Holy Cross RC Primary School
DT Skills Progression

At Holy Cross, our DT progression map is divided into Year groups. This is subdivided into skills that children will acquire and the subject knowledge that they will gain. It runs on a circular model with each year group building on the skills and knowledge that children have acquired in previous year groups.

Holy Cross RC Primary School
DT Skills Progression

		Year 1
		Option 1: Stable structures
Skills	Design	• Thinking about what others might want from a design. • Beginning to recognise how products and designs in the world around us solve certain needs. • Considering who they are designing for – identifying the user. • Stating what they intend to make and why – identifying the purpose. • Talking about ideas, with purpose and user in mind. • Talking about existing products when generating ideas. • Using basic drawing skills to communicate ideas.
	Make	• Choosing between a small number of materials, ingredients or components. • Explaining their choices based on personal experiences. • Requesting equipment appropriate to the purpose. (e.g. scissors for cutting, glue for joining) • Beginning to use objects with a fixed width or length to create even spacing of markings or cuts (e.g. a lolly stick). • Refining their grip to cut competently and confidently. • Cutting straight lines and evenly spaced lines. • Beginning to cut large shapes and thicker materials like card.
	Evaluate	• Discussing existing products, saying what they like about them. • Comparing two products and discuss which is better for a specific purpose. • Saying what they like about their peers' designs and products. • Accepting feedback and understanding it is meant to improve their work.
Knowledge	Technical	• Recognising that different structures are used for different purposes. • Exploring the features of structures. • Describing structures as buildings or freestanding structures. • Making stable structures from card. • Creating supporting structures to aid stability. • Using stable objects like cylinders to create structures.
	Additional	• To know that the 'user' is the person who will use the product. • To know that different users may want different things from a design. • To know that who they are designing for makes a difference to what they design. • To know that the purpose is what something is for. • To know that existing products can help when deciding what to design. • To know that drawings are a way to explain ideas. • To know that a plan is deciding what to do first and next. • To know that different equipment does different things. • To know the names of common pieces of equipment. • To know that some products will be better than others. • To know that their ideas or products can be made better. • To know that their ideas can makes someone else's work better. • To know that other people's ideas can help make their work better. • To know that a structure is something that has been made and put together. • To know that stable structures do not topple. • To know that shapes and structures with wide, flat bases or legs are the most stable. • To know that adding weight to the base of a structure can make it more stable.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge

Mechanisms / mechanical systems

Year 1

Option 1: Matching slider game

Skills	**Design**	• Thinking about what others might want from a design. • Beginning to recognise how products and designs in the world around us solve certain needs. • Considering who they are designing for – by identifying the user. • Stating what they intend to make and why – by identifying the purpose. • Talking about ideas with purpose and user in mind. • Talking about existing products when generating ideas. • Creating mock-ups to communicate designs.
	Make	• Planning more than one step ahead. • Choosing between a small number of materials, ingredients or components. • Explaining their choices based on personal experiences. • Requesting equipment appropriate to the purpose. (e.g. scissors for cutting, glue for joining). • Explaining in simple terms why certain tools must be handled carefully. • Following and recalling simple safety instructions. • Beginning to use objects with a fixed width or length to create even spacing of markings or cuts. (e.g. a lolly stick). • Refining their grip to cut competently and confidently. • Cutting straight lines and evenly spaced lines. • Beginning to cut large shapes and thicker materials like card. • Puncturing holes. • Applying masking tape to fix something in place or join to edges. • Using tools, like scissors, to create shapes. • Beginning to cut large shapes and thicker materials like card.
	Evaluate	• Discussing existing products, saying what they like about them. • Discussing how their products could be improved based on personal preferences. • Saying what they like about their peers' designs and products. • Accepting feedback and understanding it is meant to improve their work.
Knowledge	**Technical**	• Recognising and exploring everyday objects that have mechanisms. • Recognising everyday objects that use a slider mechanism (eg. drawers, sliding doors, paper trimmer).
	Additional	• To know that the 'user' is the person who will use the product. • To know that different users may want different things from a design. • To know that designers usually design and make something to solve a problem. • To know that who they are designing for makes a difference to what they design. • To know that the purpose is what something is for. • To know that a mock-up is a model of how something works. • To know that choosing different materials or components will have an effect on what their product does or looks like. • To know that different equipment does different things. • To know the names of common pieces of equipment. • To know that some tools are sharp like scissors and knives. • To know that following instructions helps with safety. • To know that cutting in a straight line can be helpful when making. • To know that some products will be better than others. • To know that their ideas or products can be made better. • To know that many things that move have parts inside to help them work. • To know that mechanisms usually limit unwanted movement. • To know that a slider mechanism moves an object in a straight line (eg. left/right, up/down). • To know that sliding mechanisms are designed to keep movement in one direction (eg. using guides/rails etc).

