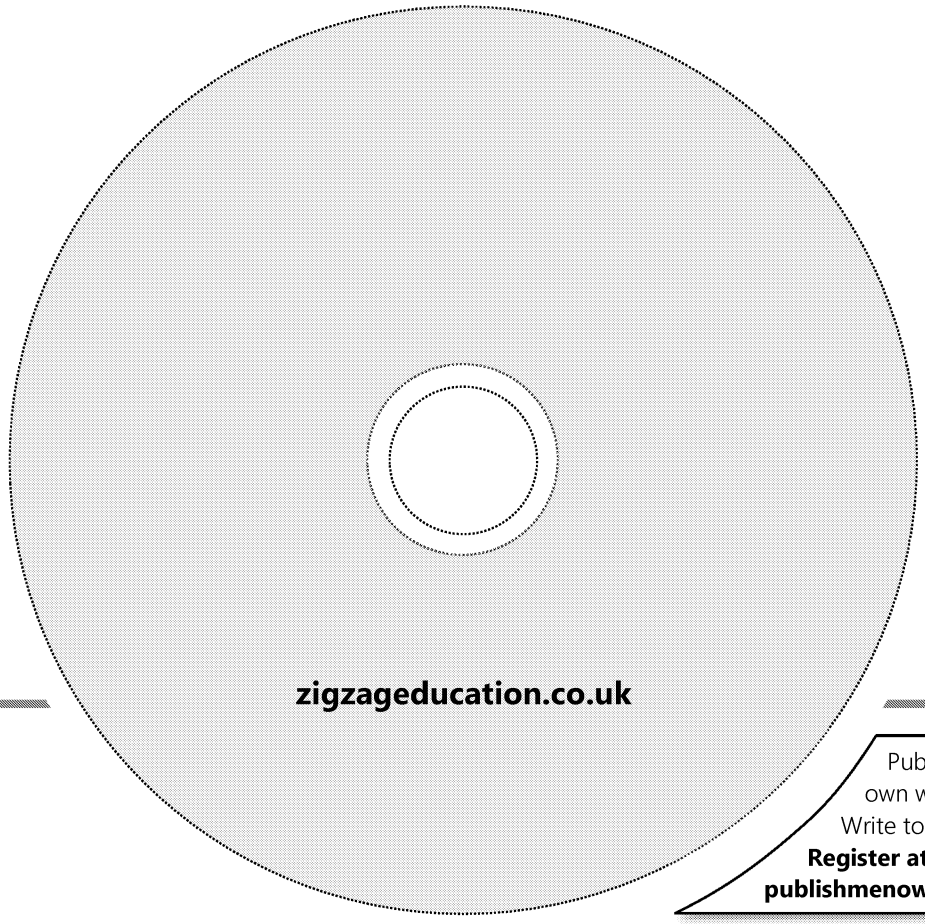
Zig Zag Education

Physics

A Level | AQA | 7408

Crosswords & Keyword Activities

For A Level Year 2 AQA Physics



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Contents

Teacher's Introduction

Overview

This resource has been produced to support teaching and learning of the AS and A Level Year 1 AQA Physics specification 7407. The learning content is covered by the following sets of keywords with matching descriptions, which cover all of the Learning Aims for the topic:

- *Further Mechanics*
- *Thermal Physics*
- *Gravitational Fields and their Consequences*
- *Electric Fields and their Consequences*
- *Electromagnetic Fields and their Consequences*
- *Nuclear Physics*
- *Astrophysics: Telescopes*
- *Astrophysics: Classification of Stars*
- *Astrophysics: Cosmology*
- *Medical Physics: Physics of the Eye and Ear*
- *Medical Physics: Non-Ionising Imaging*
- *Medical Physics: X-ray and Radionuclide Imaging*
- *Engineering Physics*
- *The Discovery of the Electron and Wave-Particle Duality*
- *Special Relativity*
- *Discrete Semiconductor Devices and Analogue and Digital Signals*
- *Operational Amplifiers and Data Communication*

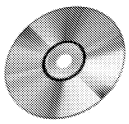
For each set, there are a number of different keyword activities on CD designed to give you a range of different options for classroom, homework and revision. This variety enables you to take a different approach to different topics – such as using the Crosswords as homework for one topic, and the Match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

