Hujjat Primary School
Knowledge and Skill Progression Map
Subject: Design Technology (D.T)

Year Group	Knowledge (Know)	Skills (Do)	Concepts & Vocabulary (Understand)
Reception	• *Know the basic safety and hygiene rules for cookingand eating.* • *Know the names of a range of classroom materials (e.g.lego, duplo, blocks etc).*	• *Choose to construct and make things as part of freeplay activity* • *Construct with a purpose in mind* • *Share what has been made with peers and adults* • *Use simple tools and techniques appropriately* • *Build and construct with a wide range of objects andmaterials* • *Select independently the tools and techniques theywant to use to shape, assemble and join materials* • *Problem solve when making if something does not goas planned* • *Take into account risk when working with tools andmaterials e.g. use scissors safely*	• *Make, build, construct* • *Plan* • *Review* • *Risk* • *Hygiene*

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Year 1	***Knowledge (Know)***	***Skills (Do)***	***Concepts & Vocabulary (Understand)***
	• *Know the characteristics and properties of someeveryday materials.* • *Know some simple types of mechanisms.* • *Know some ways stabilise or strengthen a structure.* • *Know appropriate ways to join materials e.g. gluepaper, sew fabric* • *Know that people should eat at least 5 portions of fruitand vegetables a day* • *Know that food comes from plants or animals* • *Know that food has to be farmed, caught, or grown* • *Know different ways to classify foods and theirnutritional pros and cons.*	• *Explore what a product is, who it is for, how a productworks and how it is used* • *Identify where you might find this product* • *Explain what product they will be designing and making* • *Explain who their product will be used by* • *Describe what their product will be used for* • *Discuss what their steps for making could be* • *Represent ideas through talking and drawing* • *Use a range of materials -construction materials andkits, textiles, food and mechanical components* • *Select materials for their product based on theirproperties* • *Choose suitable tools for making* • *Use tools and materials showing an understanding ofrisk and safety* • *Follow food safety and food hygiene procedures* • *Measure, mark, cut and shape materials andcomponents* • *Join, assemble and combine materials and components* • *Talk about their design ideas and what they have made* • *Make simple judgements of how the product met theirdesign ideas* • *Sort foods into the 5 groups using for example TheEatwell Plate* • *Prepare simple dishes hygienically and safely without aheat source, or prior to cooking by an adult* • *Use cooking techniques such as: cutting, peeling andgrating*	• *Product* • *Material* • *Join, fix, glue, sew* • *Mechanism* • *Tool* • *Structure* • *Stability, strength* • *Sequence* • *Purpose, function* • *Origins of food – from plants andanimals etc*

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Year 2	***Knowledge (Know)***	***Skills (Do)***	***Concepts & Vocabulary (Understand)***
	• *Know which materials will be appropriate for which functions and uses and which are not* • *Know how to make a structure stronger, more stable, stiff or rigid* • *Know how to make an increase range of mechanisms including sliders, levers, hinges, axels, and winders.* • *Know a range of textile techniques including sewing and weaving.* • *Know the main food groups and their nutritional benefits* • *Know the key features of a healthy diet*	• *Explore examples of products before designing their own, asking appropriate questions* • *Identify the materials and techniques used to make the product* • *Express their opinion about the product and seek the opinion of others* • *Use own experiences and existing products to develop ideas* • *Explain what product they will be designing and making as well as who their intended user* • *Describe what their product will be used for and how it will work* • *Explain why their product is suitable for the intended user* • *Discuss what their steps for making could be* • *Represent ideas through talking, drawing and computing (where appropriate)* • *Choose materials to use based on suitability of their properties* • *Create templates/pattern pieces and explore materials whilst developing ideas* • *Use materials -construction materials and kits, textiles, food and mechanical components and fixings e.g. glue, split pins etc* • *Choose suitable tools for making* • *Follow safety and food hygiene procedures showing an understanding of risk* • *Independently measure, mark, cut and shape materials and components* • *Join, assemble and combine materials and components using appropriate techniques*	• *Strong, stable, rigid* • *Mechanism* • *Hinge, lever* • *Textile* • *Weave* • *Template* • *Component* • *Finishing* • *Design, plan* • *Technique* • *Evaluate*

