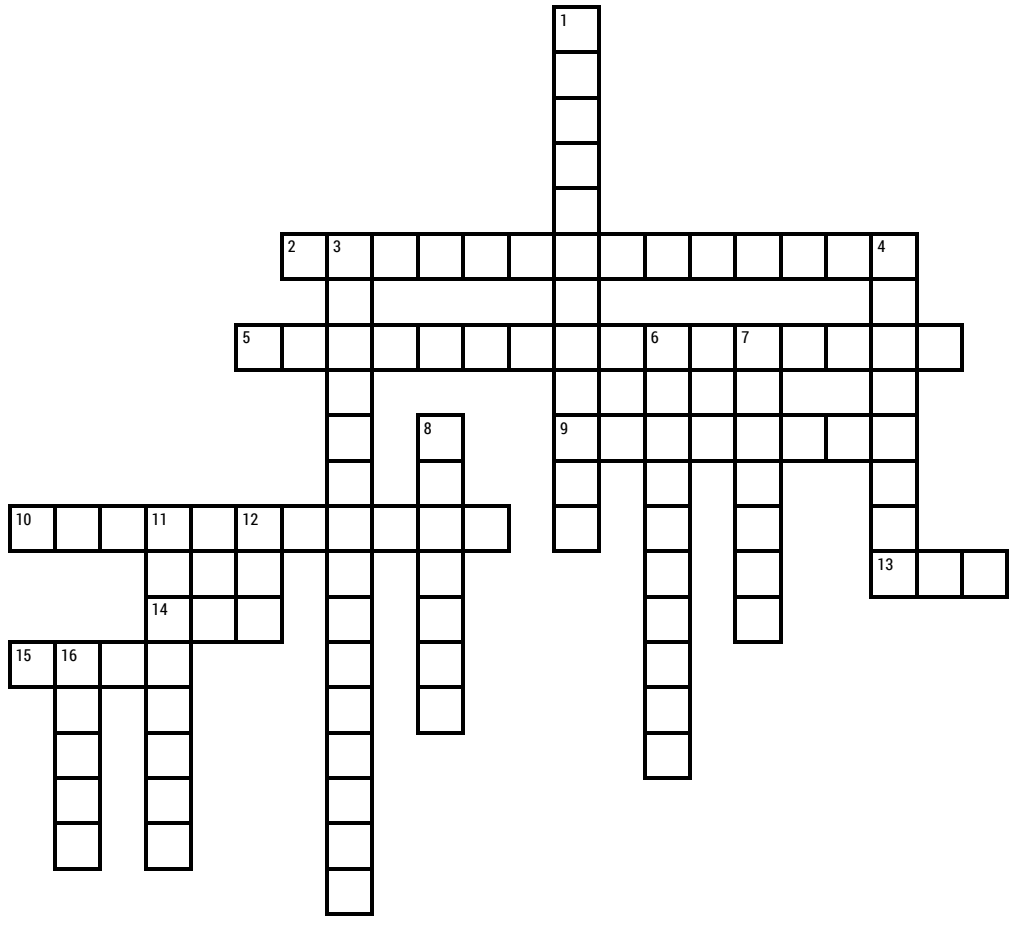
Hardware Devices *(Flash Cards)*

The 'brain' of a computer where most of its calculations are performed	***CPU***
Allows a computer to communicate with a peripheral device	***DEVICE DRIVER***
A computer system that forms part of an electronic device	***EMBEDDED SYSTEM***
Memory type used by SSDs, USB drives and SD cards (derived from solid-state storage)	***FLASH***
The physical parts that make up a computer system	***HARDWARE***
Type of storage device which includes traditional hard drives and floppy disks	***MAGNETIC STORAGE***
These can be programmed to control actuators and take input from sensors	***MICROCONTROLLER***
Central circuit board that holds the computer's internal components and allows them to communicate	***MOTHERBOARD***
Type of storage device which involves the use of lasers to read and write data, e.g. CD, DVD	***OPTICAL STORAGE***
Main memory of a computer that stores data, applications and the operating system while in use	***RAM***

Hardware Devices *(Dominoes)*

– START –	Type of storage device that does not use any moving part
SOLID STATE STORAGE	A computer system that forms part of an electronic device
EMBEDDED SYSTEM	Allows a computer to communicate with a peripheral device
DEVICE DRIVER	Central circuit board that holds the computer's internal components and allows them to communicate
MOTHERBOARD	Main memory of a computer that stores data, applications and the operating system while in use
RAM	Memory type used by SSDs, USB drives and SD cards (derived from solid-state storage)
FLASH	Non-volatile memory which is not directly accessed by the CPU; used to save data and program files
SECONDARY STORAGE	Term used to describe memory that requires power to maintain the data stored within it
VOLATILE	The 'brain' of a computer where most of its calculations are performed
CPU	The physical parts that make up a computer system

Hardware Devices



Across

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

5 Non-volatile memory which is not directly accessed by the CPU; used to save data and program files (9,7)

9 Term used to describe memory that requires power to maintain the data stored within it (8)

10 Central circuit board that holds the computer's internal components and allows them to communicate (11)

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

14 Type of non-volatile memory that holds crucial information such as the boot program (3)

15 This technology uses radio waves to track objects, people or animals (4)

Down

1 Allows a computer to communicate with a peripheral device (6,6)

3 These can be programmed to control actuators and take input from sensors (15)

4 Type of storage device which includes traditional hard drives and floppy disks (8)

6 Type of storage device that does not use any moving part (5,5)

7 Type of storage device which involves the use of lasers to read and write data, e.g. CD, DVD (7)

8 Type of memory that combines the computer's RAM with temporary space on the hard disk (7)

11 The physical parts that make up a computer system (8)

12 Main memory of a computer that stores data, applications and the operating system while in use (3)

16 Memory type used by SSDs, USB drives and SD cards (derived from solid-state storage) (5)

Hardware Devices *(Bingo)*

OPTICAL STORAGE	***CPU***	***MICROCONTROLLER***
VIRTUAL MEMORY	***RAM***	***RFID***
VOLATILE	***FLASH***	***SOLID STATE STORAGE***

Additional Terms:

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....
7. .....

Hardware Devices *(Bingo)*

SECONDARY STORAGE	***EMBEDDED SYSTEM***	***DEVICE DRIVER***
VIRTUAL MEMORY	***OPTICAL STORAGE***	***RAM***
FLASH	***MOTHERBOARD***	***MICROCONTROLLER***

Additional Terms:

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....
7. .....

Hardware Devices

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