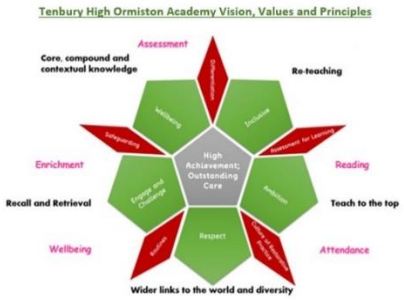
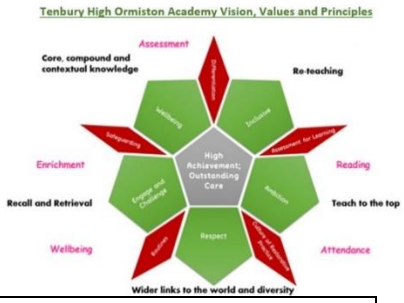
TENBURY HIGH
ORMISTON ACADEMY

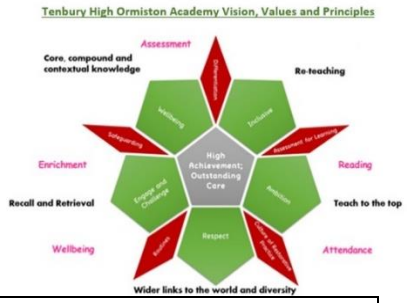


Curriculum Overview for Science
Year 9

Half Term 3: BBL6, **Substantive Knowledge:** • The hierarchical organisation of multicellular organisms: from cells to tissue to • organs to systems to organisms. • Cells as the fundamental unit of living organisms, including how to observe, • interpret and record cell structure using a light microscope. • The structure and functions of the gas exchange systems in humans, including • adaptations to function. • The structural adaptations of some unicellular organisms. • The consequences of imbalances in the diet, including obesity, starvation, and • deficiency disease. • The function of the cell wall, vacuole and chloroplasts. • The similarities and differences between plant and animal cells. **Disciplinary Knowledge:** • Recognise complex moral and ethical implications of a scientific or technological development • Critically evaluate information, data and evidence from various sources, explaining limitations, misrepresentation or lack of balance in the process of interpretation • Independently making and recording observations and measurements using a range of apparatus and methods. • Independently recognise familiar risks and make suggestions on how to control them. • Use a microscope to make observations of biological specimens and produce labelled scientific drawings. • Solve simple algebraic equations • Change the subject of a formula • Make order of magnitude calculations		Article homework – reading for meaning, Model reading and highlighting to pick out key details, reading of data, Skim reading
		Adaptation, Convection, Radiation, Insulate, Trend, Collision, Particle, Force, Pendulum, Risk, Diffusion, Thermal, Energy, Population, Bioindicator
		Recall test Written Assessment
		Article Homework to promote reading like a scientist Revise for recall test Optional revision for written assessment and wish tasks when complete.
Half Term 4: BBl6, Bom10 **Substantive Knowledge:** • The hierarchical organisation of multicellular organisms: from cells to tissue to • organs to systems to organisms. • Cells as the fundamental unit of living organisms, including how to observe, • interpret and record cell structure using a light microscope.		Article homework – reading for meaning, Model reading and highlighting to pick out key details, reading of data, Skim reading
		Adaptation, Convection, Radiation, Insulate, Trend, Collision, Particle, Force, Pendulum, Risk, Diffusion, Thermal, Energy, Population, Bioindicator



• The structure and functions of the gas exchange systems in humans, including • adaptations to function. • The structural adaptations of some unicellular organisms. • The consequences of imbalances in the diet, including obesity, starvation, and • deficiency disease. • The function of the cell wall, vacuole and chloroplasts. • The similarities and differences between plant and animal cells. • Chemical symbols and formulae for elements and compounds. • Find pattern between the pitch of a sound and features of the object that produced it. • Combustion, thermal decomposition, oxidation and displacement reactions. • Mixtures, including dissolving. • the PH Scale for measuring acidity/alkalinity; and indicators. • A simple (Dalton) atomic model. • Difference between atoms, elements and compounds. • the composition of the atmosphere. • The concept of a pure substance. • Simple techniques for separating mixtures; filtration, evaporation, and distillation. • Electrical current measured in amperes, in circuits, series and parallel circuits, current and where branches meet and current flow of charge. • forces between magnets and forces due to static electricity • Relationship between an electron and an atom. • The principles underpinning the Mendeleev periodic table. • The periodic table; periods and groups; metals and non-metals. • How patterns in reactions can be predicted with reference to the periodic table. • The properties of metals and non-metals. • The chemical properties of metal and non-metal oxides with respect of acidity **Disciplinary Knowledge:** • Recognise complex moral and ethical implications of a scientific or technological development • Critically evaluate information, data and evidence from various sources, explaining limitations, misrepresentation or lack of balance in the process of interpretation • Independently making and recording observations and measurements using a range of apparatus and methods. • Independently recognise familiar risks and make suggestions on how to control them.	 	Recall test Written Assessment Article Homework to promote reading like a scientist Revise for recall test Optional revision for written assessment and wish tasks when complete.



• Use a microscope to make observations of biological specimens and produce labelled scientific drawings. • Solve simple algebraic equations • Change the subject of a formula • Make order of magnitude calculations • Accurately collect data, choosing appropriate ranges, and repeats needed • Use appropriate sampling techniques/ and or scientific procedures to collect data • Respond to ideas given to them to answer questions or suggest solutions to problems • Use scientific ideas when describing simple processes or phenomena. • Use simple models to describe scientific ideas. • Use abstract models when describing processes or phenomena. • Pupils should use appropriate scientific and mathematical conventions and terminology to communicate abstract ideas • Draw valid conclusions using more than one piece of supporting evidence, including numerical data and graphs		