

## A guide to help you get ready for **A-level Biology**

### What is Biology?

This pack contains a programme of activities and resources to prepare you to start an A-level in Biology in September. It is aimed to be used now and throughout the remainder of the summer term and over the summer holidays to ensure you are ready to start your course in September. The suggested activities are completely voluntary and do not form part of your summer project submission. However, they are designed to help you start to engage with and enjoy the world of biology! It's a fantastic subject to study, and we hope you enjoy your learning.



### Read Biology Based Resources

These resources are great for gaining a better understanding of biology in the modern world.



Celebrating the diversity of life in our **world**.  
1500+ people worked on this project worldwide.  
41 countries visited, 92 shoots, 1794 filming days!  
499 days spent travelling by crew, 2260.5 hours of footage shot.  
1 baboon room raid!  
Celebrating the diversity of life in our world.

<https://www.bbcearth.com/sevenworldsoneplanet>

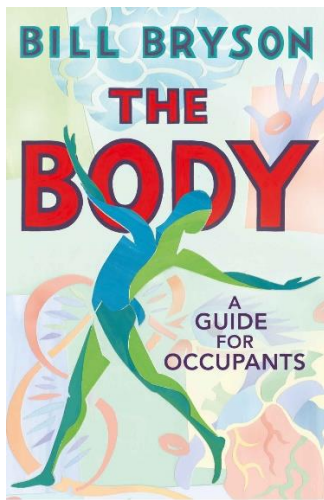


**Educational documentaries**

BBC - Our Secret Universe The  
Hidden Life of the Cell

This amazing video shows animation that model the amazing structures and processes occurring within each and every cell in your body. It also explains the evolution of cells and how our cells interact with viruses.

<https://www.dailymotion.com/video/x6z0pzg>



'We spend our whole lives in one body and yet most of us have practically no idea how it works and what goes on inside it. The idea of the book is simply to try to understand the extraordinary contraption that is us.' Bill Bryson sets off to explore the human body, how it functions and its remarkable ability to heal itself. Bill Bryson sets off to explore the human body, how it functions and its remarkable ability to heal itself. Full of extraordinary facts and astonishing stories The Body: A Guide for Occupants is a brilliant, often very funny attempt to understand the miracle of our physical and neurological make up. A wonderful successor to A Short History of Nearly Everything, this new book is an instant classic. It will have you marvelling at the form you occupy, and celebrating the genius of your existence, time and time again. 'What I learned is that we are infinitely more complex and wondrous, and often more mysterious, than I had ever suspected. There really is no story more amazing than the story of us.' Bill Bryson

## TED Talks

### 1. How can we control the antibiotic resistance problem?

In this short 6-minute video Gerry Wright explains what needs to be done to overcome the ever increasing problem of bacterial resistance to current antibiotics.

[https://www.ted.com/talks/gerry\\_wright\\_how\\_can\\_we\\_solve\\_the\\_antibiotic\\_resistance\\_crisis](https://www.ted.com/talks/gerry_wright_how_can_we_solve_the_antibiotic_resistance_crisis)

### 2. Animations of unseeable biology

We have no ways to directly observe molecules and what they do -- but Drew Berry wants to change that. He demos his scientifically accurate (and entertaining!) animations that help researchers see unseeable processes within our own cells.

[https://www.ted.com/talks/drew\\_berry\\_animations\\_of\\_unseeable\\_biology](https://www.ted.com/talks/drew_berry_animations_of_unseeable_biology)

### 3. Why our bodies age

Human bodies aren't built for extreme aging: our capacity is set at about 90 years. But what does aging really mean, and how does it counteract the body's efforts to stay alive? Monica Menesini details the nine physiological traits that play a central role in aging.

