MILLFIELDS CE PRIMARY

Knowledge and Skills Progression: DT

Year group	Structures	Textiles	Cooking & Nutrition
Foundation (F1)	Design • Begin to talk about their ideas. • Explore a range of materials to make models. Make • Begin to develop motor skills. • Start to make models with adult assistance. Evaluate • To start to talk about models they have made. Knowledge • To become familiar with a range of materials.	Design • Designing a simple pattern with paper. • Designing a bookmark. • Choosing from available materials. Make • Using a prepared needle and wool to practise threading. Evaluate • Reflecting on a finished product and comparing to their design. Knowledge • To know that a design is a way of planning our idea before we start.	Design • Designing soup packaging. Make • Chopping plasticine safely. Evaluate • Tasting the soup and giving opinions. • Describing some of the following when tasting food: look, feel, smell and taste. Knowledge • To know that vegetables are grown. • To know that eating vegetables is good for us.
Reception (F2)	Design • Making verbal plans and material choices. • Developing a junk model. 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. 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. Knowledge • 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.	Design • Discussing what a good design needs. • Designing a simple pattern with paper. • Designing a bookmark. • Choosing from available materials. 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. Evaluate • Reflecting on a finished product and comparing to their design. Knowledge • 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.	Design • Designing a soup recipe as a class. • Designing soup packaging. Make • Chopping vegetables with support. Evaluate • Tasting the soup and giving opinions. • Describing some of the following when tasting food: look, feel, smell and taste. • Choosing their favourite packaging design and explaining why. Knowledge • To know that soup is ingredients (usually vegetables and liquid) blended together. • To know that vegetables are grown. • To recognise and name some common vegetables. • To know that different vegetables taste different. • To know that eating vegetables is good for us. • To discuss why different packages might be used for different foods.

Year 1	Design • Learning the importance of a clear design criteria. • Including individual preferences and requirements in a design. Make • 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. Evaluate • 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. Technical • 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 • 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 grain, pumping water or generating electricity. • To know that windmill turbines use wind to turn and make the machine 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.	Design • Using a template to create a design for a puppet. Make • Cutting fabric neatly with scissors. • Using joining methods to decorate a puppet. • Sequencing steps for construction. Evaluate • Reflecting on a finished product, explaining likes and dislikes. Knowledge • 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.	Design • Designing smoothie carton packaging by-hand. Make • Chopping fruit and vegetables safely to make a smoothie. • Juicing fruits safely to make a smoothie. 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. Knowledge • 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).

Year 2	Design • Generating and communicating ideas using sketching and modelling. • Learning about different types of structures, found in the natural world and in everyday objects. Make • 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. Evaluate • 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. Technical • 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. Additional • To know that natural structures are those found in nature. • To know that man-made structures are those made by people.	Design • Designing a pouch. Male • Selecting and cutting fabrics for sewing. • Decorating a pouch using fabric glue or running stitch. • Threading a needle. • Sewing running stitch, with evenly spaced, neat, even stitches to join fabric. • Neatly pinning and cutting fabric using a template. Evaluate • Troubleshooting scenarios posed by teacher. • Evaluating the quality of the stitching on others' work. • Discussing as a class, the success of their stitching against the success criteria. • Identifying aspects of their peers' work that they particularly like and why. Knowledge • To know that sewing is a method of joining fabric. • To know that different stitches can be used when sewing. • To understand the importance of tying a knot after sewing the final stitch. • To know that a thimble can be used to protect my fingers when sewing.	Design • Designing three wrap ideas based on a food combination which work well together Male • Chopping foods safely to make a wrap. • Constructing a wrap that meets a design brief. • Grating foods to make a wrap. • Snipping smaller foods instead of cutting. Evaluate • Describing the taste, texture and smell of fruit and vegetables. • Taste testing food combinations and final products. • Describing the information that should be included on a label. • Evaluating food by giving a score. Knowledge • To know that 'diet' means the food and drink that a person or animal usually eats. • To understand what makes a balanced diet. • To know that the five main food groups are: • Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. • To understand that I should eat a range of different foods from each food group, and roughly how much of each food group. • To know that 'ingredients' means the items in a mixture or recipe.

Year 3	Design • Designing a castle with key features to appeal to a specific person/purpose. • Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours. • Designing and/or decorating a castle tower on CAD software. Make • Constructing a range of 3D geometric shapes using nets. • Creating special features for individual designs. • Making facades from a range of recycled materials. Evaluate • Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design. • Suggesting points for modification of the individual designs. Technical • To understand that wide and flat based objects are more stable. • To understand the importance of strength and stiffness in structures. Additional • To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose. • To know that a façade is the front of a structure. • To understand that a castle needed to be strong and stable to withstand enemy attack. • To know that a paper net is a flat 2D shape that can become a 3D shape once assembled. • To know that a design specification is a list of success criteria for a product.	Design • Designing and making a template from an existing cushion and applying individual design criteria. Make • Following design criteria to create a cushion or Egyptian collar. • Selecting and cutting fabrics with ease using fabric scissors. • Threading needles with greater independence. • Tying knots with greater independence. • Sewing cross stitch to join fabric. • Decorating fabric using appliqué. • Completing design ideas with stuffing and sewing the edges Evaluate • Evaluating an end product and thinking of other ways in which to create similar items. Knowledge • To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. • To know that when two edges of fabric have been joined together it is called a seam. • To know that it is important to leave space on the fabric for the seam. • To understand that some products are turned inside out after sewing so the stitching is hidden.	Design • Designing a recipe for a savoury tart. Make • Following the instructions within a recipe. • Tasting seasonal ingredients. • Selecting seasonal ingredients. • Peeling ingredients safely. • Cutting safely with a vegetable knife. Evaluate • Establishing and using design criteria to help test and review dishes. • Describing the benefits of seasonal fruits and vegetables and the impact on the environment. • Suggesting points for improvement when making a seasonal tart. Knowledge • To know that not all fruits and vegetables can be grown in the UK. • To know that climate affects food growth. • To know that vegetables and fruit grow in certain seasons. • To know that cooking instructions are known as a ‘recipe’. • To know that imported food is food which has been brought into the country. • To know that exported food is food which has been sent to another country.. • To know that eating seasonal foods can have a positive impact on the environment. • To know that similar coloured fruits and vegetables often have similar nutritional benefits. • To know that the appearance of food is as important as taste.

