

BTEC Introductory Level 1 Applied Science Year 1 Curriculum Plan 2022 – 2023 (Award – 1 Unit, Certificate – 3 Units)

Term	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Component	Exploring Biology 1 Learning Aim A and B	Exploring Biology 2 Learning Aim A and B 30 Credits (Completion of both Learning Aims)	Exploring Chemistry 1 Learning Aim A and B	Exploring Chemistry 2 Learning Aim A and B 30 Credits (Completion of both Learning Aims)	Exploring Physics 1 Learning Aim A and B	Exploring Physics 2 Learning A and B 30 credits (Completion of both Learning Aims)
Learning Outcomes	<i>Students will investigate the differences in living organisms, what are organisms made of?</i> <u>Why Are There Variations of Life?</u> Classroom Outcomes Identify the different types of organisms State the life processes in living organisms Define what is a living organism Project Outcomes Visit to London Zoo Chosen genus from visit, students to develop a system of identification through a key system Assessment of Learning Meeting criteria for learning Aim Feedback from Zoo staff <u>What Are The Building Blocks of Life?</u> Classroom Outcomes Identify the differences between animal and plant cells Describe how new cells form and reproduce Project Outcomes Visit and carry out an investigation at the	<i>Students will investigate why (nearly) all humans are different and what are the role of genes?</i> <u>Why don't we all look the same?</u> Classroom Outcomes Identify the inherited variations in humans Investigate if there are links between inherited variations Project Outcomes Identify 2 inherited characteristics and survey school population to identify if there is a link Assessment of Learning Meeting criteria for Learning Aims Present findings to a STEM science ambassador <u>Is it all in our Genes?</u> Classroom Outcomes Identify the role of genes in inheritance Describe characteristics which are controlled by genes Project Outcomes Visit and carry out a DNA extraction at the Met Uni labs	<i>Students will investigate what all materials are made from, why they have the properties that they have?</i> <u>Why do some things react, and others don't?</u> Classroom Outcomes Identify what an atom is made of Create chemical equations using chemical formula Describe the patterns in a periodic table Project Outcomes Visit to a soap factory Students investigate the production of soap and the chemical/reactions involved Assessment of Learning Meeting criteria for Learning Aims Prepare a finished package product for feedback from professionals	<i>Students will investigate the properties of materials, exploring their uses</i> <u>How do we form a solid from a liquid?</u> Classroom Outcomes Identify the difference between metals and non-metals Describe the different states of matter and the change from one to another Project Outcomes Visit to a pharmacology lab, to see production of drugs Produce a solid from the preparation of liquids, Aspirin Assessment for Learning Meeting criteria for the Learning Aims Present the product to the pharmaceutical manufacturer	<i>Students will investigate Energy and how it is transferred through different systems. How waves transfer energy</i> <u>What is Energy?</u> Classroom Outcomes Identify different energy stored in different systems Describe how energy is transferred from one energy store to another and the efficiency of the transfer of energy Explore the transfer of energy by waves Project Outcomes Visit a renewable energy site (solar or turbine) to see how energy is transferred for everyday use Produce a detailed research project detailing a renewable energy source and evaluate how this produces energy for everyday use Assessment for Learning Meeting criteria for the Learning Aims	<i>Students will investigate how electrical energy is transferred in a circuit. Making appropriate measurements and observations</i> <u>How is electricity used to make things work?</u> Classroom Outcomes Identify the different components of an electrical circuit and the safety precautions to be taken Describe the theory of circuits (Current, Potential Difference and Resistance), through practical examples Explain the use of physics in predicting the changes in the environment, i.e. weather, atmosphere Project Outcomes Specialist from the electrical sector to inform students on the importance of understanding the physics of electricity and the safety elements Students to build a circuit with a real world

	Metropolitan University of London Assessment for Learning Meeting Criteria for learning Aims Feedback from Met Uni Staff	Assessment of Learning Meeting the criteria for the learning Aims Present a laboratory report to the Met Uni Lab staff			A detailed research guide evaluating the chosen renewable energy	use, taking measurements and evaluating effectiveness Assessment for Learning Meeting criteria for the Learning Aims A detailed lab report outlining the effectiveness of the circuit and the measurements taken
Required Practical Activities	Field Survey Photosynthesis <u>Classification</u> Testing gases (respiration) Modelling Cells <u>Making Slides of Cells</u>	<u>Inherited Characteristics</u> Model of DNA Structure <u>DNA Extraction</u> Fruit Fly Crosses Classification tree practical	Alkali metals Model of the Atom <u>Making Soap</u> Investigating Ions Making/testing quicklime from limestone	Common reactions of metals Properties of the States of Matter Cooling curve <u>Producing Aspirin (ASC has an aspirin allergy)</u> OR Producing chloral hydrate (TBC as per COSHH/CLEAPPS)	Specific heat capacity Measuring waves using a wave machine	Building a circuit Measuring a current/potential difference in a circuit Measuring resistance across a component <u>Investigating the change of resistance of a thermistor/LDR</u>
Assessment	Each practical activity is to be written as a report to meet both of the learning aims. These will form a progress grade. Underlined are the project assessments which must be complete and marked by the end of term.	Each practical activity is to be written as a report to meet both of the learning aims. These will form a progress grade. Underlined are the project assessments which must be complete and marked by the end of term.	Each practical activity is to be written as a report to meet both of the learning aims. These will form a progress grade. Underlined are the project assessments which must be complete and marked by the end of term.	Each practical activity is to be written as a report to meet both of the learning aims. These will form a progress grade. Underlined are the project assessments which must be complete and marked by the end of term.	A detailed research guide evaluating the chosen renewable energy Success criteria described in learning aim A of this part of the unit	Each practical activity is to be written as a report to meet both of the learning aims. These will form a progress grade. Underlined are the project assessments which must be complete and marked by the end of term.