St Bernard’s High School
A Level Biology Summer Transition Work

**Dear Future Biologists,**Welcome to A Level Biology at St Bernard’s High School! To help you prepare for the exciting transition from GCSE to A Level, we’ve put together a set of five extended tasks. These are designed to reinforce your existing knowledge, challenge misconceptions, and introduce you to some of the skills and content you’ll encounter at A Level.

Please complete these tasks over the summer and bring them with you in September. Aim to complete all five, but don’t worry if you find parts tricky – just give it your best shot. Enjoy the learning journey!

Task 1: Cells – The Building Blocks of Life

* - Create a labelled diagram of a plant and animal cell.
* - Create a comparison table between prokaryotic and eukaryotic cells (include nucleus, organelles, DNA location, etc).
* - Write a short paragraph on the function of three key organelles and how their structure helps them function.

Task 2: Enzymes – Nature’s Catalysts

* - Describe what enzymes are, and explain the lock and key and induced fit models.
* - Research and design a basic experiment investigating the effect of temperature on enzyme activity (e.g. amylase and starch).
* - Include a prediction, method, and expected results sketch.

Task 3: Classification and Biodiversity – Organising Life

* - Research the 5 Kingdoms and write a profile for each.
* - Write a short essay on: “Why is biodiversity important, and how are humans affecting it?”
* - Optional: Include one example of an endangered species and how conservation helps.

Task 4: DNA – Instructions for Life

* - Make a 3D model of DNA (use string, sweets, paper – be creative!).
* - Write a paragraph explaining base pairing rules (A-T, C-G) and how DNA replicates.
* - Optional extension: Research genetic fingerprinting or one example of genetic engineering (e.g. insulin production).

Task 5: Thinking Like a Scientist – Data&Media

* - Choose a recent science-based news article.
* - Write a summary of the article including: What was studied? What were the key findings? How reliable is the information?
* - Include one data graph or figure sketch if available.
* - Write a short paragraph: “How confident am I in these results and why?