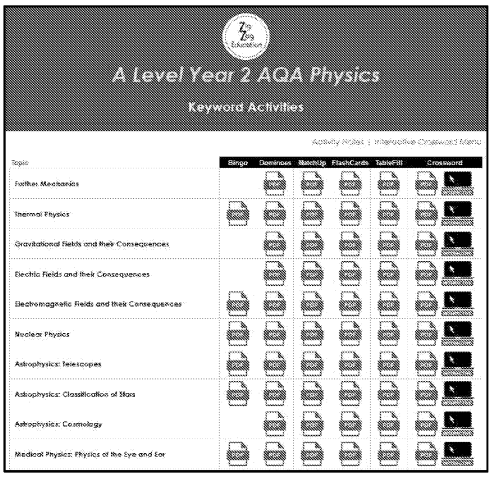
For more information about the different activities included, see overleaf ➔

Digital Format!

All of the activities are provided electronically on the accompanying CD. To use on a school network, 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

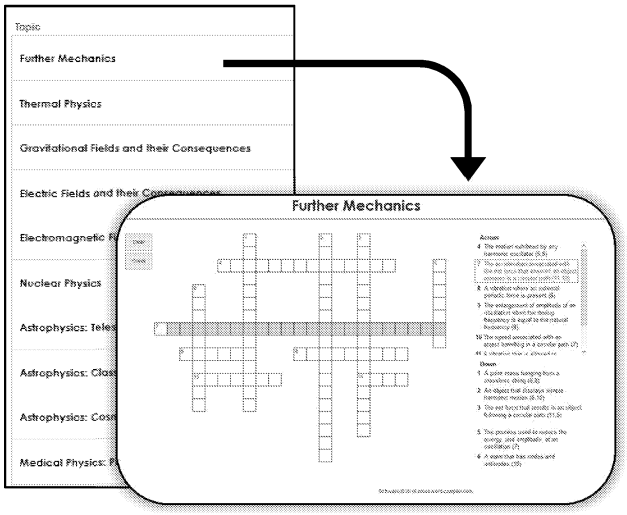
   This menu, designed primarily for teacher use, includes links to everything on provided on the CD – allowing you to easily select what you need when preparing your lessons.

   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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** 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

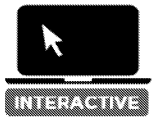
Each student is given a different bingo card containing a selection of words from the set. The teacher reads the definitions using the Keyword Answers and the student must match the definition to the words on their card to complete rows, columns, and the full bingo card.

✓ 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.