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		• *Use finishing techniques, including skills learnt in Art* • *Talk about their design ideas and what they have made* • *Make simple judgements of how the product met theirdesign ideas* • *Suggest how their product could be improved* • *Prepare simple dishes hygienically and safely without aheat source or prior to cooking by an adult* • *Use a wider range of cooking techniques such as: weighing, cutting, chopping, sieving, mixing, peelingand grating*	

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Year 3	***Knowledge (Know)***	***Skills (Do)***	***Concepts & Vocabulary (Understand)***
	• *Know which materials will be appropriate for which functions and uses and which are not* • *Know how to make a structure stronger using bracing, girders, struts or rafters* • *Know how to make an increase range of mechanisms including sliders, levers, linkages, springs, discs, hinges, axels, and winders.* • *Know a range of textile techniques including sewing, binding, embroidery and weaving.* • *Know that food can be classified as sweet and savoury and give examples of each* • *Know which foods are reared, caught, or grown and that this happens in the UK and across the globe* • *Know that recipes can be changed by adding or taking away ingredients* • *Know that the seasons can affect food produce* • *Know that food and drink are needed to provide energy for a healthy and active lifestyle: identify that people should eat at least 5 portions of fruit and vegetables a day*	• *Explore a product prior to designing and evaluate examples of the product on design and use* • *Research facts about products, famous inventors/ chefs / designers etc linked to product* • *Gather information about what a particular group or people want from a product prior to designing* • *Describe the purpose of their product, how it is appropriate for the intended users and explain how their product works* • *Generate realistic ideas that meet needs of user* • *Share and discuss ideas with others* • *Order the main stages of making* • *Choose materials to use based on suitability of their properties* • *Represent ideas in diagrams, annotated sketches and computer-based programmes (where appropriate)* • *Create pattern pieces and prototypes* • *Use a full range of materials- construction materials and kits, textiles, food, mechanical and electrical components* • *Choose suitable tools for making whilst explaining why they should be used* • *Use their design criteria whilst making the product* • *Follow safety and food hygiene procedures* • *Measure, mark, cut and shape materials and components with some accuracy* • *Join, assemble and combine materials and components with some accuracy* • *Use finishing techniques, including skills learnt in Art with some accuracy*	• *Design criteria* • *Bracing, girders, struts, rafters* • *Axel* • *Sweet, savoury* • *Audience, user*

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		• *Use design criteria to evaluate product – identifying both strengths and areas for development* • *Consider the views of others, including intended user, whilst evaluating product* • *Prepare simple dishes hygienically and safely, where needed with a heat source* • *Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking*	

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Year 4	***Knowledge (Know)***	***Skills (Do)***	***Concepts & Vocabulary (Understand)***
	• *Know key events and individuals in design and technology have helped shape the world and had an impact on society and culture.* • *Know which materials will be appropriate for which functions and uses and which are not* • *Know how to make a structure stronger using a base, reinforcement, bracing, girders, struts or rafters* • *Know how to make an increase range of mechanisms including sliders, levers, linkages, springs, discs, hinges, axels, pneumatics and winders.* • *Know how to use electrical components as part of a mechanism* • *Know a range of textile techniques including hand sewing, machine sewing, binding, embroidery, and weaving.* • *Know that food can be classified as sweet and savoury and give examples of ingredients and products which are in each category* • *Know that food production has environmental implications and be able to talk about sustainable choices* • *Know that people make dietary choices for a variety of reasons e.g. halal/kosher, vegetarians, vegans etc* • *Know that some people have food allergies and how these can be managed safely* • *Know that food and drink are needed to provide energy for a healthy and active lifestyle: identify that people should eat at least 5 portions of fruit and vegetables a day*	• *Present research about a product type prior to designing including who has made the product, when it was made, what its purpose, and what the product has been made from* • *Evaluate the product on design and use identifying strengths and areas of challenge* • *Research facts, to assist in design, about famous inventors/ chefs / designers/ companies etc linked to product* • *Gather and present information about what a particular group or people want from a product* • *Describe and record the purpose of their product and how it will work* • *Identify design features that will appeal to intended users* • *Explain how parts of their product works and why they have been included* • *Develop their own design criteria and use for planning ideas* • *Generate realistic ideas that meet needs of user and take into account availability of resources* • *Share and discuss ideas with others, sometimes creating a joint plan* • *Plan and sequence the main stages of making* • *Choose materials to use based on suitability of their properties* • *Represent ideas in diagrams, annotated sketches and computer-based programmes (where appropriate) that are organised for sharing with others* • *Draw designs from differing views including creating cross-sections*	• *Base, structure, reinforcement* • *Pneumatic* • *Component, circuit, system* • *Allergy* • *Sustainability* • *Landmark*

