

Biology Transition Tasks

We are really excited to have you studying Biology A-level with us. To help with a smooth transition from GCSE science to A-level Biology, please ensure that you complete the following bridging tasks.

Subject Content for this course can be found here...

<https://www.ocr.org.uk/qualifications/as-and-a-level/biology-a-h020-h420-from-2015/specification-at-a-glance/>

Task 1 – Cell structure

Find an electron micrograph of the cell. Annotate the image to show key features of the cell organelles and their function.

Task 2 – Biological molecules: proteins

Watch the following clip on biological molecules: <http://www.viewpure.com/H8WJ2KENIK0?start=0&end=0> (Biological Molecules-You are what you eat: Crash course biology #3). Find out about globular and fibrous proteins. Once you have made notes on these, compare haemoglobin (a conjugated globular protein) with collagen (a fibrous protein).

Task 3 – Mathematical skills – cardiac output

Heart rate can be used to calculate cardiac output - provided that you have a value for the individual's stroke volume - using the equation: cardiac output = heart rate x stroke volume

a) Define the terms 'cardiac output' and 'stroke volume' (you may need to use the Internet or other research to help you).

b) Rearrange the above equation so that stroke volume is the subject of the equation. Use your rearranged equation to calculate the athlete's stroke volume after training, using the data below:

The table shows the cardiac output and resting heart rate of an athlete before and after completing a training programme.

	Before training	After training
Cardiac output / cm ³	5000	5000
Resting heart rate / beats per minute	70	55

Task 4 - The heart

Watch the following clip about the heart. <https://ed.ted.com/on/GVvfmO2r> (Ted-Ed: ECG:The basics of ECG). Define the following heart issues:

- Tachycardia
- Bradycardia
- Fibrillation
- Ectopic heartbeat.

Task 5 – Wider reading

- Read at least one copy of New Scientist over the summer holidays. Select one biology-related article and summarise the content for your peers. This should be at least 500-750 words long and you may do additional research on the topic in order to improve your understanding and the written content you produce.



Sixth Form Bridging Work