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Teacher's Introduction

Overview

This resource has been produced to support teaching and learning of the **A Level OCR Computer Science** specification **H046/H446**. The learning content is covered by the following sets of keywords with matching descriptions, which cover all of the learning aims for the topic:

- Computer Components ^{1.1}
- Processors and the Fetch-Decode-Execute Cycle ^{1.1}
- Systems Software ^{1.2}
- Program Development and Compilation ^{1.2}
- Programming Paradigms ^{1.2}
- Databases, Compression and Encryption ^{1.3}
- Networks and Web Technologies ^{1.3}
- Data Types ^{1.4}
- Graphs and Boolean Logic ^{1.4}
- Ethics and Technology ^{1.5}
- Computational Thinking and Programming Principles ^{2.1–2.2}
- Algorithms ^{2.3}

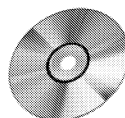
For each set, there are a number of different keyword activities on CD designed to give you a range of different options for classroom use, homework and revision. This variety enables you to take a different approach to different topics – such as using the Crosswords as homework for one topic, and the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

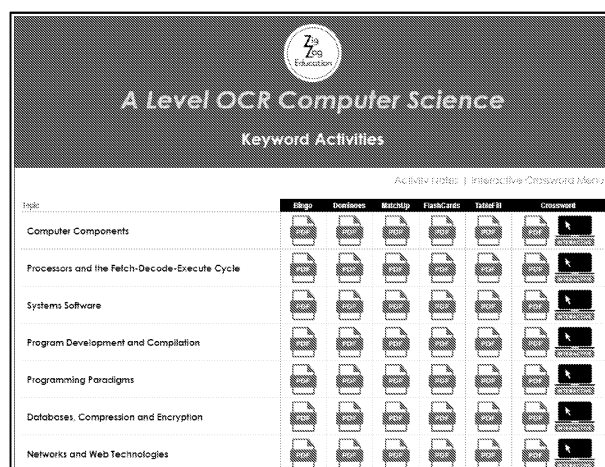
1. Access All Menu



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](#)

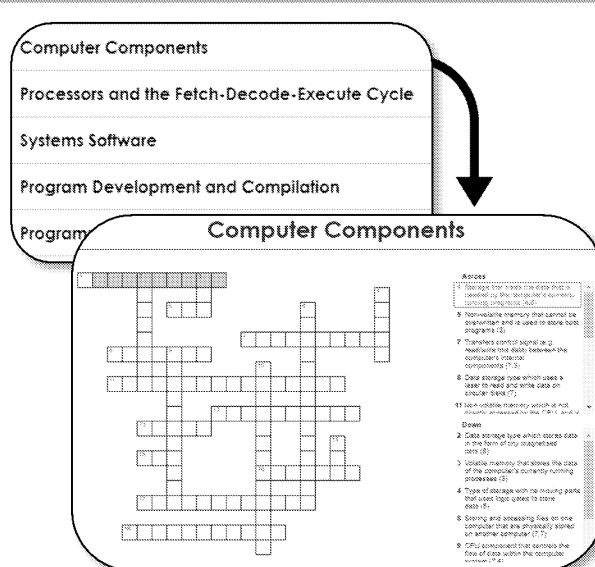
This menu, which can be accessed via the Access All Menu, is included to allow learner access to just the interactive crosswords (without the answers).

Free Updates!

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. The bingo activity is available for sets with 12 or more words.

✓ PDF

Crosswords

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.

✓ PDF ✓ PAPER



INTERACTIVE

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

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 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

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.

✓ PDF ✓ PAPER

Flash Cards

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.

✓ PDF

Glossary Builders

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, the tables 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 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.