[https://www.ted.com/talks/monica\\_menesini\\_why\\_do\\_our\\_bodies\\_age](https://www.ted.com/talks/monica_menesini_why_do_our_bodies_age)

### 4. What are stem cells

Is personalized medicine for individual bodies in our future? Possibly -- with the use of stem cells, undifferentiated cells with the power to become any tissue in our bodies. Craig A. Kohn describes the role of these incredible, transforming cells and how scientists are harnessing their medical potential.

<https://www.dailymotion.com/video/x5c3eng>

### 5. How we wrecked the ocean

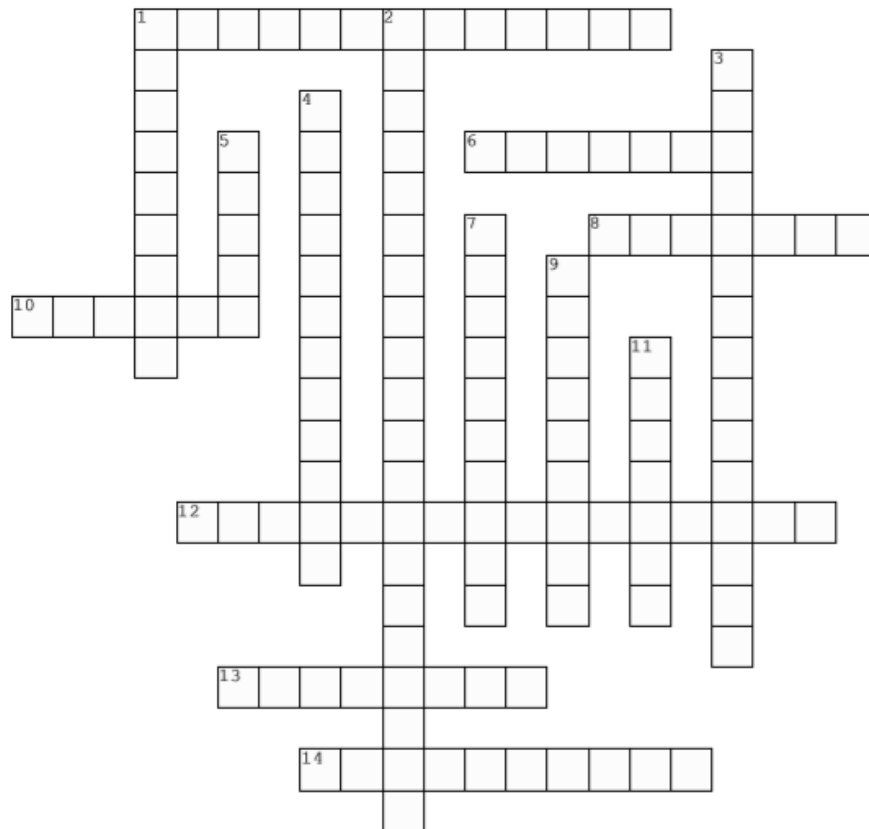
In this bracing talk, coral reef ecologist Jeremy Jackson lays out the shocking state of the ocean today: overfished, overheated, polluted, with indicators that things will get much worse. Astonishing photos and stats make the case.

[https://www.ted.com/talks/jeremy\\_jackson\\_how\\_we\\_wrecked\\_the\\_ocean](https://www.ted.com/talks/jeremy_jackson_how_we_wrecked_the_ocean)

## Use of Key Terms and Scientific Language

It is important in A-level Biology to use the correct scientific words when describing structures, processes and experimental techniques.

Have a practice with some key names, terms and words that you will use in your first topic at A-level, cell structure and function. Complete this crossword (answers are over the page but don't peek!) When you have finished why not get ahead of the game and start making a glossary.



