Biology Curriculum Intent

The Biology curriculum aims to capture and extend our students' natural curiosity about scientific principles. We build upon the national curriculum by providing a bespoke scheme of work which is designed to challenge our highly-academic students and provide them with the knowledge to excel at GCSE and beyond. We place a large focus on building the skills that all scientists need, including investigative skills; an awareness of ethics and safety; an analytical mind set and an ability to apply knowledge to unfamiliar contexts. We are driven to make scientists who are inclusive and capable of interdisciplinary collaboration on a global scale. Our curriculum encourages and facilitates further studies or potential careers in the subject, whilst empowering students to have a greater appreciation and awareness of Biology related issues.

By the end of Key Stage 4 our students will know:	By the end of Key Stage 5 our students will know:
1. *The key concepts of Biology including cell structure, enzyme theory, molecule transport and food science.* 2. *How cells specialise and work together as tissues and organs.* 3. *What it means to be healthy and how pathogens are transmitted and combatted by the immune system.* 4. *The process of cell division and the key aspects of inheritance.* 5. *The theory of natural selection and evolution and how this can be manipulated in biotechnology.* 6. *Plant structure and how this relates to functions such as photosynthesis.* 7. *How the body responds to its environment and maintains constant internal conditions.* 8. *The main ideas of ecology to include energy transfers in ecosystems, biodiversity and nutrient cycles.* 9. *How important molecules are exchanged and transported in the body to include the structure and function of the heart and the fundamental process of respiration.* 10. *How to plan, implement, analyse and evaluate biological experiments.*	11. *The structure and function of the cardiovascular system and that specific lifestyle factors can lead to cardiovascular disease.* 12. *The biology behind the causes, symptoms and treatments for cystic fibrosis.* 13. *The structure of different cells and their organelles and how cells divide.* 14. *That biodiversity can be measured, change over time and be used to make a more sustainable world.* 15. *How energy is transferred through ecosystems and how imbalances can lead to global warming.* 16. *How Biology is applied in forensic science.* 17. *About microorganisms and how the human body is able to combat them via natural and medicinal means.* 18. *The influence that Biology has on sport.* 19. *How organisms respond to stimuli and how scientists have discovered this information.* 20. *How to plan, implement, analyse and evaluate biological experiments.*

At WHSG our curriculum intent is ambitious but always inclusive, composed of powerful knowledge and cultural capital, coherent and well-sequenced, and broad only specialising when necessary