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Cooking and nutrition		
		EYFS (Reception)	Year 1	Year 2
		Soup	Smoothies	Balanced diet
Skills	Design	• Designing a soup recipe as a class. • Designing soup packaging.	• Designing smoothie carton packaging by-hand. • Learning where and how fruits and vegetables grow.	• Designing three wrap ideas.
	Make	• Chopping plasticine safely. • Chopping vegetables with support.	• Chopping fruit and vegetables safely to make a smoothie. • Juicing fruits safely to make a smoothie. • Identifying if a food is a fruit.	• 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. • Spreading soft foods to make a wrap. • Identifying the five food groups. • Learning about balanced diet.
	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.	• 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.	• Describing appearance, smell and taste. • Taste and evaluating different food combinations. • Describing the information that should be included on a label.
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.	• To know that a blender is a machine which mixes ingredients together into a smooth liquid. • To know that a fruit has seeds and a vegetable does not. • 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.	• To know that 'diet' means the food and drink that a person or animal usually eats. • To know 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 know 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. • To know how to cut, grate, snip and spread to prepare foods. • To know how to review and give a score to evaluate.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Structures
		Year 2
		Option 1: A chair for a bear
Skills	Design	• Using a simple design brief that outlines the intended use, target user, and key features of the product, to create simple design criteria. • Creating ideas with design criteria in mind. • Referring to specific parts of existing products when generating ideas.
	Make	• Choosing materials, ingredients or components from a wider range of materials, ingredients or components. • Explaining their choices based on the properties of materials and components. • Looking for ways to make cutting easier, like turning the material they are cutting, not fully closing scissors etc. • Choosing known geometric shapes when making. • Beginning to shape objects to improve how they work.
	Evaluate	• Discussing a range of existing products and saying what they like and dislike about them. • Comparing a range of products and explaining why some better meet different design criteria than others. • Evaluating their ideas and creations against simple design criteria.
Knowledge	Technical	• Recognising that different structures are used for different purposes. • Exploring the features of structures. • Making stable structures from card. • Creating supporting structures to aid stability. • Using stable objects like cylinders to create structures. • Building a strong and stiff structure by folding paper. • Folding to strengthen or stiffen. • Comparing the stability of different shapes. • Identifying the weakest part of a structure.
	Additional	• To know that a design brief helps to decide what to make. • To know that design criteria are the steps for making a product successful. • To know that design criteria help when thinking of ideas. • To know that different products work in different ways and have parts that make them work. • To know some properties of materials like hard, soft, flexible, waterproof, strong etc. • To know the names of some geometric shapes, triangle, pyramid, square, cube, circle, sphere. • To know that existing products can be evaluated against design criteria. • To know that design criteria help to decide if their product is a success. • To know that improve means to make something better. • To know that a structure is something that has been made and put together. • To know 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 'strong' structure is one which does not break easily. • To know that a 'stiff' structure or material is one which does not bend easily.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Textiles		
		EYFS: Reception	Year 1	Year 2
		Bookmarks	Puppets	Pouches
Skills	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.	• Designing a pouch.
	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 steps for construction.	• 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	• Reflecting on a finished product and comparing to their design.	• Reflecting on a finished product, explaining likes and dislikes.	• 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 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.	• 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.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Cooking and nutrition		
		EYFS (Reception)	Year 1	Year 2
		Soup	Smoothies	Balanced diet
Skills	Design	• Designing a soup recipe as a class. • Designing soup packaging.	• Designing smoothie carton packaging by-hand. • Learning where and how fruits and vegetables grow.	• Designing three wrap ideas.
	Make	• Chopping plasticine safely. • Chopping vegetables with support.	• Chopping fruit and vegetables safely to make a smoothie. • Juicing fruits safely to make a smoothie. • Identifying if a food is a fruit.	• 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. • Spreading soft foods to make a wrap. • Identifying the five food groups. • Learning about balanced diet.
	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.	• 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.	• Describing appearance, smell and taste. • Taste and evaluating different food combinations. • Describing the information that should be included on a label.
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.	• To know that a blender is a machine which mixes ingredients together into a smooth liquid. • To know that a fruit has seeds and a vegetable does not. • 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.	• To know that 'diet' means the food and drink that a person or animal usually eats. • To know 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 know 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. • To know how to cut, grate, snip and spread to prepare foods. • To know how to review and give a score to evaluate.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Textiles	
		Year 3	Year 4
		Cross-stitch and appliqué Cushions or Egyptian collars	Fastenings
Skills	Design	• Designing and making a template from an existing cushion and applying individual design criteria.	• Writing design criteria for a product, articulating decisions made. • Designing a personalised book sleeve.
	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 (Cushions) **or** embellishing the collars based on design ideas (Egyptian collars).	• 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	• Evaluating an end product and thinking of other ways in which to create similar items.	• 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 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.	• 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.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Mechanisms / mechanical systems
		Year 3
		Option 1: *New* Pneumatic toys
Skills	Design	• Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences. • Taking part in structured idea blasting sessions. • Coming up with more ideas and considering the feasibility of their ideas in the classroom. • Developing drawing and sketching skills with a focus on clarity and simplicity. • Developing designs by adding detail and justifications about materials, tools, methods. • Beginning to recognise the benefit of a range of diagram types or prototypes to communicate ideas. (eg. sketches, cross-sectional diagram, thumbnail sketches and exploded diagrams).
	Make	• Selecting equipment required for a series of tasks based on the plan. Explain why each piece is suitable for each stage. • Suggesting simple safety rules based on their understanding of tool dangers. • Participating in discussions about classroom safety procedures. • Cutting out more complex shapes accurately. • Handle different sizes and types of scissors with confidence. • Using PVA glue to join corrugated card and light wood (e.g. balsa wood). • Choosing shapes to suit the function of a product. • Painting or colouring precisely to improve the finish. • Making facades from a range of materials. • Sealing edges with tape to cover gaps in joins.
