KS2 DT	Year 5 – Spring – Mechanisms- Automaton

Design	Make	Evaluate
• List tools needed before starting the activity. • Plan the sequence of work e.g. using a storyboard. • Record ideas using annotated diagrams. • Use models, kits and drawings to help formulate design ideas. • Combine modelling and drawing to refine ideas. • Devise step by step plans which can be read / followed by someone else. • Use exploded diagrams and cross-sectional diagrams to communicate ideas. • Sketch and model alternative ideas. • Decide which design idea to develop.	• Make prototypes. • Develop one idea in depth. • Use researched information to inform decisions. • Produce detailed lists of ingredients / components / materials and tools. • Use a computer to model ideas. • Select from and use a wide range of tools. • Cut accurately and safely to a marked line. • Select from and use a wide range of materials. • Use appropriate finishing techniques for the project. • Refine their product – review and rework/improve.	• Research and evaluate existing products (including book and web based research). • Consider user and purpose. • Identify the strengths and weaknesses of their design ideas. • Give a report using correct technical vocabulary. • Consider and explain how the finished product could be improved related to design criteria. • Discuss how well the finished product meets the design criteria of the user. Test on the user! • Understand how key people have influenced design.

Key Learning	Vocabulary	Inventor- Jacques de Vaucanson
• Develop a technical vocabulary appropriate to the project. • Use mechanical systems such as cams, pulleys and gears. • Program, monitor and control using ICT.	• pulley, drive belt, • gear, rotation, • spindle, driver, follower, • ratio, • transmit, • axle, motor, circuit, switch, circuit diagram, • annotated drawings, exploded diagrams, • mechanical system, electrical system, • Input, process, output	 Vaucanson was an 18th-century French engineer and inventor who created some of the earliest and most famous mechanical automatons.

National Curriculum links:

- 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
- Critique, evaluate and test their ideas and products and the work of others

Design	Make	Evaluate	Technical knowledge

• 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	• 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	• 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 • Understand how key events and individuals in design and technology have helped shape the world shape the world	• 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.