Hippings Methodist Primary School	Design Technology – Progression of Skills

During the Early Years Foundation Stage children will learn to: *Explore, use and refine a variety of artistic effects to express their ideas and feelings. *Return to and build on their previous learning, refining ideas and developing their ability to represent them. *Create collaboratively, sharing ideas, resources and skills. ELG *Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. *Share their creations, explaining the process they have used. *Make use of props and materials when role-playing characters in narratives and stories.	When designing and making, pupils should be taught to: **Design** *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** *Select from and use a range of tools and equipment to perform practical tasks, eg, 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** *Explore and evaluate a range of existing products. *Evaluate their ideas and products against design criteria. **Technical Knowledge** *build structures, exploring how they can be made stronger, stiffer and more stable. *explore and use mechanisms, eg, levers, sliders, wheels and axles, in their products. **Cooking and Nutrition** *use the basic principles of a healthy and varied diet to prepare dishes. *understand where food comes from.	When designing and making, pupils should be taught to: **Design** *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. **Make** *Select from and use a wider range of tools and equipment to perform practical tasks, eg, 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. **Evaluate** *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 their work. *Understand how key events and individuals in design and technology have helped shape the world. **Technical Knowledge** *apply their understanding of how to strengthen, stiffen, and reinforce more complex structures. *understand and use mechanical systems in their products, eg, gears, pulleys, cams, levers and linkages. *understand and use electrical systems in their products, eg, series circuits incorporating switches, bulbs, buzzers and motors. *apply their knowledge of computing to program, monitor and control their products. **Cooking and Nutrition** *understand and apply the principles of a healthy and varied diet. *prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
DESIGN	*Explain what they are making and which materials they are using. *Select materials from a limited range that will meet a simple design criteria e.g. shiny. *Select and name the tools needed to work the materials e.g. scissors for paper. *Explore ideas by rearranging materials. *Describe simple models or drawings of ideas and intentions. Discuss their work as it progresses.	*Begin to draw on their own experience to help generate ideas and research conducted on criteria. Begin to understand the development of existing products: Explain what they are for, how they work, what materials have been used. Start to suggest ideas and explain what they are going to do. Understand how to identify a target group for what they intend to design and make based on design criteria. Begin to develop their ideas through talk and simple drawing. *Make templates and mock ups of their ideas in card or paper. *Communicate with others about how they want to construct their product. *Explain how they intend to fix simple materials.	*Start to generate ideas by drawing on their own and other people's experiences. *Begin to develop their design ideas through discussion, observation, drawing and modelling. *Identify a purpose for what they intend to design and make. Understand how to identify a target group for what they intend to design and make based on design criteria. *Develop their ideas through talk and drawings and label parts. *Begin to explain why they chose a certain material. *Develop their own ideas from given starting points.	*With growing confidence generate ideas for an item, considering its purpose and the user. *Start to order the main stages of making a product. *Identify a purpose and establish criteria for a successful product. *Understand how well products have been designed, made, what materials have been used and the construction technique. *Start to understand whether products *Know to make drawings with labels when designing. When planning, explain their choice of materials and components. *Put together a step-by-step plan which shows the order and also what equipment and tools they need	*Start to generate ideas, considering the purposes for which they are designing. Confidently make labelled drawings from different views showing specific features. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. *Identify the strengths and areas for development in their ideas and products. *When planning, consider the views of others to improve their work. *Produce a plan and explain it to others. *Consider how to present their product in an interesting way.	*Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD. *Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. *With growing confidence apply a range of finishing techniques. *Use results of investigations when developing design ideas. *Start to understand how much products cost to make, how sustainable and innovative they are. *Produce a detailed step-by step plan. Suggest some alternative plans and say what the good points and drawbacks are about each.	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD. *Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. *Accurately apply a range of finishing techniques. *Plan the order of their work, choosing appropriate materials, tools and techniques. *Suggest alternative methods of making if the first attempts fail. Identify the strengths and areas for development in their ideas and products. *Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose