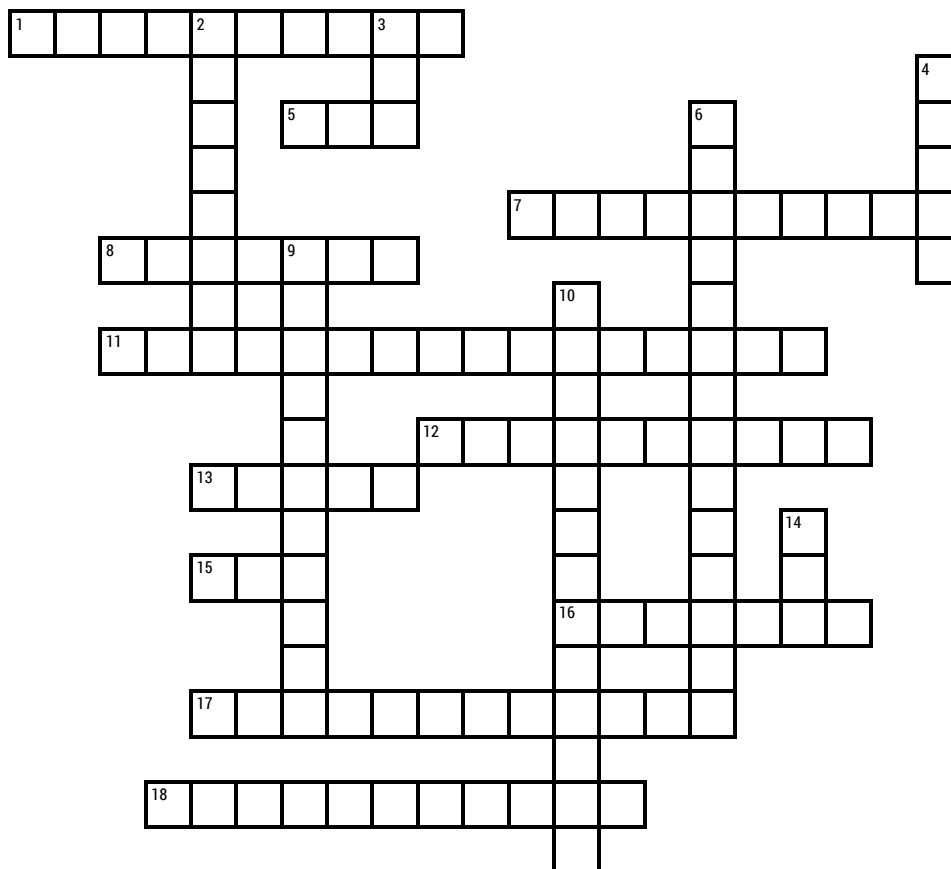
✓ PDF

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 230 key terms.

Computer Components



Across

- 1 Storage that holds the data that is needed by the computer's currently running programs (4,6)
- 5 Non-volatile memory that cannot be overwritten and is used to store boot programs (3)
- 7 Transfers control signal (e.g. read/write this data) between the computer's internal components (7,3)
- 8 Data storage type which uses a laser to read and write data on circular disks (7)
- 11 Non-volatile memory which is not directly accessed by the CPU, and is used to save data and program files (9,7)
- 12 Transfers memory addresses between the computer's internal components (7,3)
- 13 CPU component that regulates when each fetch-decode-execute cycle should start (5)
- 15 Specialised type of processor designed for speeding up graphical operations, but used for other repetitive tasks (3)
- 16 Transfers data between the computer's internal components (4,3)
- 17 Any hardware device that acts on data received from a computer system (6,6)
- 18 Any hardware device that sends data to a computer system (5,6)

Down

- 2 Data storage type which stores data in the form of tiny magnetised dots (8)
- 3 Volatile memory that stores the data of the computer's currently running processes (3)
- 4 Type of storage with no moving parts that uses logic gates to store data (5)
- 6 Storing and accessing files on one computer that are physically stored on another computer (7,7)
- 9 CPU component that controls the flow of data within the computer system (7,4)
- 10 Non-volatile hardware device used to hold data (7,6)
- 14 Central internal component that carries out all of the computer's processing (3)

Computer Components *(Table Fill)*

Transfers memory addresses between the computer's internal components	
CPU component that regulates when each fetch–decode–execute cycle should start	
Transfers control signal (e.g. read/write this data) between the computer's internal components	
CPU component that controls the flow of data within the computer system	
Central internal component that carries out all of the computer's processing	
Transfers data between the computer's internal components	
Type of storage with no moving parts that uses logic gates to store data	
Specialised type of processor designed for speeding up graphical operations, but used for other repetitive tasks	
Any hardware device that sends data to a computer system	
Data storage type which stores data in the form of tiny magnetised dots	
Storage that holds the data that is needed by the computer's currently running programs	
Data storage type which uses a laser to read and write data on circular disks	
Any hardware device that acts on data received from a computer system	
Volatile memory that stores the data of the computer's currently running processes	
Non-volatile memory that cannot be overwritten and is used to store boot programs	
Non-volatile memory which is not directly accessed by the CPU, and is used to save data and program files	
Non-volatile hardware device used to hold data	
Storing and accessing files on one computer that are physically stored on another computer	

Computer Components *(Match Up)*

1	Any hardware device that acts on data received from a computer system
2	Any hardware device that sends data to a computer system
3	Central internal component that carries out all of the computer's processing
4	CPU component that controls the flow of data within the computer system
5	CPU component that regulates when each fetch–decode–execute cycle should start
6	Data storage type which stores data in the form of tiny magnetised dots
7	Data storage type which uses a laser to read and write data on circular disks
8	Non-volatile hardware device used to hold data
9	Non-volatile memory that cannot be overwritten and is used to store boot programs
10	Non-volatile memory which is not directly accessed by the CPU, and is used to save data and program files
11	Specialised type of processor designed for speeding up graphical operations, but used for other repetitive tasks
12	Storage that holds the data that is needed by the computer's currently running programs
13	Storing and accessing files on one computer that are physically stored on another computer
14	Transfers control signal (e.g. read/write this data) between the computer's internal components
15	Transfers data between the computer's internal components
16	Transfers memory addresses between the computer's internal components
17	Type of storage with no moving parts that uses logic gates to store data
18	Volatile memory that stores the data of the computer's currently running processes

ADDRESS BUS	
CLOCK	
CONTROL BUS	
CONTROL UNIT	
CPU	
DATA BUS	
FLASH	
GPU	
INPUT DEVICE	
MAGNETIC	
MAIN MEMORY	
OPTICAL	
OUTPUT DEVICE	
RAM	
ROM	
SECONDARY STORAGE	
STORAGE DEVICE	
VIRTUAL STORAGE	

Computer Components

