

Transition Pack

for A Level

Biology



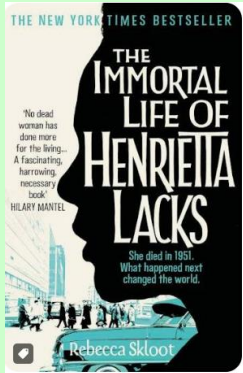
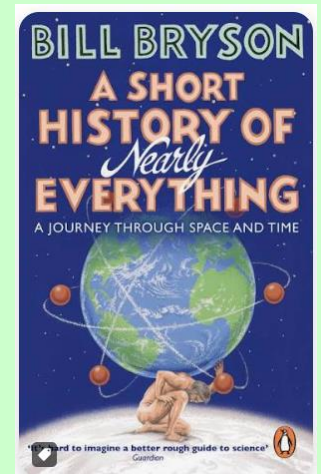
This pack is aimed to be used after you complete your GCSE throughout the remainder of the summer term and over the summer holidays to ensure you are ready to start your course in September.

It includes what we call 'super curricular activities' which allow you to deepen your academic engagement, demonstrate intellectual curiosity and independent learning.

Book Recommendations

A Short History of Nearly Everything

A whistle-stop tour through many aspects of history from the Big Bang to now. This is a really accessible read that will re-familiarise you with common concepts and introduce you to some of the more colourful characters from the history of Science.

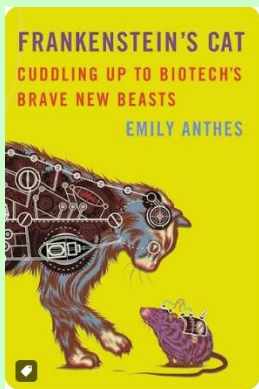
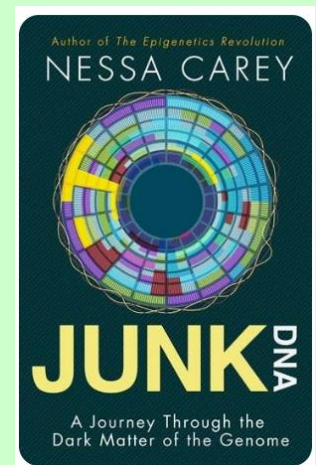


The Immortal Life of Henrietta Lacks by Rebecca Skloot

Read about the story of Henrietta's immortal cells that are still used today for scientific research and have helped produce vaccines (like Polio and Covid-19), map the human genome and test cancer treatments.

Junk DNA by Nessa Carey

Our DNA is so much more complex than you probably realise. This book will really deepen your understanding of all the work you will do on genetics.

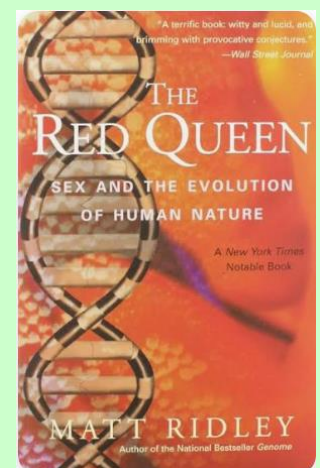


Frankenstein's Cat by Emily Anthes

Discover how glow in the dark fish are made and more great biotechnology breakthroughs

The Red Queen by Matt Ridley

It's all about sex. Or sexual selection at least. This book will help your understanding of evolution, and particularly the fascinating role of sex in evolution.

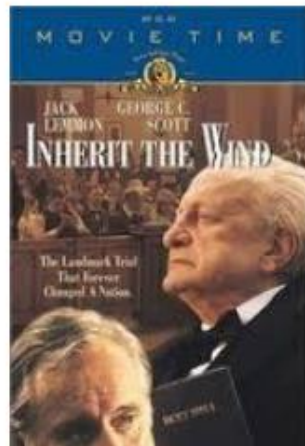


Movie Recommendations



Inherit The Wind (1960)

Great if you can find it. Based on a real life trial of a teacher accused of the crime of teaching Darwinian evolution in school in America. Does the debate rumble on today?



Gorillas in the Mist (1988)

An absolute classic that retells the true story of the life and work of Dian Fossey and her work studying and protecting mountain gorillas from poachers and habitat loss. A tear jerker.

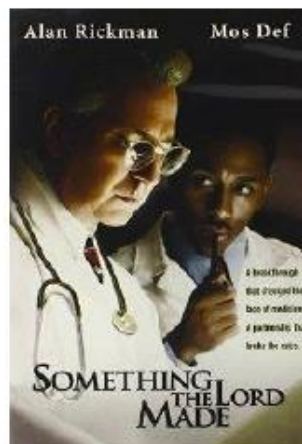
Andromeda Strain (1971)

Science fiction by the great thriller writer Michael Crichton (most famous for writing Jurassic Park). Humans begin dying when an alien microbe arrives on Earth.



Lorenzo's Oil (1992)

Based on a true story. A young child suffers from an autoimmune disease. The parents research and challenge doctors to develop a new cure for his disease.



