

Preparation for A level Biology at S6C

Welcome to biology at S6C. As one of the most popular subjects in the STEM faculty we aim to inspire curiosity in the world of biology. Our Summer work is designed to give you a taste of the biology course and of the independent study skills we will be helping you to develop over the next 2 years. Our learning journey starts in topic 1 of the course which is about the human heart, circulatory systems, heart disease and the associated risks that contribute to heart disease. This not only provides us with an opportunity to study the heart's structure but consider wider issues such as our own physical wellbeing.

Topic 1 Lifestyle, Health and Risk

During your time at S6C you will be asked to pre-learn information and your knowledge of this information will be assessed. Your first pre-learning task will be to:

Task 1 The Structure of the Heart

Find a diagram of the heart and practice labelling all the features. You should be able to identify the following features: left ventricle, right ventricle, left atrium, right atrium, vena cava, aorta, pulmonary artery, pulmonary vein, the semilunar valves (x2) and the atrioventricular valves (x2) sometimes called the bicuspid valve and tricuspid valve. Learn the position of each on a diagram and find out what role in the heart it performs.

Your next job is to learn the order the blood moves through the heart in the cardiac cycle e.g. if it enters the left atria where does it go to next until it reaches the left atria once again.

Some of these resources may help you

<https://alevelbiology.co.uk/notes/structure-of-the-heart/>

<https://alevelbiologystudent.weebly.com/85-the-heart.html>

<https://s-cool.co.uk/a-level/biology/transport/revise-it/the-heart>

Useful video

<https://www.youtube.com/watch?v=X9ZZ6tcxArl>

Task 2 The Cardiac Cycle

Using the links above research the cardiac cycle and discover what is meant by atrial systole, ventricular systole and diastole. The key to the cardiac cycle is to know what the semilunar valves, atrioventricular valves and the cardiac muscle are doing at each stage of the cardiac cycle.

Make a revision poster with a labelled diagram of the cardiac cycle on it and include what the semilunar valves, atrioventricular valves and the cardiac muscle are doing at each stage of the cardiac cycle.

Test your knowledge!

Follow the link below to the structure of the heart quiz. It is quick and easy to do. Try to learn the structure of the heart first then test your knowledge without using your notes. Hint please add all answers if you use capital letters I think it will mark it wrong.

[The Structure of the Heart Quiz](#)

Additional Reading on Heart Disease

Read	Watch
Cardiac rehabilitation to support people suffering from heart disease https://www.bbc.co.uk/programmes/articles/29wCtzCfJKWgKdrnM0rZQW6/how-can-you-improve-your-health-if-you-re-living-with-heart-disease	Why study the heart and heart disease? https://www.ted.com/talks/krishna_sudhir_what_happens_during_a_heart_attack
An overview of the risk factors for heart disease	The risk of smoking and heart disease https://www.youtube.com/watch?v=0zr

<https://www.nhsinform.scot/illnesses-and-conditions/heart-and-blood-vessels/reducing-the-risks/reducing-the-risks-of-developing-heart-disease#risk-factors-and-risk-score>

[rqHlrTHI&t=2s](#)

Additional things to watch this summer

Later in the course we will look at biodiversity and climate change. Here are some videos to watch on these topics

<https://www.bbc.co.uk/programmes/m00049b1>

<https://www.bbc.co.uk/iplayer/episodes/m000mn4n/extinction-the-facts>

Any of the David Attenborough series are good to watch as they develop our understanding of the natural world.

<https://www.bbc.co.uk/iplayer/group/p03szck8>

Things to do!

It might be tricky to get out and about this summer but ideas for biology in the wider world. This is not a complete list of ideas for visits that you and your family might enjoy but a few ideas to get you started.

Nearly free and Local

Riverbourne Community Farm

Explore the farm with younger siblings and walk one of the nature trails to look at local wildlife

<https://www.riverbournecommunityfarm.org.uk/trails>

Take a trip to the New Forest

Enjoy a walk and a picnic in the forest and look at the animals from the ponies to the bugs in the leaf litter. Many of the car parks in the forest have to be paid for but the walk is for free!

<https://www.newforestnpa.gov.uk/visiting/visitor-information/where-to-get-information/visitor-information-centres/>

The New Forest Reptile Centre

<https://www.thenewforest.co.uk/things-to-do/new-forest-reptile-centre-p780301>

Bolderwood deer sanctuary in the New Forest

www.thenewforest.co.uk/things-to-do/bolderwood-deer-sanctuary-p789391

Within an hour of Salisbury

Visit a Wiltshire Wildlife Trust Nature Reserve

Wiltshire wildlife trust has a range of reserves to visit for walks and which offer activities which are usually quite low cost

<https://www.wiltshirewildlife.org/Pages/Category/nature-reserves?Take=24>

Visit a Hampshire Wildlife Trust Nature Reserve

Hampshire Wildlife Trust reserves range from marshes to forests to lakes. A lovely way to enjoy a variety of British wildlife. Most reserves are free to visit but you may have to pay for parking.

<https://www.hiwwt.org.uk/nature-reserves>

Take a trip to the zoo and look at how zoos are helping to conserve endangered species. Both Marwell and Longleat are a day trip from Salisbury and can be enjoyed by the family. If the distance is a little far we are hoping to restart our annual college trip to Marwell this year.

<https://www.marwell.org.uk/zoo/>

<https://www.longleat.co.uk/>

Further Afield

In the current climate you may decide you do not wish to go to London but if you do it is worth a visit to some of the big museums. The Natural History Museum and the Science Museum are free to enter although special exhibitions may have a cost. You will need to book tickets online. There are often offers on train tickets travelling off peak and booked in advance.

<https://www.nhm.ac.uk/>

<https://www.sciencemuseum.org.uk/home>