	Evaluate	• Analysing why specific products, designers or inventors are successful. • Evaluating their designs by comparing them against design criteria and considering feedback from peers to suggest improvements. • Explaining why they think certain aspects of a peer's design are effective or why they suggested specific improvements. • Reflecting on feedback to decide if and how it could be used to improve future iterations.
Knowledge	Technical	• Beginning to understand how mechanisms work. • Recognising pneumatic systems in everyday objects (e.g. car boot, adjustable chair.)
	Additional	• To know that a problem or need is something that a designer can help to solve. • To know that extra information on drawings or diagrams can help the user understand a design or idea. • To know that thumbnail sketches are less detailed quick sketches. • To know that a cross-sectional diagram shows the inside of a product. • To know that an exploded diagram shows how the parts of a product fit together. • To know that different pieces of equipment will be used at different stages in a plan. • To know that different tools and equipment have different dangers. • To know that scissors are useful for cutting out complex shapes. • To know that designers and inventors create products. • To know that choices of materials and equipment can affect the final product. • To know that feedback is ideas and suggestions from other people that can help improve their work. • To know that they can choose to use feedback or not. • To understand that a mechanical system can allow us to move something more easily. • To know that mechanical systems have more than one mechanism that moves to make them work. • To know that mechanical systems are often hidden in products to make them look more appealing. • To know that pushing air can be used to move a mechanism. • To know that pivots can be used to create more movement in the mechanical system. • To know that a combination of mechanisms can improve a product.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Cooking and nutrition	
		Year 3	Year 4
		Eating seasonally	Adapting a recipe
Skills	Design	• Describing how climate affects where foods grow.	• Designing a biscuit within a given budget. • Conducting market research.
	Make	•Identifying seasonal ingredients from the UK. •Following the instructions within a recipe. • Tasting seasonal ingredients. • Peeling foods by hand or with a peeler. • Cutting ingredients safely. • Choosing ingredients based on a design brief.	• Following a baking recipe. • Understanding safety and hygiene rules. • Adapting a recipe.
	Evaluate	• Describing the texture and flavour of ingredients. • Describing the benefits of seasonal fruits and vegetables and the impact on the environment.	• Evaluating an adapted recipe. • Evaluating and comparing a range of products. • Suggesting modifications.
Knowledge		• To know that seasonal means foods that grow in a given season in a given country. • To know some seasonal foods that grow in the UK and what season they grow in. • To know that eating seasonal foods can have a positive impact on the environment. • To know how to describe the flavour and texture of foods. • To know how to cut a peel safely. • To know that the appearance of food is as important as taste. • To know that similar coloured fruits and vegetables often have similar nutritional benefits.	• 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 know the importance of budgeting while planning ingredients for a recipe. • To know that products often have a target audience.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Structures	
		Year 4	
		Option 1: Helmets	Option 2: Pavilions
Skills	Design	• Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences. • Noticing simple problems or needs in everyday life. • Developing drawing and sketching skills with a focus on clarity and simplicity.	• 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	• Selecting materials, components or ingredients based on their form as well as their functional properties. • Explaining choices with regard to function and form. • Choosing shapes to suit the function of a product.	• 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 designs by comparing them against design criteria. • Considering feedback from peers to suggest improvements. • Evaluating how effective the chosen materials were in fulfilling the design brief.	• Evaluating structures made by the class. • Describing what characteristics of a design and construction made it the most effective. • Considering effective and ineffective designs.
Knowledge	Technical	• Strengthening structures by layering materials (lamination). • Strengthening structures by ribbing. • To know how some different structures are built. • To know that structures can be strengthened by manipulating materials and shapes. • To know a shell structure is a hollow shape with a thin outer layer.	• 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 form is the look and shape of something. • To know function is what something does and how it works. • To know that creating accurate shapes improves how they look and sometimes their function. • To know choices of materials and equipment can affect the final product.	• 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.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Mechanisms / mechanical systems
		Year 5
		New Gears and pulleys
Skills	Design	• Noticing wider-reaching problems or needs in the community. • Identifying a wide range of needs and potential barriers through market research. • Writing more complex problem statements that consider multiple factors and constraints. • Creating more complex design criteria that require considering detailed user needs, environmental impact, materials and cost. • Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas' practicality and originality. • Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. • Using a series of prototypes to refine and improve their designs.
	Make	• Consistently apply safety instructions. • Select appropriate scissors to handle delicate cutting tasks and challenging materials. • Cutting patterns and drawings accurately. • In supervised groups, using hot glue guns safely. • Recognising that hot glue is useful for joining materials that need a strong bond that sets quickly. • Choosing PVA glue over hot glue for its safety when joining materials in less intensive projects.
	Evaluate	• Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design choices impact these aspects. • Assessing their designs against a more complex set of design criteria that includes functionality, aesthetics, user experience, sustainability and cost. • Considering alternative materials, tools or techniques that could enhance the product. • Providing feedback that is helpful, specific, and encouraging. • Incorporating feedback from peers or users improve their product further, explaining the changes they made and the impact they had.
Knowledge	Technical	• That mechanical systems that use gears in everyday objects (eg bicycle, clock). • That gears and pulleys allow us to transfer movement and force from one part of a mechanical system to another. • That gears allow us to increase the output of a mechanism.
	Additional	• That market research is a way of collecting information about problems or needs. • That constraints are things that might stop our ideas being successful. • That original and innovative ideas are different from what has been made before. • That annotations are detailed labels and comments on diagrams. • That risks are things that might happen. • That hot glue creates a strong bond quickly. • That is often better to choose safer equipment. • That sustainability means thinking about the materials that were used to make a product and how the product was made. • That their final product can still be improved by different materials or techniques. • That evaluating their designs in detail will help them understand its successful and less successful parts. • That feedback should be positive, helpful and specific. • That explaining how they used feedback to improve their design can help them create better products in the future.

