Bellerive FCJ Catholic College

Department: Applied Science AAQ **Year Group: 12**

Bold indicates building on previous knowledge

Term	Learning Focus	Key Knowledge and Skills	Assessment	Challenge and Enrichment
1	Unit 1: Principles and applications of Biology Unit 2: Principles and applications of Chemistry Unit 3 Principles and applications of Physics	Develop an understanding of the structure and function of cells and tissues, specialised cells in multicellular organisms and of biological tissues. Develop understanding of atomic and electronic structure including features of periodic table and their relationship with atomic structure, electronic structure and ionisation energy. Develop understanding of bonding and structure including metallic bonding and giant metallic structures, ionic binding and giant ionic structure and covalent bonding and molecules. Develop and understanding of waves and optical fibres including features of waves, principles of fibre optics and uses of electromagnetic waves in communication.	End of unit assessments	Students use books and booklets to engage in further work.
2	Unit 1: Principles and applications of Biology Unit 2: Principles and applications of Chemistry	Develop an understanding of the structure and function of biological molecules including, water, carbohydrates, proteins and nuclei acids. Develop an understanding of periodicity including, changes in properties of elements in period 3, oxidation number concept, oxidation and reduction. Develop an understanding of physical chemistry including the concept of mole, chemical kinetics, chemical energetics and chemical equilibrium.	End of unit assessments	Students use books and booklets to engage in further work.

	Unit 3 Principles and applications of Physics	Develop an understanding of forces in transportation and Newtons laws of motion including standard SI units, speed, vectors and scalars, motion calculations and the laws of motion and inertia, mass and weight.		
3	Unit 1: Principles and applications of Biology Unit 2: Principles and applications of Chemistry Unit 3 Principles and applications of Physics	Develop and understanding of cellular transport and enzyme activity including enzymes as biological catalysts and homeostasis Develop understanding of organic chemistry including key terms, structure representations and types of reaction. Develop understanding of electrical circuits and the transfer of energy including the use of electrical components, calculations, electrical energy usage, energy transfers and change of state.	End of unit assessments	Students use books and booklets to engage in further work.