Trinity St Mary's CE Primary Progression of skills in Design Technology - EYFS & KS1

Structures	Reception (Junk Modelling & Boats)	Year 1 (Constructing a windmill)	Year 2 (Baby Bear's Chair)	End of Key Stage 1 expectations
DESIGN	• Making verbal plans and material choices. • Developing a junk model. • Designing a junk model boat. • Using knowledge from exploration to inform design.	• Learning the importance of a clear design criteria. • Including individual preferences and requirements in a design.	• Generating and communicating ideas using sketching and modelling. • Learning about different types of structures, found in the natural world and in everyday objects.	*Design purposeful, functional, appealing products for themselves and other users based on design criteria *Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
MAKE	• Improving fine motor/scissor skills with a variety of materials. • Joining materials in a variety of ways (temporary and permanent). • Joining different materials together. • Describing their junk model, and how they intend to put it together. • Making a boat that floats and is waterproof, considering material choices.	• Making stable structures from card, tape and glue. • Learning how to turn 2D nets into 3D structures. • 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.	• Making a structure according to design criteria. • Creating joints and structures from paper/card and tape. • Building a strong and stiff structure by folding paper.	*Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] *Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
EVALUATE	• Giving a verbal evaluation of their own and others' junk models with adult support. • Checking to see if their model matches their plan. • Considering what they would do differently if they were to do it again. • Describing their favourite and least favourite part of their model. • Making predictions about, and evaluating different materials to see if they are waterproof. • Making predictions about, and evaluating existing boats to see which floats best. • Testing their design and reflecting on what could have been done differently. • Investigating the how the shapes and structure of a boat affect the way it moves.	• 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	• Exploring the features of structures. • Comparing the stability of different shapes. • Testing the strength of own structures. • Identifying the weakest part of a structure. • Evaluating the strength, stiffness and stability of own structure	*Explore and evaluate a range of existing products *Evaluate their ideas and products against

TECHNICAL KNOWLEDGE - materials/structures	• To know there are a range to different materials that can be used to make a model and that they are all slightly different. • Making simple suggestions to fix their junk model. • To know that 'waterproof' materials are those which do not absorb water.	• 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.	• To know that shapes and structures with wide, flat bases or legs are the most stable. • To understand that the shape of a structure affects its strength. • To know that materials can be manipulated to improve strength and stiffness. • To know that a structure is something which has been formed or made from parts. • To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. • To know that a 'strong' structure is one which does not break easily. • To know that a 'stiff' structure or material is one which does not bend easily.	*Build structures, exploring how they can be made stronger, stiffer and more stable
TECHNICAL KNOWLEDGE - Additional	• To know that some objects float and others sink. • To know the different parts of a boat.	• 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 client's needs and wants. • To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity. • 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.	• To know that natural structures are those found in nature. • To know that man-made structures are those made by people.	

Mechanisms & Mechanical Systems	Reception	Year 1	Year 2 (Fairground wheel & Making a moving monster)	End of Key Stage 1 expectations
DESIGN			• Selecting a suitable linkage system to produce the desired motion. • Designing a wheel. • Creating a class design criteria for a moving monster. • Designing a moving monster for a specific audience in accordance with a design criteria.	*Design purposeful, functional, appealing products for themselves and other users based on design criteria *Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
MAKE			• Selecting materials according to their characteristics. • Following a design brief. • Making linkages using card for levers and split pins for pivots. • Experimenting with linkages adjusting the widths, lengths and thicknesses of card used. • Cutting and assembling components neatly.	*Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] *Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
EVALUATE			• Evaluating different designs. • Testing and adapting a design. • Evaluating own designs against design criteria. • Using peer feedback to modify a final design.	*Explore and evaluate a range of existing products *Evaluate their ideas and products against

TECHNICAL KNOWLEDGE - Mechanisms & Mechanical Systems			• To know that different materials have different properties and are therefore suitable for different uses. • To know that mechanisms are a collection of moving parts that work together as a machine to produce movement. • To know that there is always an input and output in a mechanism. • To know that an input is the energy that is used to start something working. • To know that an output is the movement that happens as a result of the input. • To know that a lever is something that turns on a pivot. • To know that a linkage mechanism is made up of a series of levers.	*Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
TECHNICAL KNOWLEDGE - Additional			• To know the features of a Ferris wheel include the wheel, frame, pods, a base an axle and an axle holder. • To know that it is important to test my design as I go along so that I can solve any problems that may occur. • To know some real-life objects that contain mechanisms.	

Cooking & Nutrition	Reception	Year 1 (Smoothies)	Year 2	End of Key Stage 1 expectations
DESIGN		• Designing smoothie carton packaging by-hand.		*Design purposeful, functional, appealing products for themselves and other users based on design criteria *Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
MAKE		• Chopping fruit and vegetables safely to make a smoothie. • Juicing fruits safely to make a smoothie.		*Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] *Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
EVALUATE		• Tasting and evaluating different food combinations. • Describing appearance, smell and taste. • Suggesting information to be included on packaging. • Comparing their own smoothie with someone else's.		*Explore and evaluate a range of existing products *Evaluate their ideas and products against

TECHNICAL KNOWLEDGE – Cooking & Nutrition		• To know that a blender is a machine which mixes ingredients together into a smooth liquid. • To know that a fruit has seeds. • To know that fruits grow on trees or vines. • To know that vegetables can grow either above or below ground. • To know that vegetables is any edible part of a plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).		

Textiles	Reception (Bookmarks)	Year 1 (Puppets)	Year 2	End of Key Stage 1 expectations
DESIGN	• Discussing what a good design needs. • Designing a simple pattern with paper. • Designing a bookmark. • Choosing from available materials.	• Using a template to create a design for a puppet.		*Design purposeful, functional, appealing products for themselves and other users based on design criteria *Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
MAKE	• Developing fine motor/cutting skills with scissors. • Exploring fine motor/threading and weaving (under, over technique) with a variety of materials. • Using a prepared needle and wool to practise threading.	• Cutting fabric neatly with scissors. • Using joining methods to decorate a puppet. • Sequencing the steps taken during construction.		*Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] *Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
EVALUATE	• Reflecting on a finished product and comparing to their design.	• Reflecting on a finished product, explaining likes and dislikes.		*Explore and evaluate a range of existing products *Evaluate their ideas and products against

TECHNICAL KNOWLEDGE – Textiles	• To know that a design is a way of planning our idea before we start. • To know that threading is putting one material through an object.	• 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.		