The Beacon Centre Secondary Science Curriculum Long Term Plan

Academic year 22/23

The Science curriculum at the beacon Centre (secondary site) is designed to develop knowledge, help familiarise and understand key concepts. The aim is to fill any gaps in knowledge. It is vitally important that our students grasp an understanding of each unit and topic in order to progress and move on whilst following guidance from the national curriculum.

Children will be challenged to: analyse patterns, discuss limitations, draw conclusions, present data, communicate ideas, construct explanations, critique claims, justify opinions, collect data, devise questions, plan variables, test hypotheses, estimate risks, examine consequences, review theories, and interrogate sources.

In order for our children to achieve this, we as teachers will facilitate the students and have key vocabulary and scientific terminology to hand, in the form of visual classroom aids, on worksheets and reinforced throughout lessons. We will provide personalised support which will see our students create a scientifically accurate vocabulary. In addition we will ensure that there are equal opportunities which implement the use of literacy and numeracy through collecting, analysing and presenting data through experimental lessons.

Our long-term plans are created in an interlinking manner, which allows for whole school topics, trips and opportunities across all key stages to be maximised. We believe social and economic implications of science are important therefore; our teachers plan to use different contexts to maximise their pupils' engagement with and motivation to study science. There will be half termly assessments to gauge pupils' understanding of the topics covered, then recap sessions to reinforce knowledge.

Long Term overview of the topics that each class will study during each half term.			
	Key Stage 3 AQA part 2	Key stage 4 Year 10 AQA (Synergy Part 1)	KS4 Year 11 (GCSE SYNERGY Part 2)
Autumn 1	**Introduction to science** - Health and safety In laboratory setting **Forces** -(contact forces & pressure)	**4.1 Building blocks of science** **4.1.2 Atomic structure** **4.1.3 cells in animals/plants**	**4.1 Building blocks of science** **4.1.2 Atomic structure** **4.1.3 cells in animals/plants**
Autumn 2	**Electromagnets** – Electromagnets, magnetism **Energy-** work, heating and cooling	**4.1.4 waves** **4.2 transport over larger distances**	**4.1.4 waves** **4.2 transport over larger distances** **4.2.2 plants and photosynthesis**
Spring 1	**Waves-** wave effects and wave properties **Matter-** periodic table, elements	**4.2.2 plants and photosynthesis** **4.3 interactions with the environment**	**4.3 interactions with the environment** **4.4 explaining change** **4.5 building blocks for understanding**
Spring 2	**Reactions**- Chemical energy, Types of reactions **Earth-** Climate change, earth recourses	**4.4 explaining change** **4.5 building blocks for understanding**	**4.6 interactions over smaller and larger distances** **4.7movement/interactions**
Summer 1	**Organisms**- breathing, digestion **Ecosystem**- respiration, photosynthesis	**4.6 interactions over smaller and larger distances** **4.7movement/interactions**	**4.8 guiding spaceship earth towards a sustainable future** **recap units** **Assessments**
Summer 2	**Genes**- evolution, inheritance **Exams**	**4.8 guiding spaceship earth towards a sustainable future**	**Revision** **Recap units** **Assessments** **Exams**