Holy Cross RC Primary School
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Progression of skills and knowledge		Textiles
		Year 5
		Stuffed toys
Skills	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.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Digital world (KS2 only)	
		Year 5	Year 6
		Monitoring devices	Navigating the world
Skills	Design	• Researching (books, internet) for a particular (user's) animal's needs. • Developing design criteria based on research. • Generating multiple housing ideas using building bricks. • Understanding what a virtual model is and the pros and cons of traditional and CAD modelling. • Placing and manoeuvring 3D objects, using CAD. • Changing the properties of, or combining one or more 3D objects, using CAD.	• Writing a design brief from information submitted by a client. • Developing design criteria to fulfil the client's request. • Considering and suggesting additional functions for my navigation tool. • Developing a product idea through annotated sketches. • Placing and manoeuvring 3D objects, using CAD. • Changing the properties of, or combining one or more 3D objects, using CAD.
	Make	• Understanding the functional and aesthetic properties of plastics. • Programming to monitor the ambient temperature and coding an (audible or visual) alert when the temperature rises above or falls below a specified range.	• Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo). • Explaining material choices and why they were chosen as part of a product concept. • Programming an N,E, S, W cardinal compass.
	Evaluate	• Stating an event or fact from the last 100 years of plastic history. • Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices. • Explaining key functions in my program (audible alert, visuals). • Explaining how my product would be useful for an animal carer including programmed features.	• Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. • Developing an awareness of sustainable design. • Identifying key industries that utilise 3D CAD modelling and explaining why. • Describing how the product concept fits the client's request and how it will benefit the customers. • Explaining the key functions in my program, including any additions. • Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. • Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch. • Demonstrating a functional program as part of a product concept pitch.
Knowledge	Technical	• To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record. • To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose. • To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met.	• To know that accelerometers can detect movement. • To understand that sensors can be useful in products as they mean the product can function without human input.
	Additional	• To understand key developments in thermometer history. • To know events or facts that took place over the last 100 years in the history of plastic, and how this is changing our outlook on the future. • To know the 6Rs of sustainability. • To understand what a virtual model is and the pros and cons of traditional vs CAD modelling.	• To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request. • To know that 'multifunctional' means an object or product has more than one function. • To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Electrical systems (KS2 only)	
		Year 5	Year 6
		Option 2: Doodlers	Steady hand game
Skills	Design	• Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. • Developing design criteria based on findings from investigating existing products. • Developing design criteria that clarifies the target user.	• Designing a steady hand game - identifying and naming the components required. • Drawing a design from three different perspectives. • Generating ideas through sketching and discussion. • Modelling ideas through prototypes. • Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'.
	Make	• Altering a product's form and function by tinkering with its configuration. • Making a functional series circuit, incorporating a motor. • Constructing a product with consideration for the design criteria. • Breaking down the construction process into steps so that others can make the product.	• Constructing a stable base for a game. • Accurately cutting, folding and assembling a net. • Decorating the base of the game to a high quality finish. • Making and testing a circuit. • Incorporating a circuit into a base.
	Evaluate	• Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. • Determining which parts of a product affect its function and which parts affect its form. • Analysing whether changes in configuration positively or negatively affect an existing product. • Peer evaluating a set of instructions to build a product.	• Testing own and others finished games, identifying what went well and making suggestions for improvement. • Gathering images and information about existing children's toys. • Analysing a selection of existing children's toys.
Knowledge	Technical	• To know that series circuits only have one direction for the electricity to flow. • To know when there is a break in a series circuit, all components turn off. • To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. • To know a motorised product is one which uses a motor to function.	• To know that batteries contain acid, which can be dangerous if they leak. • To know the names of the components in a basic series circuit, including a buzzer.
	Additional	• To know that product analysis is critiquing the strengths and weaknesses of a product. • To know that 'configuration' means how the parts of a product are arranged.	•To know that 'form' means the shape and appearance of an object. •To know the difference between 'form' and 'function'. •To understand that 'fit for purpose' means that a product works how it should and is easy to use. • To know that form over purpose means that a product looks good but does not work very well. • To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind. • To understand the diagram perspectives 'top view', 'side view' and 'back'.

