

Year 1 – Design and Technology Overview



Topic	Mechanisms: Making a moving story book (Autumn term)	Textiles: Puppets (Spring term)	Structures: Constructing a windmill (Summer term)
Linked Books			
Designer/Architect/Engineer	<p style="text-align: center;">Thomas Edison</p>	<p style="text-align: center;">Jim Henson</p>	<p style="text-align: center;">William Kamkwamba</p>
Skills			
Design	<ul style="list-style-type: none"> • Explaining how to adapt mechanisms, using bridges or guides to control the movement. • Designing a moving story book for a given audience. 	<ul style="list-style-type: none"> • Using a template to create a design for a puppet. 	<ul style="list-style-type: none"> • Learning the importance of a clear design criteria. • Including individual preferences and requirements in a design.
Make	<ul style="list-style-type: none"> • Following a design to create moving models that use levers and sliders. 	<ul style="list-style-type: none"> • Cutting fabric neatly with scissors. • Using joining methods to decorate a puppet. • Sequencing steps for construction. 	<p>Making stable structures from card, tape and glue .</p> <ul style="list-style-type: none"> • Learning how to turn 2D nets into 3D structures.

Year 1 – Design and Technology Overview



			<ul style="list-style-type: none"> • Following instructions to cut and assemble the supporting structure of a windmill. • Making functioning turbines and axles which are assembled into a main supporting structure.
Evaluate	<ul style="list-style-type: none"> • Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. • Reviewing the success of a product by testing it with its intended audience. 	<ul style="list-style-type: none"> • Reflecting on a finished product, explaining likes and dislikes. 	<ul style="list-style-type: none"> • Evaluating a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't. • Suggest points for improvements.
Substantive knowledge			
Technical	<ul style="list-style-type: none"> • To know that a mechanism is the parts of an object that move together. • To know that a slider mechanism moves an object from side to side. • To know that a slider mechanism has a slider, slots, guides and an object. • To know that bridges and guides are bits of card that purposefully restrict the movement of the slider. 	<ul style="list-style-type: none"> • To know that 'joining technique' means connecting two pieces of material together. • To know that there are various temporary methods of joining fabric by using staples, glue or pins. • To understand that different techniques for joining materials can be used for different purposes. • To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. • To know that drawing a design idea is useful to see how an idea will look. 	<ul style="list-style-type: none"> • To understand that the shape of materials can be changed to improve the strength and stiffness of structures. • To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses). • To understand that axles are used in structures and mechanisms to make parts turn in a circle. • To begin to understand that different structures are used for different purposes. • To know that a structure is something that has been made and put together.
Additional	<ul style="list-style-type: none"> • To know that in Design and technology we call a plan a 'design'. 		<ul style="list-style-type: none"> • To know that a client is the person I am designing for. • To know that design criteria is a list of points to ensure the product meets the clients needs and wants. • To know that a windmill harnesses the power of wind for a purpose like grinding

Year 1 – Design and Technology Overview



			<p>grain, pumping water or generating electricity.</p> <ul style="list-style-type: none"> • To know that windmill turbines use wind to turn and make the machines inside work. • To know that a windmill is a structure with sails that are moved by the wind. • To know the three main parts of a windmill are the turbine, axle and structure.
Vocabulary	Sliders, mechanism, adapt, design criteria, design, input, model, template, test, assemble.	Decorate, fabric, model, safety pin, stencil, design, glue, hand puppet, staple, template	Axle, design, model, packaging, template, stable, bridge, design criteria, net, structure, unstable, strong, weak.