

Summer Work: A Level Biology

In order to succeed at A Level you need to have the right learning behaviours. At Solihull Sixth Form College we use the VESPA Mindset system to help students develop & maintain these behaviours. Your summer work for A Level Biology is designed to prepare you for this.

Task 1: Vision

Write a paragraph introducing yourself and your goals to your A Level biology teacher. Make sure you include:

- Why you want to study A Level Biology
- What biology topics you find the most interesting
- What biology topics you find hard
- How do you learn best
- What you want to be doing in 6 years' time

Task 2: Effort

Biological Molecules

This will be preparation for lessons you will complete in the first half term. You must produce a poster or a set of notes (with diagrams) showing the structure of various biological molecules. Answer the following questions in your poster or notes.

- 1) What is a **polymer** and **monomer**?
- 2) What is a **condensation reaction** and a **hydrolysis reaction**?
- 3) Draw out the structure of the following molecules:
 - a. **Alpha glucose & beta glucose**
 - b. **Triglyceride & phospholipid**
 - c. **Amino acid**
 - d. **DNA & RNA Nucleotides**

Task 3: Systems

Make sure you have all the correct equipment you need for your lessons:

- Black/blue, red and purple pens
- A4 refill pad paper (not in a spiral bound book)
- Scientific calculator (e.g. Casio FX-83GT)
- 30 cm ruler
- Sharp pencil & pencil eraser
- Lever arch file or ring binder folders to keep all of your completed Biology work in. You will be provided with a plastic wallet to use as a 'working folder' to transport your current work to and from college, so can leave your lever arch file / ring binder at home
- A diary (paper or electronic) to keep a record of key dates, independent study tasks and assessments

Task 4: Practice

Extended work on a topic of your choice

Choose any area of Biology that you are particularly interested in. When you have done your research you need to present this in the most **creative** way you can. For example you may wish to do a **model, poster or PowerPoint**. Try and be **as imaginative and creative** as possible but still have the **science**.

- It should be the equivalent to 2 sides of A4 writing (as if you were completing an essay)
- Any A Level textbook or website will help you.

Task 5: Attitude

Over the summer keep yourself up to date with current biological research and read around the subject. Keep a record of what you have read/listened to so you can refer to it in the future e.g. university applications and job interviews.

- Wider Reading:
 - *The Immortal Life of Henrietta Lacks* by Rebecca Skloot
 - *Frankenstein's Cat* by Emily Anthers
 - *How To Make a Zombie* by Frank Swain
 - *The Vital Question: Why is life the way it is?* by Nick Lane
 - *Tamed: Ten Species that Changed our World* by Alice Roberts
 - *Junk DNA: A Journey Through the Dark Matter of the Genome* by Nessa Carey
 - *Life on the Edge: The Coming of Age of Quantum Biology* by Jim Al-Khalili & Johnjoe McFadden
 - *Other Minds: The Octopus and the Evolution of Intelligent Life* by Peter Godfrey-Smith
- Science News:
 - newscientist.com
 - nature.com
 - bbc.co.uk/news/science_and_environment
 - sciencedaily.com
- Radio/Podcasts
 - Inside Science: bbc.co.uk/programmes/b036f7w2
 - Infinite Monkey Cage: bc.co.uk/programmes/b00snr0w
 - Museum of Curiosity: bbc.co.uk/programmes/b00k3wvk
 - The Natural Selection: naturalselectionpodcast.weebly.com
 - Radiolab: wnycstudios.org/shows/radiolab
 - Ted Talks Science and Medicine podcasts.com/tedtalks-science-and-medicine

Make sure you bring your completed tasks to your first Biology lesson in September