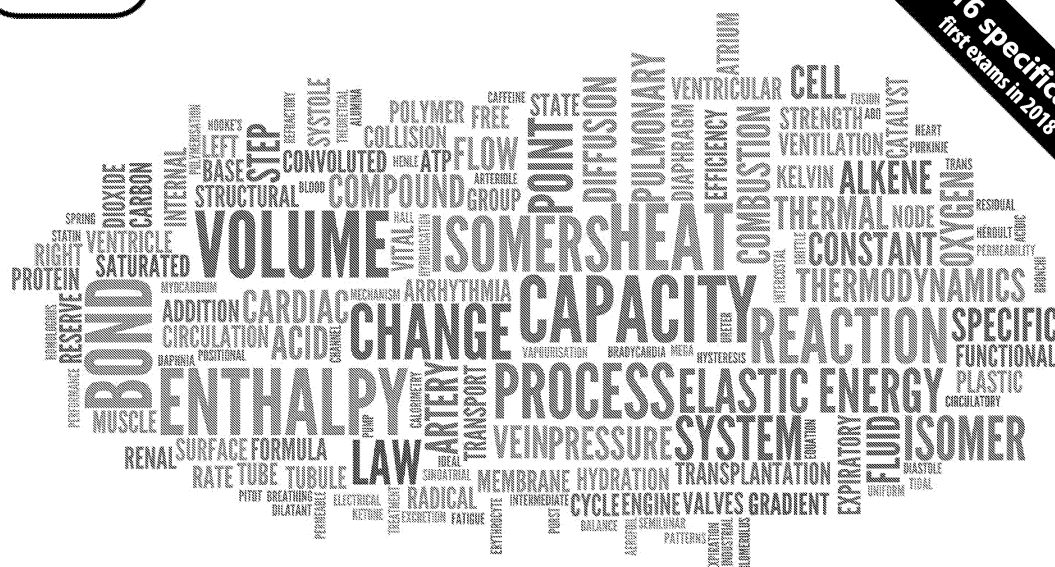


2016 specification
first exams in 2018



Technical Terminology Activity Pack

for BTEC National Applied Science: Unit 5

**CL3/
8441**

**POD
8441**

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Teacher's Introduction

Overview

This resource has been produced to support teaching and learning of the **BTEC National Applied Science** specification **Unit 5**. The learning content is covered by the following sets of keywords with matching descriptions:

- *Anatomy of the Heart*
- *Blood*
- *The Cardiac Cycle*
- *Anatomy of Gas Exchange*
- *Measuring Lung Capacity and Tidal Volume*
- *The Urinary System*
- *Cell Transport*
- *Chemical Properties and Uses of Substances*
- *Organic Compounds, Structures and Nomenclature*
- *Isomerism and Bonding*
- *Reactions of Organic Compounds*
- *Energy Changes in Industry*
- *Basics of Thermodynamics*
- *Systems and Energy*
- *Engines and Changes of State*
- *Deformation and Materials*
- *Fluids in Motion*

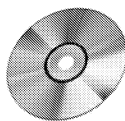
For each set, there are a number of different keyword activities on CD designed to give you a range of different options for classroom, homework and revision. This variety enables you to take a different approach to different topics – such as using the Crosswords as homework for one topic, and the Match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

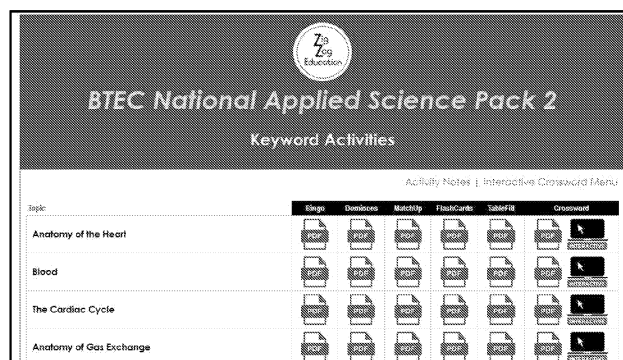
1. Access All Menu



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

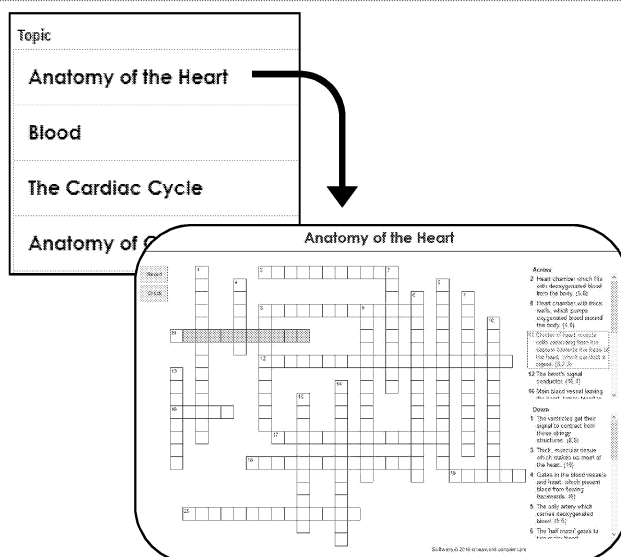
This menu, which can be accessed via the *Access All* Menu is included to allow learner access to just the interactive crosswords (without the answers).