Something the Lord Made (2004)

Professor Snape (the late great Alan Rickman) in a very different role. The film tells the story of the scientists at the cutting edge of early heart surgery as well as issues surrounding racism at the time.

There are some great TV series available too which you might want to check out: Blue Planet, Planet Earth, Icarus, Blackfish, The Ascent of Man, Catastrophe, Frozen Planet, Life Story, The Hunt and Monsoon

Ted Ed Talk Recommendations

<https://www.youtube.com/watch?v=1N39Z00DeME>

A New Superweapon in the Fight Against Cancer

Cancer is a very clever, adaptable disease. To defeat it, says medical researcher and educator Paula Hammond, we need a new and powerful mode of attack



<https://www.youtube.com/watch?v=dY7iATJVCso>

Why Bees are Disappearing

Honeybees have thrived for 50 million years, each colony of 40 to 50,000 individuals coordinated in amazing harmony. So why did colonies start dying en-masse?



<https://www.youtube.com/watch?v=RKmxL8VYy0M>

What Doctors Don't Know About the Drugs They Prescribe

When a new drug gets tested, the results of the trials should be published for the rest of the medical world – except much of the time, negative or inconclusive findings go unreported, leaving doctors and researchers in the dark.



<https://www.youtube.com/watch?v=7SfRgg9botl>

Growing New Organs

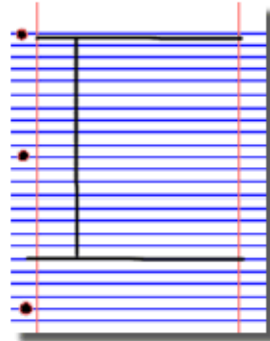
Anthony Atalla's state-of-the-art lab grows human organs – from muscles to blood vessels to bladders, and more



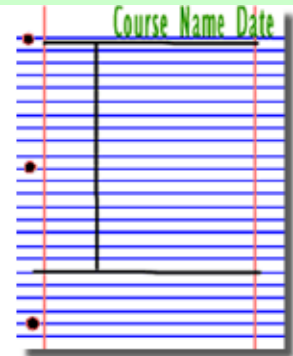
Research Activities

Research, reading and note making are essential skills for A Level Biology study. You could produce 'Cornell Notes' to summarise your reading for the research activities below:

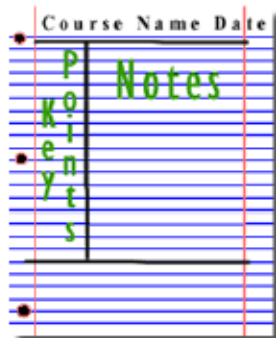
1. Divide your page into three sections like this



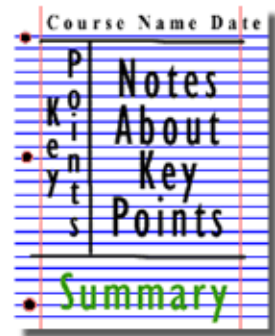
2. Write the name, date and topic at the top of the page



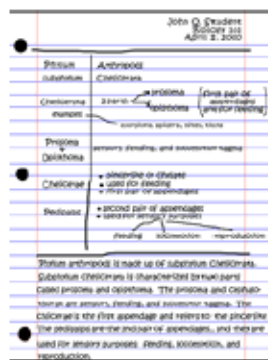
3. Use the large box to make notes. Leave a space between separate ideas. Abbreviate where possible.



4. Review and identify the key points in the left hand box



5. Write a summary of the main ideas in the bottom space



Topic 1: The Cell

https://www.buckinghamschool.org/_site/data/files/files/Biology%20The%20Cell%20Issue.pdf

The cell is the building block of life. Each of us starts from a single cell, a zygote, and grows into a complex organism made of trillions of cells. In this issue, we explore what we know –and what we don't yet know –about the cells that are the basis of us all and how they reproduce, grow, move, communicate and die.

Topic 2: The Immune System

<https://www.stem.org.uk/resources/library/resource/35694/immune-system>

The immune system is what keeps us healthy in spite of the many organisms and substances that can do us harm. In this issue, we explore how our bodies are designed to prevent potentially harmful objects from getting inside and what happens when bacteria, viruses, fungi or other foreign organisms or substances breach these barriers.

Topic 3: Exercise, Energy and Movement

https://assets.ctfassets.net/pc40tpn1u6ef/file-20066/ac42e573f981fb4fd11211da7e9fd574/15913-Big_Picture_15_Exercise_Energy_and_Movement.pdf

All living things move. Whether it's a plant growing towards the sun, bacteria swimming away from a toxin or you walking home, anything alive must move to survive. For humans though, movement is more than just survival –we move for fun, to compete and to be healthy. In this issue we look at the biological systems that keep us moving and consider some of the psychological, social and ethical aspects of exercise and sport.

