Design Technology Learning Journeys
Year 6

Autumn World War II	Spring The Middle East	Summer The Roman Supremacy
Project Overview	**Project Overview**	**Project Overview**
In this unit, the children learn about 'make do and mend' initiatives in WWII. They will investigate and evaluate a range of products which have been produced by combining fabric shapes and patterns. They will look at how existing products have been constructed, disassembling products to look at the shapes, how they have been joined, strengthened or stiffened. They will look at fastenings that have been used. The children will undertake focused practical tasks to develop skills if sewing using a range of stitches. They will make seams, tacking fabrics together. They will practise making 2D patterns using grid or tracing paper to create a mock up before they go on to design and make a product using recycled fabric.	In this unit, the children will investigate and evaluate everyday products that incorporate pulley systems. They will explore through video and photographs how these systems are used in industry and manufacturing. They will use construction kits to combine different sized pulleys to learn about direction and speed of rotation. They will develop skills of measuring, marking, cutting, shaping and joining skills. The children will go on to use annotated drawings and exploded diagrams to communicate design ideas. They will ensure that their design is relevant to the world today, producing a model of a pulley system that could be used by and be of benefit to people in the Middle East. For example, a crane pulley system to be of benefit whilst building structures for the 2022 World Cup.	In this unit, the children investigate the movement of levers and in particular, the use of levers by the Romans and their ballistas in battle. They explore different products and toys that use levers and explore how they are used in other products / industries. The children go on to design and make their own model catapult with a lever mechanism, considering how it will move and also the finishing techniques they will use to create the finished product. They will ensure that their design is relevant in the world today. For example, designing a dog toy to be used by someone with a physical disability. They will use a range of tools accurately and safely. They develop the skills of marking, cutting, shaping and joining.
Aspect and Focus	**Aspect and Focus**	**Aspect and Focus**
Aspect: Textiles **Focus:** Combining different fabric shapes	**Aspect:** Mechanisms **Focus:** Pulleys	**Aspect:** Multi-aspect project **Focus:** Free standing structure and levers
Outcome of DT Project	**Outcome of DT Project**	**Outcome of DT Project**
Outcome: To produce a product of their own choice from recycled textiles that is functional and has a clear purpose.	**Outcome:** To produce a model of a working pulley system that would overcome a problem in the world today. This will be	**Outcome:** Design and make a working catapult. Children will research and understand the workings of a Roman ballista and

Design Technology Learning Journeys
Year 6

For example, a Christmas stocking, a pillow case, a needlebook.	linked to the Middle East and helping people in this region of the world. For example, drawing water from a well, crane pulley systems whilst building structures for the 2022 World Cup.	use this knowledge to solve a modern day problem. For example, making a catapult to throw a ball for a dog (disability awareness) or making a toy for a small child using recycled materials (cost effectiveness in the current monetary climate).
Main Focus for Skills Development	**Main Focus for Skills Development**	**Main Focus for Skills Development**
Prior learning • Experience of basic stitching, joining textiles and finishing techniques. • Experience of making and using simple pattern pieces. **Designing** • Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. **Making** • Produce detailed lists of equipment and fabrics relevant to their tasks. • Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. **Evaluating** • Investigate and analyse textile products linked to their final product.	**Prior learning** • Experience of wheels that are fixed or free moving. • Experience of cutting and joining techniques with a range of materials including card, plastic and wood. • An understanding of how to strengthen and stiffen structures. **Designing** • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost. **Evaluating** • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work.	**Prior learning** • Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials. • Basic understanding of what structures are and how they can be made stronger, stiffer and more stable. • Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. **Making** • Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. • Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** • Investigate and evaluate a range of existing frame structures. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths

Design Technology Learning Journeys
Year 6

• Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. **Technical knowledge and understanding** • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate.	• Investigate famous manufacturing and engineering companies relevant to the project. **Technical knowledge and understanding** • Understand that mechanical systems have an input, process and an output. • Understand and use pulley mechanisms. • Understand how pulleys can be used to speed up, slow down or change the direction of movement. • Know and use technical vocabulary relevant to the project.	and areas for development, and carrying out appropriate tests. • Research key events and individuals relevant to frame structures. **Technical knowledge and understanding** • Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Understand and use lever mechanisms. • Know and use technical vocabulary relevant to the project.