Free Updates!

Register your email address to receive any future free updates* made to this resource or other 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 to ease 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 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

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, 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

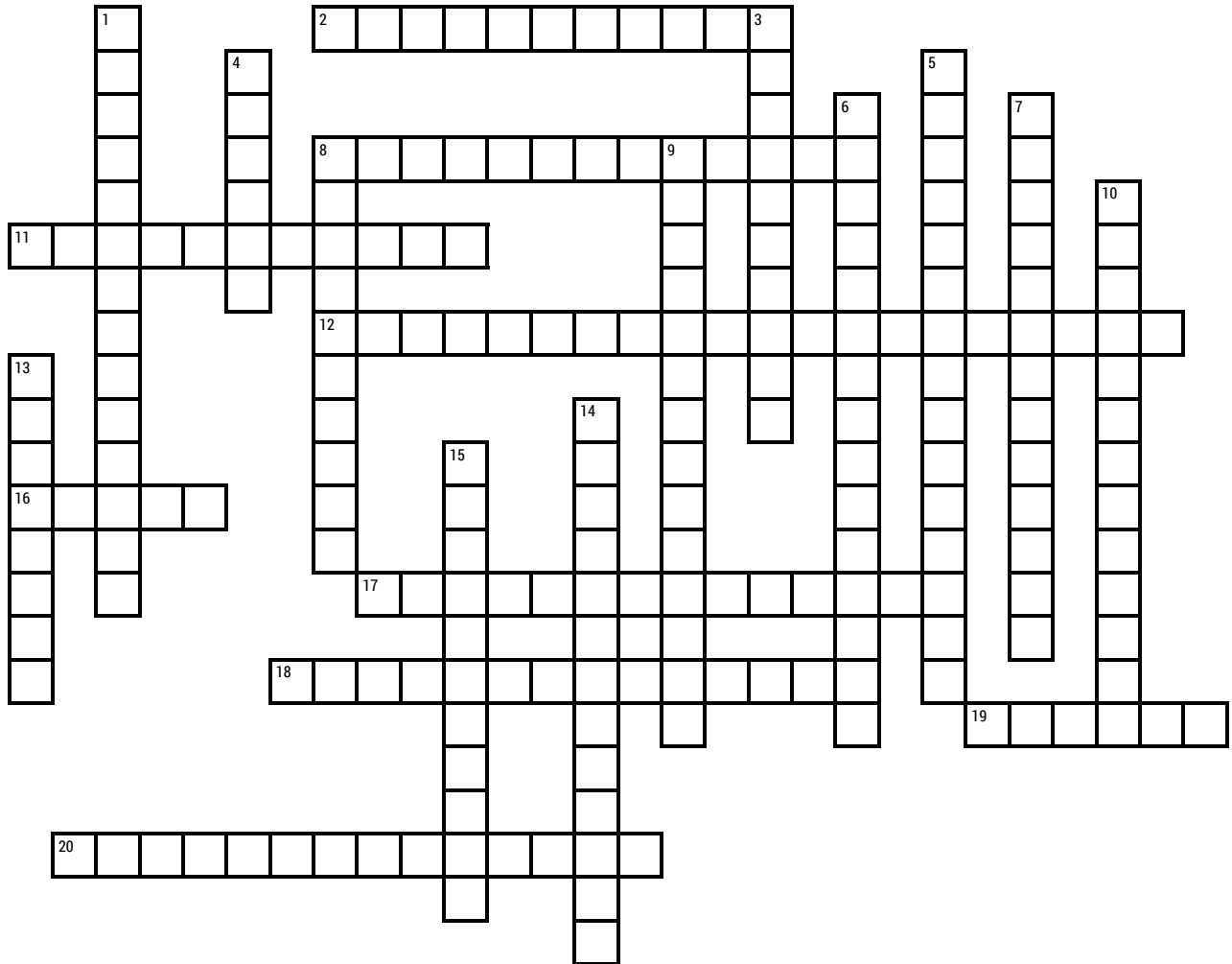
Selected Activities and Completed Glossary Page

This sample shows one example of several activities.

The whole resource contains approximately 120 activities –
6 or 7 activities for each of the 17 topics.

The resource covers 345 key terms.

