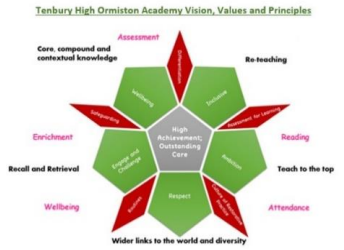
TENBURY HIGH ORMISTON ACADEMY

Curriculum Overview for Science
Yr 7



Half Term 1: Science skills, BBL1 and BOM5 **Substantive Knowledge:** Parts of the Bunsen burner Safety symbols Variables The function of the cell membrane, cytoplasm, nucleus, and mitochondria 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 function of the human skeleton, to include support, protection, movement and making blood cells Biomechanics - the interaction between skeleton and muscles, including the measurement of force exerted by different muscle groups The function of muscles and examples of antagonistic muscles the differences in arrangements, in motion and in closeness of particles explaining changes of state, shape and density, the anomaly of ice water transition atoms and molecules as particles the properties of different states of matter (solid, liquid and gas) in terms of particle model, including gas pressure the difference between physical and chemical changes **Disciplinary Knowledge:** Identifying hazards Identifying variables How to draw a table Writing methods How to use a Bunsen burner Using a model (cell diagram) to describe the structure of something we can't see with the naked eye. Identify the strengths and weaknesses of particular models Identify possible **risks** to yourself or others Identify a suitable piece of **equipment** or information source to address a specific question Construct and interpret bar charts Draw straightforward conclusions from data presented Using a model (Particle model) to describe the structure of something we can't see with the eye. Identify the strengths and weaknesses of specific models. Formulate a prediction based on learnt science.	   	Skim and Scan of source information Decoding terms Etymology of key terms Breaking down exam questions Safety, Hazard, Independent, dependent variable, control variable, Table, variable, Method, Hypothesis, Accurate, Resolution, Volume, Meniscus, Safety flame, Roaring flame, Scale, Cell, Cell membrane, cytoplasm, nucleus, mitochondria, unicellular/multicellular, tissue, microscope, specimen, eyepiece lens, objective lens, cover slip, methylene blue, biomechanics, antagonistic musles, tendon, atom, molecule, macroscopic, vibrate, anomaly, density, compress, pressure, gas pressure, syringe Baseline Recall questions to start every lesson Exam questions in homework End of unit assessment Revision Card preparation for every lesson Exam questions - application
Half Term 2: BOM6. OEOO4, BE3 **Substantive Knowledge:** A simple (Dalton) atomic model. Difference between atoms, elements and compounds. Chemical symbols and formulae for elements and compounds. Conservation of mass changes of state and chemical reactions. Forces measured in Newtons. Forces as pushes or pulls, arising from the interaction between objects: Contact forces and non-contact forces. Non-contact forces: gravity forces acting at a distance on earth and in space. Single forces. Draw for contact and non-contact, including magnetism. Using force arrows in diagrams to show each force acting upon an object. Balanced forces and equilibrium; weight held by stretched spring or supported on compressed surfaces. Measurements of stretching or compression as force is changed. Our Sun as a star, other stars in the galaxy and other galaxies Gravity force, weight = mass x gravitational fields strength (g), on Earth g=10 N/kg, different on other planets and stars. Gravity forces between Earth and Moon, and between Earth and Sun (qualitative only) **Disciplinary Knowledge:** Using a model to describe the structure of something we can't see with the eye. Identify the strengths and weaknesses of specific models Formulate a prediction based on learnt science. Identify sources of random/and or systematic error Draw straight forward conclusions from data presented. Formulate an opinion for or against a scientific or technological development, using moral and ethical implications to inform your opinion Convert in, and out of standard form Recognise real applications of specific scientific ideas Identify a suitable piece of equipment needed to collect reliable data Identify one or more control variables in an investigation Describe observations using cause and effect, identifying sources of zero, random and systematic error Draw straight forward conclusions from data presented Use simple models to describe scientific ideas. Identify the strengths and weaknesses of models. Draw straight forward conclusions from data presented Describe patterns and trends in given data Use a scientific calculator Solve simple algebraic calculations	   	Skim and Scan of source information Decoding terms Etymology of key terms Breaking down exam questions Thrust, normal reaction force, electrostatic force, Newton, magnitude, stretch, compress, elastic, inelastic, extension, stationary, motion, equilibrium, mixture, chemical symbol, chemical formulae, reactants, products, conservation of mass, word equation, gravity, astronomical unit, weight, gravitational field strength, asteroid, comet, moon, galaxy, star Baseline Recall questions to start every lesson Exam questions in homework End of unit assessment Revision Card preparation for every lesson Exam questions - application