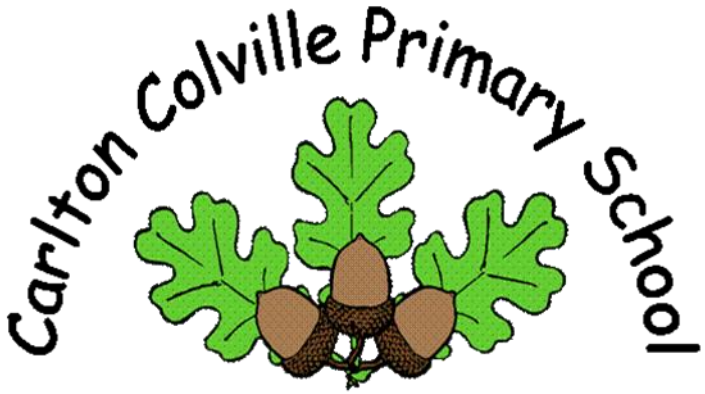

Design Technology

Assessment Document

Design and Technology - Milestone 1

Learning Objective		Key Indicators	Basic	Advancing	Deep
To master practical skills	Food	Cut, peel or grate ingredients safely and hygienically.	With the support of a teacher, ingredients are prepared safely and hygienically.	There is a growing awareness of safety and hygiene procedures when preparing food.	There is a good understanding of the need to work safely and hygienically when preparing food.
		Measure or weigh using measuring cups or electronic scales.	With the support of a teacher, weighing and measuring is accurate.	There is a growing ability to weigh and measure accurately.	There is a good understanding of how to weigh and measure accurately using a range of scales.
	Materials	Cut materials safely using tools provided.	With the support of a teacher, materials are cut safely.	There is a growing ability to cut materials safely.	There is a good level of control of tools so that materials are cut safely.
		Measure and mark out to the nearest centimetre.	When supported by a teacher, maths skills are sometimes used to help measure and mark to the nearest centimetre.	Maths skills are often used to help measure and mark to the nearest centimetre.	There is a good application of maths skills to help measure and mark to the nearest centimetre.
		Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).	During structured activities, a range of cutting and shaping techniques are used.	There is a growing use of a range of cutting and shaping techniques.	There is a wide use of a range of cutting and shaping techniques.
		Demonstrate a range of joining techniques (such as gluing, using hinges or combining materials to strengthen).	During structured activities, a range of joining techniques are used.	There is a growing use of a range of joining techniques.	There is a wide use of a range of joining techniques.

To master practical skills continued overleaf

Design and Technology - Milestone 1

Learning Objective		Key Indicators	Basic	Advancing	Deep
To master practical skills	Textiles	Shape textiles using templates.	With the support of a teacher, textiles are shaped using templates.	Templates are beginning to be created and used to shape textiles.	Templates are created to a good standard and used to shape textiles effectively.
		Join textiles using running stitch.	With the support of a teacher, textiles are joined with a basic running stitch.	A basic running stitch is used well to join textiles.	A controlled running stitch is used to securely join textiles.
		Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).	With the support of a teacher, a number of decoration techniques are experienced.	A growing number of decoration techniques are used.	Effective decoration techniques are chosen and applied to good effect.
	Electrical and electronics	Diagnose faults in battery-operated devices (such as low battery, water damage or battery terminal damage).	With the support of a teacher, a range of common faults are identified.	A growing range of faults are correctly identified.	A wide range of faults are identified, and possible solutions suggested.
	Construction	Use materials to practise drilling, screwing, gluing and nailing materials to make products (such as wheeled vehicles).	With the support of a teacher, materials are combined to make products.	With growing independence, materials are combined to make products.	Good choices of materials and how to combine them are made when making a wide range of products.
	Mechanics	Create products using levers and winding mechanisms.	With the support of a teacher, products using levers and winding mechanisms are made.	With growing independence, and a developing understanding of mechanisms, products using levers and winding mechanisms are made.	With a high level of independence and a good understanding of mechanisms, good-quality products using levers and winding mechanisms are made.

Design and Technology - Milestone 1

Learning Objective	Key Indicators	Basic	Advancing	Deep
To design, make, evaluate and improve	Design products that have a clear purpose and an intended user.	When supported by a teacher, designs to meet a purpose are created.	With growing independence, designs that have a clear purpose and intended user are created.	With a high level of independence and a good understanding that designs require a purpose and user, very good designs are created.
	Make products, refining the design as work progresses.	When encouraged by a teacher, designs are improved as the making process develops.	Generally, good-quality products are made by a process of refinement during the making process.	High-quality products are made through a process of constant refinement throughout the making process.
To take inspiration from design throughout history	Explore objects and designs to identify likes and dislikes of the designs.	With structured activities, designs of others are evaluated to identify likes and dislikes.	With growing independence and a growing understanding of design features, likes and dislikes of the designs of others are identified.	With a high level of independence and a good understanding of design features, likes and dislikes are identified, explained and justified with examples.
	Suggest improvements to existing designs.	When prompted, basic improvements to existing designs are suggested.	Suitable and appropriate improvements to existing designs are generally identified.	Thoughtful and well-reasoned improvements to existing designs are identified.