MAKE	*Begin to create their design using basic techniques. Start to build structures, joining components together. Use technical vocabulary when appropriate. Begin to use scissors to cut straight and curved edges and hole pinches to punch holes. Explore using/ holding basic tools such as a saw or hammer. Use adhesives to join material.	*Begin to make their design using appropriate techniques. *Begin to build structures, exploring how they can be made stronger, stiffer and more stable. *Explore and use mechanisms, eg, levers and sliders. *With help measure, mark out, cut and shape a range of materials. *Explore using tools e.g. scissors and a hole punch safely. *Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. *Make a product which moves. *Attempt to make their model stronger if it needs to be.	*Begin to select tools and materials; use correct vocabulary to name and describe them. • Learn to use hand tools safely and appropriately. • Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques. Join fabric using running stitch, glue and tape. *Start to choose and use appropriate finishing touches techniques. *Be able to join things (materials/ components) together in different way. *Attach features to a vehicle (e.g. an axel and wheels)	*Select a wider range of tools and techniques for making their product. *Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work. *Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. *Measure, mark out, cut, score and assemble components with more accuracy. *Start to work safely and accurately with a range of simple tools. *Try alternative ways of fixing something if the first attempt is not successful. *Create and use simple gears, pulleys, cams, levers and linkages.	*Start to join and combine materials and components accurately in temporary and permanent ways. *Start to understand that mechanical and electrical systems have an input, process and output. *Know how simple electrical circuits and components can be used to create functional products. *Build a model which incorporates a motor. *Join fabrics using running stitch, blanket stitch and over sewing. *Explore fastenings and recreate some. *Sew on buttons and make loops. *Add appropriate decoration techniques.	*Join materials using appropriate methods. *Build frameworks to support mechanisms. *Stiffen and reinforce complex structures. *Understand how mechanical systems such as cams or pulleys or gears create movement. *Assemble components to make working models. *Know how to reinforce and strengthen a 3D framework. *Demonstrate how to use skills in using different tools and equipment safely and accurately. *With growing confidence cut and join with accuracy to ensure a good-quality finish to the product.	*Make prototypes. *Use researched information to inform decisions. *Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. *Understand that mechanical and electrical systems have an input, process and output. *Aim to make and to achieve a quality product. *With confidence pin, sew and stitch materials together to create a product. *Refine their product – review and rework/improve.

EVALUATE	• Say what they like and do not like about items they have made and attempt to say why. Begin to talk about their designs as they develop and identify good and bad points. Start to talk about changes made during the making process. Discuss how closely their finished products meet their design criteria.	*Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria). *When looking at existing products explain what they like and dislike about the products and why. Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make next time.	*Evaluate their work against their design criteria. Look at a range of existing products and explain what they like and dislike about the products and why. *Start to evaluate their products as they are developed, identifying what went well and possible changes they might make next time. *With confidence talk about their idea.	*Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose. *Suggest some improvements and say what was good and not so good about their original design *Begin to disassemble and evaluate familiar products and consider the views of others to improve them. *Begin to evaluate how the key designs of individuals in design and technology have helped shape the world.	*Evaluate their work both during and at the end of the assignment. *Begin to explain how they can improve their original designs. *Evaluate their product, thinking of both appearance and the way it works.	*Start to evaluate a product against the original design specification and by carrying out tests. *Begin to seek evaluation from others. *Evaluate appearance and function against original criteria.	*Identify the strengths and weaknesses of their design ideas. *Report using correct technical vocabulary. *Discuss how well the finished product meets the design criteria of the user. *Understand how key people have influenced design.
FOOD	*Experience of common fruit and vegetables, undertaking sensory activities, eg, taste, appearance and smell. *Experience of cutting soft fruit and vegetables using appropriate utensils.	*Understand that all food comes from plants or animals. *Group familiar food products. *Name some foods and begin to sort them into the five groups. *Know that everyone should eat at least 5 portions of fruit and vegetables each day. *Know how to prepare a simple dish safely and hygienically. *Begin to use techniques such as cutting and peeling.	*Understand that all food comes from plants or animals and identify foods that are grown, reared and caught. *Develop understanding of where different food comes from. *Understand how to name and sort foods into the five groups. *Recognise the need for a variety of food in a diet. *Demonstrate how to prepare simple dishes safely and hygienically without a heat source.	*Understand and apply the principles of a heathy and varied diet. *Develop sensory vocabulary using smell, taste, texture and feel. *Analyse the taste, texture, smell and appearance of food. *Understand how to use a range of techniques, eg, peeling, chopping, cutting, slicing, grating and spreading. *Develop sensory vocabulary using smell, taste, texture and feel. *Follow instructions and recipes.	*Understand why a healthy diet is important. *Know that different foods are grown, reared and caught in the UK, Europe and the wider world. *Understand how to prepare and cook a savoury dish including a heat source. *Understand how to use a range of techniques, eg, mixing, kneading and baking. *Know that to be healthy and active, food and drink are needed for growth and energy.	*Understand that seasons may affect the availability of food. *Demonstrate increasing confidence in how to use a range of techniques. *Evaluate a meal they have made and consider how it contributes to a healthy balanced diet. *Weigh and measure using scales. *Select and prepare food for a particular purpose.	*Know where and how ingredients are grown and processed. *Understand that seasons may affect the availability of food and what types of food are seasonal in Britain. *Prepare and cook predominantly savoury dishes safely and hygienically using a heat source. *Confidently use a range of cooking techniques. *Consider influence of chefs – both from the past and present day.