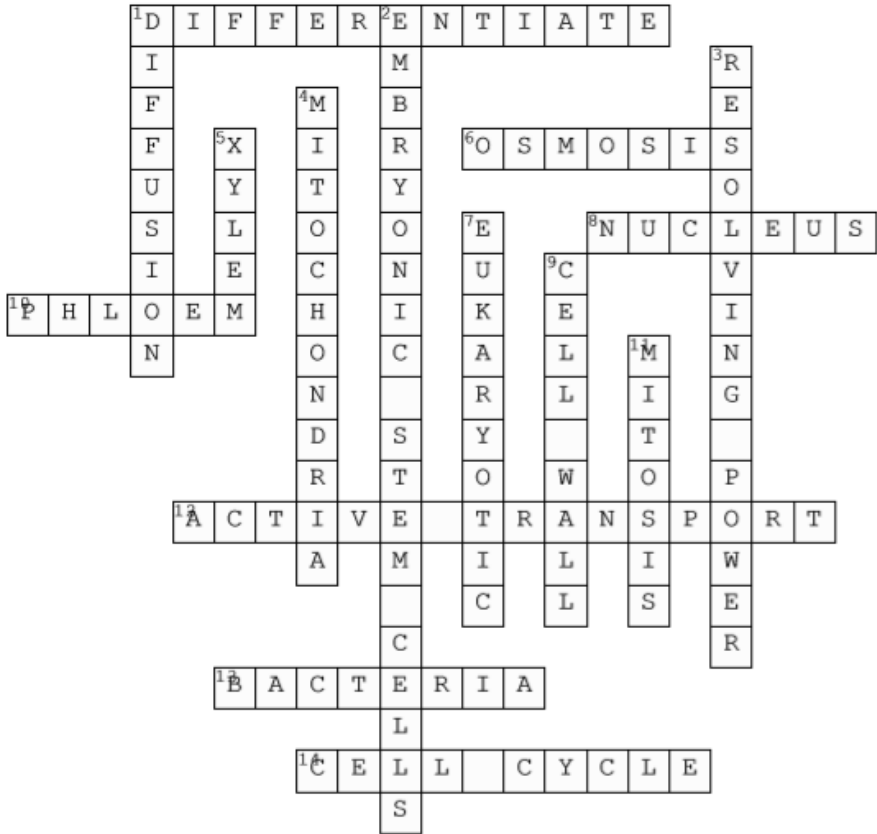
### Across:

1. Conditions or habits that would increase your chance of CHD
3. Type of blood carried by arteries except for the pulmonary arteries.
5. A condition that increases your chance of CHD
7. Location where pain or tightness may be felt during a heart attack.
9. Carry blood away from the heart
11. A habit that increases the likelihood of CHD
13. Blood that is pumped by the right ventricle to the lungs.
15. Pain produced by reduced flow of blood to the heart muscles.
17. Mass formed by platelets and fibrin to stop bleeding.
19. Systolic and diastolic are types of this.

### Down:

2. Disease in which plaque builds up inside arteries.
4. Otherwise known as a myocardial infarction.
6. Can build up in the artery and restrict blood flow.
8. Supplies the heart with oxygen and nutrients.
10. Surgical procedure used to treat CHD.
12. Fatty deposits that build up in the arteries.
14. Reduces the chance of CHD.
16. Increases the chance of CHD.
18. Medical procedure that shows the blood flow through the coronary arteries.

Answers



## Online Learning Courses

A Massive Open Online Course (MOOC) is an interactive step-by-step course aimed at reaching an unlimited number of participants worldwide to create a community of lifelong learners. There are many different MOOC providers that cover a huge variety of different subject and topic interests.

Typically a MOOC will involve 2-3 hours study per week for 6 weeks or so. MOOCs are free of charge. All required course materials will be provided for you online, which is also 100% free! Each course is open to anyone with internet access across the world and all you need is your wonderful brain!

Here are a couple that you may wish to try:

### **Human Anatomy**

<https://www.edx.org/course/human-anatomy>

### **Vaccines: From Smallpox to technologies of the future**

<https://www.edx.org/course/vaccines-from-smallpox-to-technologies-of-future>

Follow the course learning instructions & complete all tasks, keep a record of what you do and save all work as evidence of your learning.

**Good Luck!**