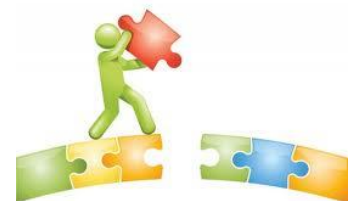




# BRIDGING THE GAP

## BIOLOGY



Course Title	Examination Board & Web Address
A-Level Biology	AQA ( <a href="https://www.aqa.org.uk/subjects/science/as-and-a-level/biology-7401-7402">https://www.aqa.org.uk/subjects/science/as-and-a-level/biology-7401-7402</a> )

### Units/Topics Studied:

Biological molecules, cells (including cell structure, transport across membranes and the immune system), organisms' exchange with their environment , genetic information, variation and relationships between organisms, energy transfers in and between organisms, response of organisms to changes in their internal and external environment , genetics, populations, evolution and ecosystems and control of gene expression.

### Bridging Tasks

#### Part One:

Find out the answers to the following questions

1. Describe 3 differences between prokaryotic and eukaryotic cells.
2. What happens in the endoplasmic reticulum of a cell?
3. Make a drawing to show the general structure of an amino acid. Label the groups.
4. List the steps in a test for a reducing sugar.
5. Name three monosaccharides and three disaccharides.
6. Describe what happens in a condensation reaction and what happens in a hydrolysis reaction.
7. Why do white blood cells have many lysosomes?
8. How does a vaccine work?
9. Give 3 differences between arteries and veins.
10. Describe, briefly, what Watson and Crick discovered about DNA.

Useful websites:

<http://www.s-cool.co.uk/a-level/biology>

<http://www.biologyguide.net/>

<https://www.khanacademy.org/>

#### Part Two:

Choose **ONE** of the following tasks to complete

<p style="text-align: center;"><b>Model Cell</b></p> <p>Produce a 3-Dimensional model of the ultrastructure of an animal cell, using materials that you can find at home. The models should be labelled with all the major parts and include a description of their function. Cellular structures to be included: nucleus, nucleolus, nuclear envelope, rough and smooth endoplasmic reticulum (ER), Golgi body, ribosomes, mitochondria, lysosomes, plasma (cell surface) membrane, microvilli</p>	<p style="text-align: center;"><b>Interactive Poster</b></p> <p>Produce an A3 Size poster explaining enzyme structure and function, including the lock and key, and induced fit hypothesis. Give examples of enzymes and where they are found e.g. amylase, maltase, lactase, catalase.</p> <p>Make you poster interactive, with questions, answers, hidden information etc.</p>
<p style="text-align: center;"><b>Biology in the News</b></p> <p>Research recent news articles and select one that is based around Biology, e.g. the development of a new drug, discovery of a new species, outbreak of a disease, developments in gene technology (e.g. GM foods, cloning, gene therapy).</p> <p>Summarise the news article in your own words. Explain why you chose this article, how important the story is to humans and your opinions of future implications.</p>	<p style="text-align: center;"><b>Exchange and Transport Systems</b></p> <p>How does a grasshopper exchange gases without having lungs? Research the mechanisms a grasshopper would use to ensure sufficient oxygen supplies to all of its cells, and efficient removal of carbon dioxide. Include a diagram in your research and an explanation including all the key terminology.</p>

The two parts will be graded A-E. In part one we will be looking for the correct answers. In part two we will be looking for evidence of research, scientific understanding and the skill of communicating scientific ideas with others. Good Luck!