Year 4	Design • Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect. • Building frame structures designed to support weight. Make • Creating a range of different shaped frame structures. • Making a variety of free standing frame structures of different shapes and sizes. • Selecting appropriate materials to build a strong structure and cladding. • Reinforcing corners to strengthen a structure. • Creating a design in accordance with a plan. • Learning to create different textural effects with materials. Evaluate • Evaluating structures made by the class. • Describing what characteristics of a design and construction made it the most effective. • Considering effective and ineffective designs. Technical • To understand what a frame structure is. • To know that a 'free-standing' structure is one which can stand on its own. Additional • To know that a pavilion is a a decorative building or structure for leisure activities. • To know that cladding can be applied to structures for different effects. • To know that aesthetics are how a product looks. • To know that a product's function means its purpose. • To understand that the target audience means the person or group of people a product is designed for. • To know that architects consider light, shadow and patterns when designing.	Design • Writing design criteria for a product, articulating decisions made. • Designing a personalised book sleeve. Make • Making and testing a paper template with accuracy and in keeping with the design criteria. • Measuring, marking and cutting fabric using a paper template. • Selecting a stitch style to join fabric. • Working neatly by sewing small, straight stitches. • Incorporating a fastening to a design. Evaluate • Testing and evaluating an end product against the original design criteria. • Deciding how many of the criteria should be met for the product to be considered successful. • Suggesting modifications for improvement. • Articulating the advantages and disadvantages of different fastening types Knowledge • To know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro. • To know that different fastening types are useful for different purposes. • To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions.	Design • Designing a biscuit within a given budget, drawing upon previous taste testing judgements. Make • Following a baking recipe, including the preparation of ingredients. • Cooking safely, following basic hygiene rules. • Adapting a recipe to meet the requirements of a target audience. Evaluate • Evaluating a recipe, considering: taste, smell, texture and appearance. • Describing the impact of the budget on the selection of ingredients. • Evaluating and comparing a range of food products. • Suggesting modifications to a recipe (e.g. This biscuit has too many raisins, and it is falling apart, so next time I will use less raisins). Knowledge • To know that the amount of an ingredient in a recipe is known as the 'quantity.' • To know that safety and hygiene are important when cooking. • To know the following cooking techniques: sieving, measuring, stirring, cutting out and shaping. • To understand the importance of budgeting while planning ingredients for biscuits. • To know that products often have a target audience.

Year 5/6	Design • Designing a stable structure that is able to support weight. • Creating a frame structure with a focus on triangulation. Make • Making a range of different shaped beam bridges. • Using triangles to create truss bridges that span a given distance and support a load. • Building a wooden bridge structure. • Independently measuring and marking wood accurately. • Selecting appropriate tools and equipment for particular tasks. • Using the correct techniques to saws safely. • Identifying where a structure needs reinforcement and using card corners for support. • Explaining why selecting appropriating materials is an important part of the design process. • Understanding basic wood functional properties. Evaluate • Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary. • Suggesting points for improvements for own bridges and those designed by others. Technical • To understand some different ways to reinforce structures. • To understand how triangles can be used to reinforce bridges. • To know that properties are words that describe the form and function of materials. • To understand why material selection is important based on properties. • To understand the material (functional and aesthetic) properties of wood. Additional • To understand the difference between arch, beam, truss and suspension bridges. • To understand how to carry and use a saw safely.	Design • Designing a stuffed toy, considering the main component shapes required and creating an appropriate template. • Considering the proportions of individual components. Make • Creating a 3D stuffed toy from a 2D design. • Measuring, marking and cutting fabric accurately and independently . • Creating strong and secure blanket stitches when joining fabric. • Threading needles independently. • Using appliqué to attach pieces of fabric decoration. • Sewing blanket stitch to join fabric. • Applying blanket stitch so the spaces between the stitches are even and regular. Evaluate • Testing and evaluating an end product and giving point for further improvements. Knowledge • To know that blanket stitch is useful to reinforce the edges of a fabric • material or join two pieces of fabric. • To understand that it is easier to finish simpler designs to a high standard. • To know that soft toys are often made by creating appendages separately and then attaching them to the main body. • To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.	Design • Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. • Writing an amended method for a recipe to incorporate the relevant changes to ingredients. • Designing appealing packaging to reflect a recipe. • Researching existing recipes to inform ingredient choices. Make • Cutting and preparing vegetables safely. • Using equipment safely, including knives, hot pans and hobs. • Knowing how to avoid cross-contamination. • Following a step by step method carefully to make a recipe. Evaluate • Identifying the nutritional differences between different products and recipes. • Identifying and describing healthy benefits of food groups. Knowledge • To understand where meat comes from - learning that beef is from cattle and how beef is reared and processed. • To know that recipes can be adapted to suit nutritional needs and dietary requirements. • To know that I can use a nutritional calculator to see how healthy a food option is. • To understand that 'cross-contamination' means bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects. • To know that coloured chopping boards can prevent cross-contamination. • To know that nutritional information is found on food packaging. • To know that food packaging serves many purposes.