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		• *Create pattern pieces and prototypes* • *Select and use a full range of materials- constructionmaterials and kits, textiles, food, mechanical and electrical components* • *Choose suitable tools for making whilst explaining whythey should be used and how they are used safely* • *Refer to and modify their design criteria whilst making* • *Follow safety and food hygiene procedures* • *Measure, mark, cut and shape materials andcomponents with increasing accuracy* • *Join, assemble and combine materials and componentswith increasing accuracy* • *Use appropriate finishing techniques, including skillslearnt in Art with some accuracy* • *Use design criteria to evaluate product – identifyingboth strengths and areas for development* • *Consider the views of others, including intended user,whilst evaluating product* • *Prepare simple dishes hygienically and safely, whereneeded with a heat source* • *Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking*	

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Year 5	***Knowledge (Know)***	***Skills (Do)***	***Concepts & Vocabulary (Understand)***
	• *Know how design and technology has changed overtime* • *Know which materials will be appropriate for whichfunctions and uses and which are not* • *Know the environmental factors involved in use ofdifferent materials* • *Know how to make a structure stronger using a base,reinforcement, bracing, girders, struts, rafters, cross bracing and cantilevers* • *Know how to make an increase range of mechanisms including sliders, levers, linkages, springs, discs, hinges,axels, pneumatics, hydraulics, gears, cams, pulleys, andwinders.* • *Know how to use electrical components as part of amechanism* • *Know a range of textile techniques including hand sewing, machine sewing, binding, embroidery, andweaving.* • *Know that food can be classified as sweet and savouryand give examples of ingredients and products which are in each category* • *Know that food production has environmental implications and be able to talk about sustainablechoices* • *Know that people make dietary choices for a variety ofreasons e.g. halal/kosher, vegetarians, vegans etc* • *Know that some people have food allergies and howthese can be managed safely* • *Know that food and drink are needed to provide energyfor a healthy and active lifestyle: identify that people should eat at least 5 portions of fruit and vegetables aday*	• *Priors to design, research the product and explore who has made the product, when it was made and what its purpose is, what the product has been made from and how environmentally friendly the materials are* • *Evaluate the product on design, appearance and use* • *Evaluate the historical approaches to a technological problem and how they have been solved* • *Identify the cost to make the product* • *Understand and gather information about what a particular group or people want from a product, usingquestionnaires, surveys etc* • *Describe the purpose of their product* • *Identify the range of design features and reasons whytheir product will appeal to intended users* • *Explain how parts of their product will work or meet theneeds of users* • *Develop their own design criteria and use for planningideas* • *Generate innovative ideas that meet needs of user andtake into account availability of resources* • *Balance functionality and aesthetics in their design –and explain their choices* • *Share and discuss ideas with others, creating groupplans and allocating tasks where appropriate* • *Record a step by step plan for making* • *Produce lists for the tools, equipment and materialsthey will be using* • *Choose materials to use based on suitability of theirproperties and aesthetic qualities* • *Represent ideas in diagrams, annotated sketches andcomputer-based programmes*	• *Functionality* • *Aesthetics* • *Hydraulic* • *Cam, gear, pulley* • *Plan view, cross section, explodeddiagram*

