# Bellerive FCJ Catholic College

**Department: Biology (SS)** **Year Group: 11**

| Term | Learning Focus | Key Knowledge and Skills | Assessment | Challenge and Enrichment |
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| 1 | B5 Homeostasis and Response | • Students learn that homeostasis is the biological process of maintaining a stable internal environment within an organism, crucial for optimal cell and enzyme function, even when external conditions change.<br>• Students learn that in the human body, it specifically regulates factors like body temperature, blood glucose levels, and water levels. This process involves automatic control systems with receptors to detect changes, a coordination centre to process information, and effectors to respond and restore balance.<br>• Students learn that systems involve both the nervous and endocrine (hormonal) systems, which respond to stimuli (internal or external changes) using negative feedback to return conditions to normal levels. Key areas of regulation include blood glucose, body temperature, and water levels.<br>• Students learn the endocrine system uses glands to produce chemical messengers called hormones, which are released into the bloodstream and travel to target cells to regulate various body functions, including growth, metabolism, reproduction, and maintaining homeostasis. Unlike the fast-acting nervous system, the endocrine system provides slower, more long-lasting effects. Key glands include the pituitary gland (master gland), thyroid | B5 EOU HW (H/F):<br><br>Link : Homeostasis Exam questions Homework.<br><br>Therapy, followed by B5 GCSEPOD | B5 Essential knowledge.<br>Padlet: Homeostasis padlet<br>Use the link to complete padlet tasks to support learning and cover essential knowledge.<br><br>Revision mats - Homeostasis Revision Mat<br>Use the link to complete padlet tasks to support learning and cover essential knowledge. |

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| | | gland (thyroxine), pancreas (insulin), adrenal glands (adrenaline), and ovaries/testes (oestrogen/testosterone). | | |
| 2 | B6 Inheritance, variation and evolution | • Ethics of genetic technologies.<br>• **Evolution:** The process by which inherited characteristics of a population change over generations, leading to the development of new species.<br>• **Natural Selection:** The process where individuals with advantageous traits are more likely to survive and reproduce, passing those beneficial traits to their offspring.<br>• **Evidence for Evolution:** Fossils: Evidence from the fossil record showing changes in organisms over time and relationships between species.<br>• **Antibiotic-Resistant Bacteria:** How rapid reproduction and mutation in bacteria leads to the evolution of resistance to antibiotics through natural selection.<br>• **Speciation:** How geographic separation or other factors can lead to a single species splitting into multiple distinct species.<br>• **Human Impact:** Understanding how selective breeding, genetic engineering, and cloning can be used by humans to influence inheritance.<br>• **Extinction:** Learning about species being wiped out due to environmental changes or other factors. Students learn the Linnaean and modern systems of classifying living organisms, including | B6 EOU HW (H/F): Homework on Inheritance, variation and evolution<br><br>Therapy followed by B6 GCSEPOD | B6 Essential knowledge.<br>Padlet for inheritance: Inheritance, variation and evolution Padlet<br>Use the link to complete padlet tasks to support learning and cover essential knowledge.<br><br>Revision mats- Inheritance, variation and evolution revision map<br><br>Use the link to complete padlet tasks to support learning and cover essential knowledge. |

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| | | the levels of biological classification (kingdom, phylum, etc.) and the use of DNA evidence for modern classification. | | |
| 3 | B7 Ecology | • Students learn the structure and interactions within ecosystems, including biotic and abiotic factors, adaptations, food chains, and biodiversity.<br>• Students learn to measure populations using quadrats and transects, understand the carbon and water cycles, and analyse the impact of human activities like deforestation and pollution on the environment.<br>• Students also learn about sustainable management practices and links to real-world environmental issues and careers in conservation. | B7 EOU HW (H/F):<br>Ecology homework questions<br><br>Therapy followed by B7 GCSEPOD | B7 Ecology Padlet link - Ecology padlet<br><br>Use the link to complete padlet tasks to support learning and cover essential knowledge.<br><br>Revision mats- Ecology revision map<br><br>Use the link to complete padlet tasks to support learning and cover essential knowledge. |