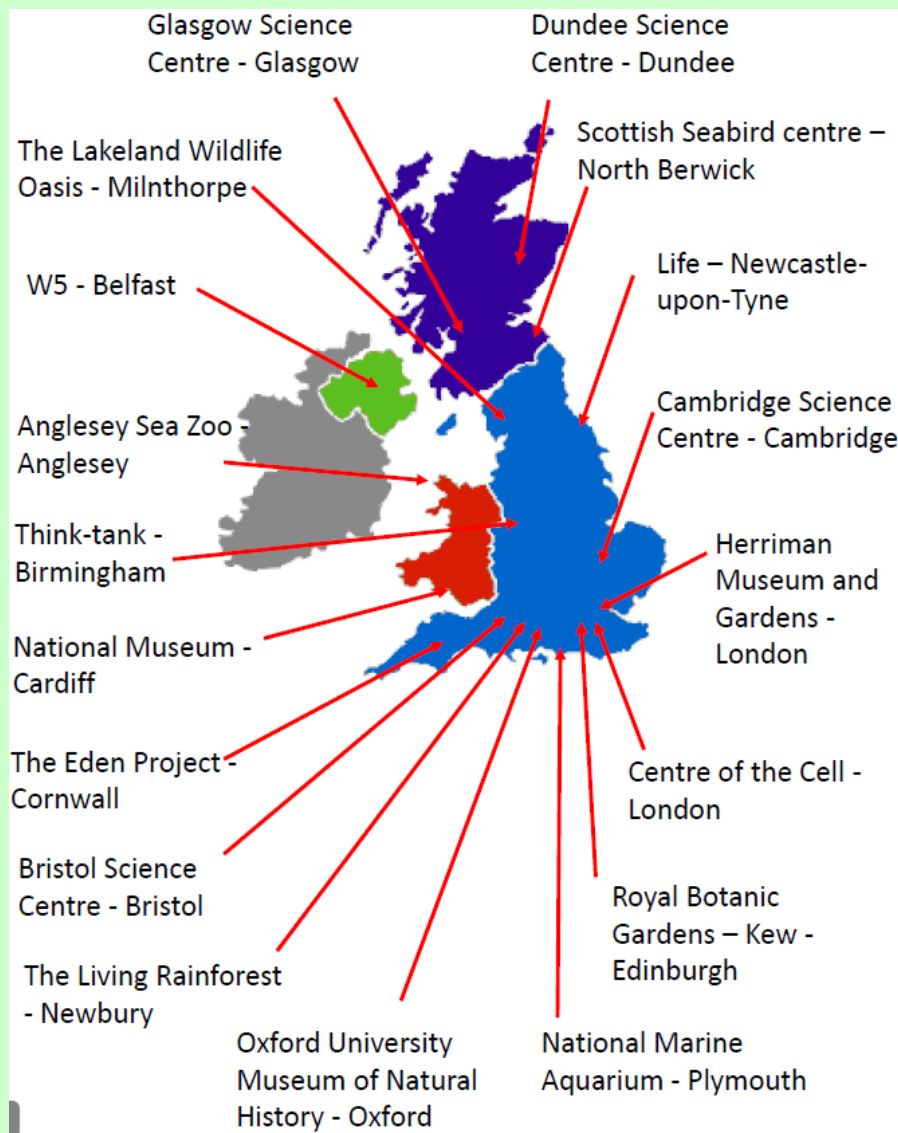
Topic 4: Health and Climate Change

<https://www.stem.org.uk/resources/library/resource/26573/health-and-climate-change>

The Earth's climate is changing. In fact, it has always been changing. What is different now is the speed of change and the main cause of change –human activities. This issue asks: What are the biggest threats to human health? Who will suffer as the climate changes? What can be done to minimise harm? And how do we cope with uncertainty?

Ideas for Day Trips

If you are on holiday in the UK, or on a staycation at home, why not plan a day trip to one of these?



Remember there are also lots of zoos, wildlife and safari parks across the country, here are some you may not have heard of or considered:

Colchester Zoo, Cotswold Wildlife Park, Banham Zoo (Norfolk), Tropical Birdland (Leicestershire), Yorkshire Wildlife Park, Peak Wildlife Park, International Centre for Birds of Prey (York), Blackpool Zoo, Beale Park (Reading)

There are also hundreds of nature reserves (some of which are free) located all over the country including:

RSPB sites at Lochwinnoch, Saltholme, Fairburn Ings, Old Moor, Conwy, Minsmere, Rainham Marshes, Pulborough Brooks, Radipole Lake, Newport Wetlands.

Wildlife Trust Reserves and others at Rutland Water, Pensthorpe, Insh Marshes, Attenborough Centre, Inversnaid, Skomer, Loch Garten, Donna Nook, Chapmans Well, Woodwalton Fen, London Wetland Centre, Martin Down and Woolston Eyes Reserve.

Biology: Things to Do!

There are loads of citizen projects you can take part in either from the comfort of your bedroom, out and about, or when on holiday.



AgeGuess



MOOC

Want to stand above the rest when it comes to UCAS? Now is the time to act.

MOOCs are online courses run by nearly all universities. They are short FREE courses that you take part in. They are usually quite specialist, but aimed at the public, not the genius!

There are lots of websites that help you find a course, such as edX and Future learn.

You can take part in any course, but there are usually start and finish dates. They mostly involve taking part in web chats, watching videos and interactives.



Completing a MOOC will look great on your personal statement and they are dead easy to take part in!