		*Develop vocabulary using taste, smell, texture and feel.	*Be more confident to cut, peel, grate and chop a range of ingredients. *Measure and weigh food using non statutory measures.			*Select and use appropriate tools and equipment.	
TEXTILES	*Explored and used different fabrics. *Cut and joined fabrics with simple techniques. *Thought about the user and purpose of products.		*Start to use the appropriate vocabulary to refer to fabrics and tools. *Cut out shapes which have been created by drawing round a template onto the fabric. *Join fabrics by using running stitch, glue, staples, over sewing and tape. *Decorate fabrics with attached items, eg, buttons, beads, sequins, braids and ribbons. *Colour fabrics by using a range of techniques, eg, fabric paints, printing and painting.		*Develop vocabulary for tools, materials and their properties. *Understand seam allowance. *Join fabrics using running stitch, over sewing and blanket stitch. *Prototype a product using J cloths. *Use prototype to make pattern. *Explore strengthening and stiffening of fabrics. *Explore fastenings and recreate some. *Sew on buttons and make loops. *Use appropriate decoration techniques.		*Use the correct vocabulary appropriate to the project. *Create 3D products using patterns, pieces and seam allowance. *Understand pattern layout. *Decorate textiles appropriately (often joining components) *Pin and tack fabric pieces together. *Join fabrics using over sewing, back stitch, blanket stitch or machine stitching (close supervision) *Combine fabrics to create more useful properties. *Make quality products.
STRUCTURES	*Experience of using construction kits to build walls, towers and frameworks. *Experience of using basic tools, eg, scissors and hole punches with construction materials, eg, plastic and card. *Experience of different methods of joining card and paper.	*Join appropriately for different materials and situations, eg, glue and tape. *Mark out materials to be cut using a template. *Explore how to make structures stronger. *Investigate different techniques for stiffening a variety of materials. *Test different methods of enabling structures to remain stable.		*Create shell or frame structures. *Strengthen frames with diagonal struts. *Make structures more stable by giving them a wide base. *Measure and mark square section, strip and dowel accurately to 1cm.		*Use bradawl to mark hole positions. *Use hand drill to drill tight and loose fit holes. *Cut strip wood, dowel, square section wood accurately to 1mm. *Join materials using appropriate methods. *Build frameworks to support mechanisms.	

						*Stiffen and reinforce complex structures.	
MECHANISMS	*Early experiences of working with paper and card to make simple flaps and hinges. *Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape. *Experience of using construction kits to build walls, towers and frameworks.	*Join appropriately for different materials and situations, eg, glue and tape. *Mark out materials to be cut using a template. *Fold, tear and cut paper and card. *Cut along lines – straight and curved. *Use a hole punch. *Insert paper fasteners for card. *Experiment with levers and sliders to find different ways of making things move.	*Use technical vocabulary when describing mechanisms, tools and materials they use. *Try out different axle fixings and their strengths and weaknesses. *Make vehicles with construction kits which contain free running wheels. *Use a range of materials to create models with wheels and axles, eg, tubes, dowel and cotton reels. *Roll paper to create tubes. *Cut dowel using hacksaw and bench hook. *Attach wheels to a chassis using an axle.	*Use mechanical systems such as levers and linkages. *Use lolly sticks/card to make levers and linkages. *Use linkages to make movement larger or more varied.	*Incorporate a circuit into a model. *Use electrical systems such as switches, bulbs and buzzers. *Use ICT to control products.	*Develop a technical vocabulary appropriate to the project. *Use mechanical systems such as cams, pulleys and gears.	*Develop a technical vocabulary appropriate to the project. *Use electrical systems such as motors. *Program, monitor and control products using ICT.