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| *What will they be learning, why and in what order?* | | | | | |
|  | **Term 1** | **Term 2** | | | **Term 3** |
| **Bridge/ Foundation knowledge required** | Students are aware of the major organ systems in the human body, and should be able to name most major organs. Students have not previously covered the muscular and skeletal systems in detail.  Students are familiar with the term DNA and that it is contained in the nucleus. They have not covered any 0other content from this topic.  Students are aware of the term element, and will have previously seen the periodic table but have not yet used it in any detail. | Students have previously covered an energy topic in year 7, and will therefore be aware of the energy stores.  Students have good knowledge of mitochondria and chloroplasts and their function, but are not expected to be able to state the relevant equations. | | | Students have previously covered elements and compounds and should be able to represent them in particle diagrams. Students are also now able to read the periodic table and predict the characteristics of a given element.  Students have previously studied forces in less detail, and should be able to name a range of contact and non-contact forces. Students have previously carried out basic equations such as W=Mg.  Students are aware of waves and should be able to describe how light travels through different substances. Students will have covered colour theory in art lessons. |
| **Key Learning Experience / Skills** | Organisation – Students will recap their knowledge of the major organs systems, and begin to look at the muscular, skeletal and endocrine systems in detail.  Genetics and Evolution – Students will discover how genes are inherited and carry our calculations to show the likelihood of expressing a particular gene.  Periodic Table – Students will discover the properties of each group in the periodic table. | Energy – Students will cover the energy stores and transfer pathways in greater details, and apply their knowledge to calculate household energy usage. Students will cover renewable and non-renewable energy resources.  Respiration and Photosynthesis – Students will learn the word and symbol equations for aerobic respiration, anaerobic respiration and photosynthesis. | | | Chemical Reactions – Students will use their knowledge of the periodic table and compounds to predict the outcomes of given chemical reactions, and accurately represent them as word and symbol equations.  Forces – Students will build on their year 7 knowledge to describe a wider range of forces, and carry out higher-demand equations.  Waves – Students will identify the key characteristics of transverse and longitudinal waves, describe how sounds echo, and identify luminous and non-luminous objects. They will also cover refraction and reflection, and colours of light. |
| **Assessment**  How will you assess the impact of teaching? | Students will complete plenary tasks in every lesson, mid-topic assessments at the halfway point in each topic, and end-of-topic tests once per topic. | | | | |
| **CIAG Links** | Organisation, Genetics and Evolution – medicine, nursing, healthcare, teaching  Periodic table – higher education chemistry, teaching | Energy – higher education physics, engineering, teaching, green chemistry  Respiration and photosynthesis – medicine, nursing, healthcare, sport science, ecology, teaching | | | Chemical reactions – further education chemistry, teaching  Forces - higher education physics, engineering, teaching  Waves – further education physics and maths, marine engineering, sound engineering, 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** | Students will carry out simple three-variable equations in the energy and forces topics.  Students will be expected to use a protractor in the Waves topic to demonstrate refraction through a glass prism. | | **Cross Curricular Link- Literacy** | Students will use glossaries to aid with the high-demand vocabulary in the biology topics. Students will complete a range of assessment questions with mixed literacy demand.  Students will frequently be tested on vocabulary through spelling tests and games such as bingo.  Teachers will present key word lists in lessons. | |
| |  | | --- | | ***The Hub Vision – A School that provides all students with exciting opportunities that build confidence, develop social skills and promote academic achievement*** | | | | | | |