Design and Technology - Milestone 2

Learning Objective		Key Indicators	Basic	Advancing	Deep
To master practical skills	Food	Prepare ingredients hygienically using appropriate utensils.	When reminded, appropriate utensils are chosen to safely and hygienically prepare food.	Appropriate utensils are generally chosen to safely and hygienically prepare food.	Appropriate utensils are chosen to safely and hygienically prepare food, with clear explanations for the choices made.
		Measure ingredients to the nearest gram accurately.	With support from a teacher, accurate measurement, to the nearest gram, is experienced.	There is generally accurate measurement to the nearest gram.	There is accurate measurement to the nearest gram using a variety of scales.
	Materials	Cut materials accurately and safely by selecting appropriate tools.	When reminded, appropriate tools are chosen to safely cut materials.	Appropriate tools are generally chosen to safely cut materials.	Appropriate utensils are chosen to safely cut materials, with clear explanations for the choices made.
		Measure and mark out to the nearest millimetre.	With support from a teacher, accurate measurement and marking, to the nearest millimetre, is experienced.	There is generally accurate measurement and marking to the nearest millimetre.	There is accurate measurement and marking to the nearest millimetre using a variety of scales.
		Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut-outs).	With support from a teacher, appropriate techniques are used to cut and shape materials.	Appropriate techniques are generally chosen to cut and shape materials.	Appropriate techniques are chosen to cut and shape materials, with clear explanations for the choices made.
		Select appropriate joining techniques.	When reminded, appropriate joining techniques are used.	Appropriate joining techniques are generally selected and used well.	Appropriate joining techniques are selected and used to good effect, with reasons for choices clearly explained.

Design and Technology - Milestone 2

Learning Objective		Key Indicators	Basic	Advancing	Deep
To master practical skills	Textiles	Understand the need for a seam allowance.	When demonstrated by a teacher, and support provided, appropriate allowances are made when joining fabrics.	Generally, appropriate allowances for joining fabrics are used.	Accurate and well-planned allowances for joining fabrics are used.
		Join textiles with appropriate stitching.	When demonstrated by a teacher, appropriate stitching is attempted with some good effects.	Generally, stitching is appropriate to the product and effective.	Confident and carefully chosen stitching, suitable for the product's purpose, is well executed.
		Select the most appropriate techniques to decorate textiles.	When reminded, appropriate techniques are used to decorate textiles.	Generally, interesting and appropriate techniques are used to decorate textiles.	Excellent choices of appropriate techniques provide interesting and eye-catching textile decorations.
	Electricals and electronics	Create series and parallel circuits.	When reminded, knowledge of science is applied to create series and parallel circuits in products.	Generally, science knowledge is applied well to create series and parallel circuits in products.	Science knowledge is readily applied to good effect in creating series and parallel circuits in products.
	Construction	Choose suitable techniques to construct products or to repair items.	When reminded by a teacher, suitable techniques are used to construct products or repair items.	Suitable techniques are generally used to construct or repair items.	Suitable techniques are chosen and justified when constructing or repairing items.
	Mechanics	Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).	When reminded, knowledge of science is applied to creating mechanism products.	Generally, knowledge of science is applied to creating mechanism products.	Knowledge of science is readily applied when creating mechanism products.

Design and Technology - Milestone 2

Learning Objective	Key Indicators	Basic	Advancing	Deep
To design, make, evaluate and improve	Design with purpose by identifying opportunities to design.	During structured activities, opportunities for design are realised.	Generally, there is a good understanding of opportunities for design.	Excellent examples of suggestions for design show an in-depth understanding of the need for design.
	Make products by working efficiently (such as by carefully selecting materials).	When supported by a teacher, appropriate materials are selected.	Planning of workflows and careful selection of materials means work is generally carried out efficiently.	Very efficient workflows and well-reasoned choices of materials make work very efficient.
	Refine work and techniques as work progresses, continually evaluating the product design.	When encouraged, techniques are refined throughout a project to improve the design.	Generally, designs are evaluated and refined throughout a project.	Designs are continually evaluated and improved throughout a project, resulting in high-quality products.
To take inspiration from design throughout history	Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.	With support from a teacher, some of the most notable designers' work is examined to provide inspiration for ideas.	A growing knowledge of a range of notable designers is used to provide inspiration for designs.	An in-depth knowledge of some notable designers provides inspiration and ideas for designs.
	Improve upon existing designs, giving reasons for choices.	With support from a teacher, existing designs are evaluated and improvements made.	Generally, some opportunities for improving existing designs are made, giving reasons for choices.	Many good opportunities for developing existing designs are noticed and acted upon.

