

Curriculum Map: 2022/23 ABU – STEM/Engineering

Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
7 STEM	7 DT1 - Woodworking and environment- Making the bug box in response to a brief following engineering drawing instructions. Health and safety, working with tools and equipment, considering environmental issues and solutions		7 IT – logging on to a computer, e-safety, using emails and looking at websites		7 Food – Healthy food and nutrition – Working in kitchen environments, health and safety, safe food preparation, making food dishes and evaluating.	
8 STEM	8 DT -Making a Moisture Sensor - Electronics Designing and building a moisture sensor with electrical components, soldering, Vacuum Forming, designing a logo, CAD/CAM, acrylics and client types.		8 IT – e-safety, programming and developing skills using software		8 Food – Kitchen hygiene and food preparation – Healthy food choices, understanding nutrition, evaluating, making and preparing food dishes and kitchen safety.	
9 STEM	9 DT – Engineering Processes - Making a screwdriver from raw materials, following an engineering drawing, health and safety, using tools and equipment, measuring and marking out and working independantly		9 IT – Programming using software to build up skills in ICT Technology		9 Food – Making Healthy Choices - The four C's of food safety, food and the life stages, sensory analysis, food labelling, food poisoning, food preparation and evaluation	
10 A/B Engineering	Introduction to Engineering and the careers it can lead to. Making a steel trowel developing workshop skills with an emphasis on health and safety.	Research into materials types and manufacturing processes including Smart materials, composite materials and general engineering materials. Continuation of workshop activities and skills building	Introduction of technical drawing using pencils and drawing equipment. Develeopment of using CAD skills to produce engineering drawings. Resonding to a brief and designing an engineering product.	Resonding to a brief and designing an engineering product continuation. Using ESCAPE FM to analyse products and consider design requirements.	Electronics skills development, producing a product with circuit components. Woodwork skills development improving accueacy and evaluation.	Using CAD skills, electronic knowledge, health and safety skills and workshop knowledge to complete a product and evaluate it.
11 A/B Engineering	Introduction to engineering careers and health and safety. Exam board assessment following engineering drawings to produce a final prototype, and producing a portfolio that evidences the skills used with an evaluation of the overall product.	Completion of the exam board required prototype workshop build. Recording proceses, evidencing the use of engineering drawings with symboils and conventions.	Developing and engineered product responding to a brief. Development of ideas based on researching engineering solutions. Exam revision.	Producing engineering 3 rd angle drawings of design ideas responding to the brief. Evaluating the designs and making improvements	Exam revision covering the key components set by the exam board.	
National Curriculum	Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world	Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users	Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations	Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture	Critique, evaluate and test their ideas and products and the work of others	Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups