The Beacon Centre Secondary Science Curriculum Long Term Plan

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 gradually grasp an understanding of each unit and topic in order to progress and move on whilst following guidance from the national curriculum.

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 (Aspen/Blossom)	Key stage 4/Year 10 (Redwoods)	Year 11 (Bonsai)
Autumn 1	**Introduction to science** (H&S In lab) **Forces** -(speed and gravity	**Cell Biology-** Cells, cell differentiation and specialisation, chromosomes & mitosis, stem cells, Osmosis **Forces-** contact forces and pressure	**Cell Biology-** Cells, cell differentiation and specialisation, chromosomes & mitosis, stem cells, Osmosis
Autumn 2	**Electromagnets** - Voltage & resistance Currents	**Electromagnets** – Electromagnets, magnetism **Organisation –**	**Organisation –** Cell organisation, Enzymes,

		Cell organisation, Enzymes, Digestion, lungs, Circulatory system, CV disease, plant cell organisation, Transpiration/location.	Investigating enzymatic reactions, digestion, lungs, Circulatory system, CV disease, health &disease, plant cell organisation, Transpiration/location.
Spring 1	**Energy** – Energy costs and energy transfer **Waves**- sound and light	**Energy-** work, heating and cooling **Waves-** wave effects and wave properties	**Homeostasis and response**
Spring 2	**Matter**- particle model and separating mixtures **Reactions**- metals & non-metals and acids and alkalis	**Matter-** periodic table **Reactions**- elements **Earth-** Climate change Earth recourses	**Inheritance, variation and evolution**
Summer 1	**Earth**- Structure and universe **Organisms**- movement and cells **Ecosystem**- interdependence and plant reproduction	**Organisms**- breathing, digestion **Ecosystem**- respiration, photosynthesis	**Ecology**
Summer 2	**Genes**- variation and human reproduction	**Genes**- evolution, inheritance **Exams**	**Exams**