Anatomy of the Heart



Across

- 2** Heart chamber which fills with deoxygenated blood from the body. (5,6)
- 8** Heart chamber with thick walls, which pumps oxygenated blood around the body. (4,9)
- 11** Cluster of heart muscle cells extending from the septum towards the base of the heart, which conduct a signal. (6,2,3)
- 12** The heart's signal conductor. (16,4)
- 16** Main blood vessel leaving the heart, taking blood to the body. (5)
- 17** Three part 'gate' in the right heart. (9,5)
- 18** Also called the pacemaker; group of cells that control heart rate. (10,4)
- 19** A thick insulating layer which separates the upper and lower heart chambers. (6)
- 20** Type of muscle in which the electrical signal originates in muscle cells. (8,6)

Down

- 1** The ventricles get their signal to contract from these stringy structures. (8,6)
- 3** Thick, muscular tissue which makes up most of the heart. (10)
- 4** Gates in the blood vessels and heart, which prevent blood from flowing backwards. (6)
- 5** The only artery which carries deoxygenated blood. (9,6)
- 6** The 'half moon' gates to two major blood vessels. (9,6)
- 7** Blood vessel that moves oxygenated blood from the lungs to the heart. (9,4)
- 8** Heart chamber which receives oxygenated blood from the lungs. (4,6)
- 9** Heart chamber which contracts to move deoxygenated blood towards the lungs. (5,9)
- 10** Amount of blood pumped by the heart every minute. (7,6)
- 13** Blood vessel through which deoxygenated blood is returned from the body to the heart. (4,4)
- 14** Two part 'gate' in the left heart. (8,5)
- 15** Thin outer layer of the heart made of connective tissue. (11)

Anatomy of the Heart *(Table Fill)*

Heart chamber which receives oxygenated blood from the lungs.	
Heart chamber which fills with deoxygenated blood from the body.	
Heart chamber with thick walls, which pumps oxygenated blood around the body.	
Heart chamber which contracts to move deoxygenated blood towards the lungs.	
A thick insulating layer which separates the upper and lower heart chambers.	
Gates in the blood vessels and heart, which prevent blood from flowing backwards.	
Valves which open to allow blood from the heart into blood vessels, and close to avoid backflow.	
Valve which separates the upper and lower chambers of the right heart.	
Valve which separates the upper and lower chambers of the left heart.	
Blood vessel through which deoxygenated blood is returned from the body to the heart.	
Blood vessel that moves oxygenated blood from the lungs to the heart.	
Blood vessel leaving the heart that takes deoxygenated blood to the lungs.	
Main blood vessel leaving the heart, taking blood to the body.	
Type of muscle in which the electrical signal originates in muscle cells.	
Also called the pacemaker; group of cells that control heart rate.	
Group of cells close to the middle of the heart that conduct and pass on an impulse.	
Fibres spreading from bundle of His that carry an electrical signal through the walls of the ventricles.	
Cluster of heart muscle cells extending from the septum towards the base of the heart, which conduct a signal.	
Amount of blood pumped by the heart every minute.	
Thin outer layer of the heart made of connective tissue.	
Thick, muscular tissue which makes up most of the heart.	

Anatomy of the Heart *(Match Up)*

1	A thick insulating layer which separates the upper and lower heart chambers.
2	Also called the pacemaker; group of cells that control heart rate.
3	Amount of blood pumped by the heart every minute.
4	Blood vessel leaving the heart that takes deoxygenated blood to the lungs.
5	Blood vessel that moves oxygenated blood from the lungs to the heart.
6	Blood vessel through which deoxygenated blood is returned from the body to the heart.
7	Cluster of heart muscle cells extending from the septum towards the base of the heart, which conduct a signal.
8	Fibres spreading from bundle of His that carry an electrical signal through the walls of the ventricles.
9	Gates in the blood vessels and heart, which prevent blood from flowing backwards.
10	Group of cells close to the middle of the heart that conduct and pass on an impulse.
11	Heart chamber which contracts to move deoxygenated blood towards the lungs.
12	Heart chamber which fills with deoxygenated blood from the body.
13	Heart chamber which receives oxygenated blood from the lungs.
14	Heart chamber with thick walls, which pumps oxygenated blood around the body.
15	Main blood vessel leaving the heart, taking blood to the body.
16	Thick, muscular tissue which makes up most of the heart.
17	Thin outer layer of the heart made of connective tissue.
18	Type of muscle in which the electrical signal originates in muscle cells.
19	Valve which separates the upper and lower chambers of the left heart.
20	Valve which separates the upper and lower chambers of the right heart.
21	Valves which open to allow blood from the heart into blood vessels, and close to avoid backflow.

<i>Left atrium</i>	
<i>Right atrium</i>	
<i>Left ventricle</i>	
<i>Right ventricle</i>	
<i>Septum</i>	
<i>Valves</i>	
<i>Semilunar</i>	
<i>Tricuspid</i>	
<i>Bicuspid</i>	
<i>Vena cava</i>	
<i>Pulmonary vein</i>	
<i>Pulmonary artery</i>	
<i>Aorta</i>	
<i>Myogenic muscle</i>	
<i>Sinoatrial node</i>	
<i>Atrioventricular node</i>	
<i>Purkinje fibres</i>	
<i>Bundle of His</i>	
<i>Cardiac output</i>	
<i>Pericardium</i>	
<i>Myocardium</i>	

Anatomy of the Heart

