TECHNOLOGY KS3 LTP- **YEAR 03**

Beginning 23-24 and every third year moving forward
Subject to timetable, class numbers and various factors specific to that year
THIS IS A WORKING DOCUMENT AND AS SUCH SUBJECT TO CHANGE DEPENDING ON FACTORS RELATING TO THE YEAR IN QUESTION.

	Topic/Learning Pathway	Key Words	Links to previous learning	Links to wider curriculum
AUTUMN TERM	-H&S and procedures. -Wood Carving Project -Voice recorder project	• Health and Safety • Personal • Protective • Equipment • Accuracy • Various tool names • Chisel • Files • Rasps • Soldering • Solder • Volcano • Various circuit components • Designs	**Key stage 2:** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: **Design** ♣ use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ♣ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Make** ♣ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ♣ select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities **Evaluate** ♣ investigate and analyse a range of existing products ♣ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ♣ understand how key events and individuals in design and technology have helped shape the world Technical knowledge ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ♣ understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] ♣ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] ♣ apply their understanding of computing to program, monitor and control their products.	**Science-** Links to 'Science and the Universe' includes the structure of the earth and plate tectonics. **Art-** Links to 'My World' in Art at KS3/4. - sculpting techniques **Food Tech-** Health and Safety **PSHE-** QA techniques and the importance in the industry **SCIENCE-** Electronics/ systems and control **PSHE & FOODTECH-** packaging and the environment/ important information per packaging.
SPRING TERM	-Voice recorder project (cont). -Quality Assurance (Theory)	• Soldering • Solder • Volcano • Various circuit components • Designs • Testing • Assurance • Procedure • Safety	**Key stage 3** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture], and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion]. When designing and making, pupils should be taught to:	**ART-** Bauhaus design movement **PSHE & FOODTECH-** packaging and the environment/ important information per packaging.

			Design ♣ use research and exploration, such as the study of different cultures, to identify and understand user needs ♣ identify and solve their own design problems and understand how to reformulate problems given to them ♣ develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations ♣ use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses ♣ develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools	**KS4 Construction-** Joinery **Maths-** measuring
SUMMER TERM	-Speaker Project -Wood Joinery- Half-Lap Joint	• Soldering • Solder • Volcano • Various circuit components • Designs • Testing • Precise • Measurement • Gauge • Wood • Strength		**KS4 Construction-** Joinery Maths- measuring
	-Speaker Project -Fairtrade (Theory- Morality and ethics)	• Creativity • Suitability • Evaluate • Fairtrade • Ethical/ ethics	**Make** ♣ select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture ♣ select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties Evaluate ♣ analyse the work of past and present professionals and others to develop and broaden their understanding ♣ investigate new and emerging technologies ♣ test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups ♣ understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists Design and technology – key stage 3 3 **Technical knowledge** ♣ understand and use the properties of materials and the performance of structural elements to achieve functioning solutions ♣ understand how more advanced mechanical systems used in their products enable changes in movement and force ♣ understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs] ♣ apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].	**ART-** design ability and skill between design and make **PSHE-** fairtrade and benefits toward people and the economy