Design and Technology - Milestone 3

Learning Objective		Key Indicators	Basic	Advancing	Deep
To master practical skills	Food	Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).	There is some awareness of the principles and practices of safe food storage and handling.	Science knowledge is applied to the safe storage and handling of ingredients.	A thorough scientific understanding of micro-organisms is rigorously applied to the practices of storage and handling of ingredients.
		Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.	When reminded, mathematical knowledge is applied to accurately calculate ratios of ingredients.	Mathematical knowledge is generally applied to calculate ratios of ingredients.	Knowledge of mathematics is readily applied to calculate ratios of ingredients.
		Demonstrate a range of baking and cooking techniques.	When guided, a range of baking and cooking techniques is demonstrated.	A developing range of baking and cooking techniques is demonstrated.	A good range of baking and cooking techniques is demonstrated.
		Create and refine recipes, including ingredients, methods, cooking times and temperatures.	With support from a teacher, a range of recipes are created.	A developing range of interesting recipes is created.	A wide repertoire of recipes with interesting combinations of ingredients is created.
	Materials	Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).	There are some good examples of precision cutting.	There are many good examples of precision cutting using a growing range of cutting implements.	There are widespread examples of precision cutting using a wide variety of cutting implements.
		Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).	When reminded, the qualities of materials are considered when selecting tools.	The properties of materials are generally considered in choosing tools.	An in-depth understanding of the properties of materials is used to carefully select appropriate tools.

To master practical skills continued overleaf

Design and Technology - Milestone 3

Learning Objective		Key Indicators	Basic	Advancing	Deep
To master practical skills	Textiles	Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).	There are some good examples of effective joins.	There is a growing range of examples of effective joining techniques that show control and some precision.	There is a wide range of very effective joining techniques that show a high level of precision and control.
		Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).	There are some good examples of art skills being used to provide decoration.	There are many good examples of art skills being applied to good effect to provide visual and tactile decoration.	Well-chosen art skills are used to create eye-catching decoration.
	Electricals and electronics	Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistor and chips).	With support, and reminders of science knowledge, a range of circuits is created and used in products.	Science knowledge is generally applied to the design process to create products that employ a range of electronic components.	Science knowledge is readily applied to the design process, creating high-quality products that employ a broad range of electronic components.
	Construction	Develop a range of practical skills to create products and repair items (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).	With support, a range of practical skills are emerging to help create or repair products.	A growing range of practical skills are used effectively to make or repair products.	A wide range of practical skills are put to very effective use to make or repair a wide variety of products.
	Mechanics	Convert rotary motion to linear using cams.	With support, cams are created.	A range of differently shaped cams are created.	Combinations of differently shaped cams are used to create interesting and useful movement.
		Use innovative combinations of electronics (or computing) and mechanics in product designs.	With support, combinations of design components are used in product designs.	There is some interesting experimentation with combinations of design components in product designs.	There are some innovative combinations of design components in product designs.

Design and Technology - Milestone 3

Learning Objective	Key Indicators	Basic	Advancing	Deep
To design, make, evaluate and improve	Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).	With guidance, products are designed with some reference to the user experience.	Generally, the user experience is used as a rationale for design choices.	The experience of the user drives the design process. There are many excellent examples and explanations of how choices improve the user experience.
	Make products through stages of prototypes, making continual refinements.	With support, prototypes are made and later developed.	Generally improvements are continual throughout the making process, with initial prototypes often changed radically through a number of refinements.	Initial prototypes and alternative designs are thoroughly explored and explained. Refinements are continually made throughout the making process.
	Ensure products have a high-quality finish, using art skills where appropriate.	When reminded, a high-quality finish is achieved by applying art skills.	Art skills are generally applied and, along with attention to detail, create a high-quality finish.	Impeccable attention to detail and the extremely effective application of art skills create a professional quality finish.
To take inspiration from design throughout history	Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.	With support, elements of design from notable designers are incorporated into designs.	Generally, there are some well-reasoned choices for combining elements from a range of designers.	An in-depth knowledge of some designers' work is reflected in some striking designs. The rationale and background to the design ideas are explained thoughtfully.
	Create innovative designs that improve upon existing products.	There are some good examples of designs that improve upon existing products.	There is a growing range of examples of designs that improve upon existing products.	There are some notable examples of how the design of an existing product has been greatly improved.
	Evaluate the design of products so as to suggest improvement to the user experience.	When reminded, evaluations are carried out throughout and at the end of the design process.	Evaluations are generally ongoing and thorough. They relate to the user experience.	The user experience drives critical self-evaluation and helps to identify current and future improvements.