

## **Studying IB Biology:**

### **Preparation for Year 12**

Thank you for your interest in the subject. You will enjoy IB Biology as it is varied, relatable and interesting, but it is challenging. Nationally students taking GCSE Biology find the subject less hard and do better than most others, including English, Music Drama & Art, French & German, Maths and History or Geography. However at higher level (IB or A-Level), students nationally perform less well in Biology compared to English, Languages and even Chemistry & Physics. So it is beneficial that you take an opportunity to do some preparation in advance. Our most successful students check over their notes each week; come to class with questions arising from independent studies and are aware of which parts confuse them.

Ensure you know the GCSE material. It is important that you fully understand the GCSE material as it underpins each IB topic. We do not have the time to re-teach all of the GCSE course, so we will assume you are coming to class with some understanding of those concepts.

### **What can I do to help transition from GCSE to IB Biology**

As a useful starting point for your studies in September, you should complete the following **three** tasks:

1. Biology involves remembering lots of things. Choose **one** of the following organic molecules and learn how to draw its structure off by heart.
  - a.  $\alpha$  glucose (ring structure)
  - b. Ribose
  - c. A saturated fatty acid
  - d. An amino acid
2. [Maths skills in biology](#). Complete the Maths in biology activity.
3. Background reading: Choose **one source** from the recommended biology reading list *below*. Write a short summary of what you found out (no more than 200 words).

# Biology Reading list

Genome by Matt Ridley

The Incredible Unlikelihood of Being by Alice Roberts.

The Single Helix: Steve Jones

The 'X' in sex: David Bainbridge

Bill Bryson. A Short History of Nearly Everything.

River out of Eden: A Darwinian view of life. Richard Dawkins

In the Shadow of Man. Jane Goodall Her research into Chimpanzee behaviour

The Private life of the Brain. Sue Greenfield

Y: The Descent of men. Professor Steve Jones

Gaia: A new look at life on Earth. James Lovelock. A particularly good one for IB. It links with TOK in topic 5 ecology.

The Common Thread. Stories of Science, politics, ethics and the human genome. John Sulston and Georgina Ferry.

The seven daughters of Eve. Brian Sykes. About mitochondrial DNA and human evolution.

The Double Helix. James Watson (his own story of the discovery of the structure of DNA)

Dr Tatiana's Sex Advice to All Creation. Olivia Judson. The definitive guide to the evolutionary biology of sex.

Elephants on Acid and other Bizarre Experiments. Alex Boese

Does Anything Eat Wasps? New Scientist.

The Origin of Species Charles Darwin. Not the most riveting read but an important book.

The Mould in Dr Florey's coat - discovery & development of penicillin into the first really effective antibiotic.

Virus Hunters - Dispatches - accounts of **cutting-edge medical** research with dramatic stories of survival in some of the most remote places on Earth,

The Immortal Life of Henrietta Lacks - Scientists know her as HeLa. She was a poor black tobacco farmer whose cells—taken without her knowledge in 1951—became one of the most important tools in medicine

The Song of the Cell - Book by Siddhartha Mukherjee

Inferior - The true power of women and the science that shows it.

A life decoded- Craig Venter, who played a key role in one of the greatest scientific achievements of our time – the deciphering of the human genetic code.

This is Going to Hurt - Secret Diaries of a junior Doctor, by Adam Kay