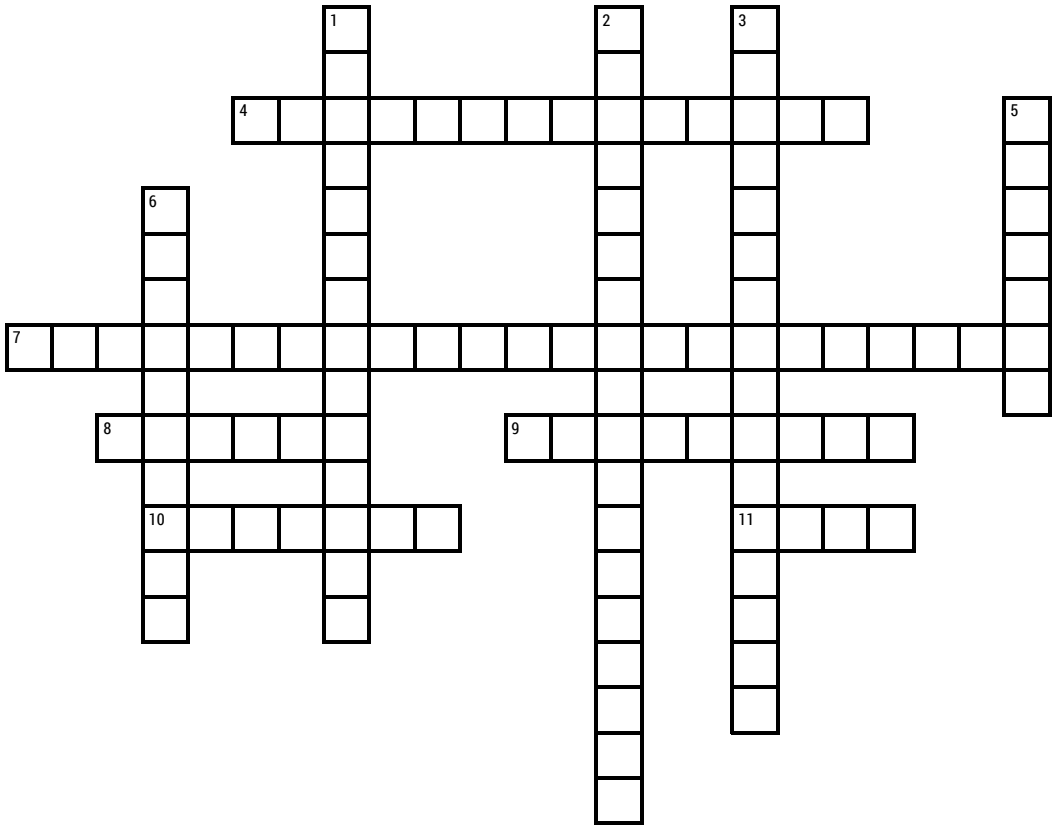
✓ PDF

Selected Activities and Completed Glossary Page

This sample shows one example of several activities.
The whole resource contains approximately 40 activities –
6 or 7 activities for each of the 6 topics.

The resource covers 173 key terms.

Further Mechanics



Across

4 The motion exhibited by any harmonic oscillator (6,8)

7 The acceleration associated with the net force that ensures an object remains in a circular path (11,12)

8 A vibration where an external periodic force is present (6)

9 The enlargement of amplitude of an oscillation when the driving frequency is equal to the natural frequency (9)

10 The speed associated with an object travelling in a circular path (7)

11 A vibration that is allowed to oscillate at its natural frequency without the contribution of any external forces (4)

Down

1 A point mass hanging from a massless string (6,8)

2 An object that displays simple harmonic motion (8,10)

3 The net force that results in an object following a circular path (11,5)

5 The process used to reduce the energy, and amplitude, of an oscillation (7)

6 A wave that has nodes and antinodes (10)

Further Mechanics *(Table Fill)*

A device comprised of a mass attached to a length of string or wire	
A object that experiences a restoring force when displaced from equilibrium, which is proportional to is displacement and opposite in direction	
A oscillation that is allowed to move at its natural frequency without the contribution of any external factors	
A wave whose particles appear to remain stationary and oscillate with maximum amplitude	
An oscillation that experiences an external periodic force	
The acceleration due to a centripetal force acting on an object, with direction towards the centre of the circular path	
The enlargement of amplitude of an oscillation when the driving frequency is equal to the natural frequency	
The motion of an object whose displacement is proportional to its acceleration, and whose acceleration directly opposes its displacement	
The net force that causes an object to follow a circular path, and is directed towards the centre of the path	
The process that reduces the energy of an oscillation and therefore its amplitude	
The rate of change of angular displacement	

Further Mechanics *(Match Up)*

A device comprised of a mass attached to a length of string or wire	***centripetal force***
A object that experiences a restoring force when displaced from equilibrium, which is proportional to is displacement and opposite in direction	***angular speed***
A oscillation that is allowed to move at its natural frequency without the contribution of any external factors	***centripetal acceleration***
A wave whose particles appear to remain stationary and oscillate with maximum amplitude	***simple harmonic motion***
An oscillation that experiences an external periodic force	***simple pendulum***
The acceleration due to a centripetal force acting on an object, with direction towards the centre of the circular path	***harmonic oscillator***
The enlargement of amplitude of an oscillation when the driving frequency is equal to the natural frequency	***damping***
The motion of an object whose displacement is proportional to its acceleration, and whose acceleration directly opposes its displacement	***free vibration***
The net force that causes an object to follow a circular path, and is directed towards the centre of the path	***forced vibration***
The process that reduces the energy of an oscillation and therefore its amplitude	***resonance***
The rate of change of angular displacement	***stationary wave***

Further Mechanics