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		• *Draw their plan in different views with appropriate labels including plan view, cross section and exploded diagram* • *Create pattern pieces and prototypes to minimise waste in the production stage* • *Use a full range of materials- construction materials and kits, textiles, food, mechanical and electrical components* • *Choose suitable tools for making whilst explaining why they should be used* • *Refer to the design criteria whilst making and refine the plan to solve problems* • *Follow safety and food hygiene procedures* • *Measure, mark, cut and shape materials and components accurately* • *Join, assemble and combine materials and components accurately* • *Demonstrate problem solving skills when encountering a mistake or practical problem* • *Use finishing techniques, including skills learnt in Art accurately to produce an aesthetically pleasing product* • *Use design criteria to evaluate product – identifying both strengths and areas for development* • *Consider the views of others, including intended user, whilst evaluating product* • *Prepare simple dishes hygienically and safely, where needed with a heat source* • *Use cooking techniques with increasing independence, such as: chopping, peeling, grating, slicing, mixing, spreading, kneading and baking*	

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Year 6	***Knowledge (Know)***	***Skills (Do)***	***Concepts & Vocabulary (Understand)***
	• *Know how design and technology has changed overtime and the impact this has had* • *Know which materials will be appropriate for whichfunctions and uses and which are not* • *Know the environmental and sustainability factorsinvolved in use of different materials* • *Know how to make a structure stronger using a base,reinforcement, bracing, girders, struts, rafters, cross bracing, members for load bearing and cantilevers* • *Know how to make an increase range of mechanisms including sliders, levers, linkages, springs, discs, hinges,axels, pneumatics, hydraulics, gears, cams, pulleys, and winders.* • *Know how to use electrical components as part of amechanism and combine it with other aspects of a design* • *Know a range of textile techniques including handsewing, machine sewing, binding, embroidery, applique, hemming, seam making and weaving.* • *Know the purpose of a range of ingredients in recipes* *e.g. flavouring, preservative, thickening etc* • *Know that food production has environmental implications and be able to talk about sustainablechoices* • *Know that people make dietary choices for a variety ofreasons e.g. halal/kosher, vegetarians, vegans etc* • *Know that some people have food allergies and howthese can be managed safely* • *Know that food and drink are needed to provide energy for a healthy and active lifestyle: identify that*	• *Ask and answer a range of appropriate questions about a product in preparation for creating their owndesign* • *Produce a report about a product type sharing research into examples and the history of that product* • *Draw conclusions from research to inform their ownplans – explain and justify decisions* • *Carry out a 'market research style' investigation to understand and gather information about what a particular group or people want from a product, usingquestionnaires, surveys etc* • *Generate innovative ideas that meet needs of user* • *Choose materials to use based on suitability of theirproperties and aesthetic qualities* • *Represent ideas in diagrams, a range of annotated sketches from different views and computer based programmes (where appropriate)* • *Create a design proposal that includes:* • *Description of the purpose of their product* • *Design features that will appeal to intended users* • *Explanation of how parts of their product will work* • *Highlight the impact of time, resources and cost withintheir design ideas* • *Record a step by step plan for making* • *Lists for the tools, equipment and materials they willbe using* • *How they are addressing sustainability within theirdesign* • *Share and discuss ideas with others, creatingcooperative plans where appropriate*	• *Market research, focus group* • *Design proposal* • *Load bearing structure* • *flavouring, preservative, thickening* • *Food processing*

	people should eat at least 5 portions of fruit and vegetables a day • *Know that sometimes raw ingredients need to be processed before they can be used in cooking (eg. De-feathering a chicken)*	• *Create pattern pieces and prototypes to ensure waste is reduced* • *Use a full range material - construction materials and kits, textiles, food, mechanical and electrical components* • *Choose suitable tools for making whilst explaining why they should be used* • *Use and refine their design criteria whilst making* • *Follow safety and food hygiene procedures independently* • *Measure, mark, cut and shape materials and components accurately* • *Join, assemble and combine materials and components accurately* • *Demonstrate problem solving skills when encountering a mistake or practical problem* • *Use finishing techniques that involve a number of steps, including skills learnt in Art accurately* • *Use design criteria to evaluate product – looking at quality of end product and design and whether it is fit for its intended purpose* • *Consider the views of others, including intended user, whilst evaluating product* • *Prepare simple dishes hygienically and safely following a recipe, where needed with a heat source* • *Create a recipe for a dish that they have created using the conventions of this text type appropriately* • *Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking*	