BEACONSFIELD HIGH SCHOOL

Science Grade Descriptors

The structure of our science provision works differently to most other subjects. In Y7 the students follow a combined science course before splitting into the three sciences in Y8. They then begin their GCSE courses at the start of Y9. This means the grade descriptors are in three separate documents reflecting the short KS3 in this faculty.

Y7 Science Grade Descriptors		
	Developing	**Proficient**
Biology – click here for Y8 and here for Y9		
Cells (Structure, Function & Microscopy)	• Identifies key structures in plant, animal and specialised cells. • States simple functions of main cell parts. • Gives basic facts about microscopes. • Names common unicellular organisms.	• Explains differences between plant, animal and specialised cells. • Describes how adaptations help specialised cells carry out functions. • Uses a microscope appropriately and explains magnification with calculations. • Describes how unicellular organisms use their features to survive.
Ecosystems (Food Webs, Interdependence & Adaptations)	• Defines food chains, food webs, habitats and simple interdependence. • Identifies producers, consumers and simple feeding relationships. • Names basic adaptations of organisms. • States the equation for photosynthesis	• Explains energy transfer in food chains and why chains are short. • Uses food webs to predict population changes with reasoning. • Describes ecological niches and coexistence in ecosystems. • Explains adaptations clearly and how organisms respond to environmental changes. • Explains predator–prey relationships.

		• Use of quadrats and calculations to sample.
Reproduction (Humans & Plants)	• Identifies puberty changes and basic reproductive structures. • Define and describe what fertilisation, implantation and pregnancy is. • Labels basic flower structures and describes simple pollination.	• Explains hormonal and physical changes during puberty. • Describes functions of reproductive organs and explains fertilisation. • Explains stages of sexual reproduction including implantation, gestation and birth. • Explain the different methods to stop pregnancy using different types of contraceptives. • Describe the process of IVF. • Describes pollination, fertilisation and seed formation in plants. • Explains adaptations for seed dispersal and predicts dispersal mechanisms
Chemistry– click here for Y8 and here for Y9		
Particles (Particle Model, States of Matter & Changes of State)	• States that materials are made of particles. • Identifies properties of solids, liquids and gases. • Labels particle arrangement and movement in the three states. • States meanings of mass, volume and density. • Identifies simple changes of state (melting, freezing, boiling, evaporation, condensation). • Gives simple examples of diffusion.	• Uses the particle model to explain properties of solids, liquids and gases. • Explains changes of state using particle movement and energy. • Describes and interprets temperature–time graphs for melting and boiling. • Explains differences in density using the particle model. • Predicts states at given temperatures using melting and boiling points. • Explains factors that affect diffusion using particle ideas.
Elements, Atoms and Compounds	• States what an element is and gives examples.	• Uses the Periodic Table to find names and symbols confidently.

	• Identifies simple symbols on the Periodic Table. • States meanings of atom and element. • States that compounds are formed when elements combine. • Identifies whether diagrams show elements or compounds. • Names familiar two-element compounds from simple diagrams.	• Explains differences between atoms, elements and compounds. • State that compounds have different properties from their elements. • Compares diagrams of elements and compounds with justification. • Determines chemical formulae of compounds from diagrams or atom ratios.
Separation Techniques (Mixtures, Solutions & Methods of Separation) **Developing**	• Identifies examples of mixtures and pure substances. • States the meanings of solvent, solute, solution and dissolving. • Identifies simple separation techniques such as filtration, evaporation, sieving or magnetism. • Describes what happens during dissolving in simple terms. • Recognises simple laboratory equipment used in separation. • States that different mixtures require different separation methods.	• Explains differences between pure substances, mixtures and solutions. • Describes dissolving using particle ideas. • Explains how filtration, evaporation, distillation and chromatography work. • Selects appropriate separation techniques for different mixtures with justification. • Interprets simple chromatograms (e.g., number of substances present). • Explains how solubility affects separation. • Uses scientific vocabulary such as *solute, solvent, filtrate, residue, distillate, chromatography*.
Physics– click here for Y8 and here for Y9		
Forces (Types of Forces, Effects & Interactions)	• Identifies simple contact and non-contact forces. • Labels force arrows for familiar forces. • States that forces can deform objects. • Identifies situations involving friction, drag, and support forces. • Describes effects of gravity in simple terms. • Identifies balanced and unbalanced forces in everyday scenarios.	• Explains differences between contact and non-contact forces. • Describes how forces arise and how they change an object's motion. • Explains deformation using terms such as reaction forces and Hooke's Law. • Explains how drag and friction arise and how streamlining reduces them. • Describes gravitational and magnetic fields.

		• Explains weight vs. mass and calculates weight using W = mg. • Explains effects of balanced and unbalanced forces on motion.
Light (Reflection, Refraction & Vision)	• Identifies light sources and states that light travels in straight lines. • Describes simple reflections using ray diagrams. • Identifies transparent, translucent and opaque materials. • States that shadows form when light is blocked.	• Explains reflection using accurate ray diagrams. • Describes refraction and explains how light bends between materials. • Explains how we see objects and how lenses focus light. • Uses scientific vocabulary such as *incident ray, normal, reflected ray, angle of incidence/reflection*.
Sound (Vibrations, Waves & Hearing)	• States that sound is made by vibrations. • Identifies that sound travels through solids, liquids and gases at different speeds. • Describes simple differences between loud and quiet sounds. • Identifies basic features of the ear.	• Explains how vibrations travel as sound waves. • Describes how pitch and volume are affected by frequency and amplitude. • Explains why sound travels at different speeds in different materials. • Explains how the ear detects sound using scientific vocabulary such as *vibration, frequency, amplitude, wave*.