Holy Cross RC Primary School
DT Skills Progression

Progression of skills and knowledge		Cooking and nutrition	
		Year 5	Year 6
		Developing a recipe	Come dine with me
Skills	Design	• Researching existing recipes. • Suggesting alternative ingredients. • Designing a jar label.	• Writing a recipe, explaining the key steps, method and ingredients. • Including facts and drawings from research undertaken.
	Make	• Writing an alternative recipe. • Understanding cross-contamination. • Using preparation skills. • Making a developed recipe.	• Following a recipe, including using the correct quantities of each ingredient. • Adapting a recipe based on research. • Working to a given timescale. • Working safely and hygienically with independence.
	Evaluate	• Explaining the farm to fork process. • Analysing nutritional content.	• Evaluating a recipe, considering: taste, smell, texture and origin of the food group. • Taste testing and scoring final products. • Suggesting and writing up points of improvements in productions. • Evaluating health and safety in production to minimise cross contamination.
Knowledge		• To know that beef comes from cows reared on farms. • To know that recipes can be adapted to suit nutritional needs and dietary requirements. • To know that nutritional information is found on food packaging. • To know that coloured chopping boards can prevent cross-contamination. • To know that food packaging serves many purposes.	• To know that 'flavour' is how a food or drink tastes. • To know that many countries have 'national dishes' which are recipes associated with that country. • To know that 'processed food' means food that has been put through multiple changes in a factory. • To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. • To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).