|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *What will they be learning, why and in what order?* | | | | | |
|  | **Term 1** | **Term 2** | | | **Term 3** |
| **Bridge/ Foundation knowledge required** | Students will have a good understanding of cell structure, having covered it in years 7 and 9. Students will not yet have looked at cell transport in detail.  Students are aware of the structure of the digestive system, having studied it in year 8, but have not yet described the adaptations throughout.  Students are aware of lifestyle factors which leads to non-communicable diseases, but have not yet covered any content on communicable diseases. | Students are aware of the processes of respiration and photosynthesis.  Most students will be able to give details of what is needed for each process to take place, but most will not be able to give the word and symbol equations.  Students have not yet discussed the uses of glucose in plants. | | | Students are aware of the nervous system, but have not covered it in any details before. They will have good knowledge of nerve cells as examples of specialised cells.  Students are familiar with how hormones play a part in puberty and male/female characteristics. They have not yet covered the different glands and the parts they play in processes such as the menstrual cycle. |
| **Key Learning Experience / Skills** | GCSE Cells – Students will consolidate their knowledge of cells. They will be introduced to a wider range of tier-3 vocabulary and will begin to apply their knowledge to exam questions.  GCSE Organisation – Students will consolidate their knowledge of organ systems, and begin to discuss the adaptations of a range of organs, particularly those within the digestive system. Students will be introduced to enzymes, and will be able to describe how they catalyse chemical reactions.  GCSE Infection and Response – Students will learn the four types of pathogen, and will be able to explain how each type causes disease and give examples. Students will be able to explain the process of phagocytosis. They will be able to explain how antibiotics can be both beneficial and dangerous. | GCSE Bioenergetics – Students will be able to describe, in more detail, the process of respiration. They will learn the word and symbol equations for aerobic and anaerobic respiration, and will be able to explain when and where the two processes will take place.  They will learn the process of anaerobic respiration in plant and yeast and be able to describe how this is useful to the food and drink industry,  Students will recap the photosynthesis equation, and be able to explain why each component is needed by the plant. They will learn the structure of a leaf in detail, and apply knowledge of transpiration/translocation to photosynthesis. They will be able to state and explain the limiting factors on rate of photosynthesis. | | | GCSE Homeostasis – Students will learn the basic structure of the nervous system, and the structure of specialised nerve cells. They will learn the structure and function of a simple reflex arc, and will be able to describe the process of synaptic transmission. They will investigate reaction times. Students will be able to name the regions of the brain, and state their function.  Students will learn how hormones work and will be able to name a range of glands and their hormones. Students will apply this knowledge to be able to describe the menstrual cycle in detail, and describe how IVF works. Students will discover how the kidneys work. |
| **Assessment**  How will you assess the impact of teaching? | Students will complete plenary assessment tasks in each lesson.  Students will complete a mid-topic test and an end-of-topic test for every topic. At this stage, it will largely comprise of exam questions and will focus on fine-tuning exam technique. | | | | |
| **CIAG Links** | Cells, Organisation and infection/Response – medicine, pharmacy, pharmacology, nursing, healthcare, teaching | Bioenergetics – medicine, sport science, nursing, ecology, farming, teaching | | | Homeostasis - medicine, sport science, pharmacy, pharmacology, nursing, healthcare, teaching |
| **British Values** | Students will consider how scientific theories have not always been immediately accepted, and are impacted by the improper use of tolerance, respect and democracy.  Students will consider how rule of law and liberty play a role in the implementation of new scientific theories in areas such as medicine. | | | | |
| **Cross Curricular Link Numeracy** | Balancing symbol equations, reading and drawing graphs which demonstrate changes in rate of photosynthesis. | | **Cross Curricular Link- Literacy** | Students will be introduced to more tier-3 vocabulary at this stage.  Students will be expected to keep a glossary of key terms for each topic.  Students will be introduced to long answer exam questions, and will be taught to pull apart long-stem questions to achieve maximum marks. | |
| |  | | --- | | ***The Hub Vision – A School that provides all students with exciting opportunities that build confidence, develop social skills and promote academic achievement*** | | | | | | |