

Milby Primary School



Design and Technology - Progression of skills

Aspect	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Use pictures and words to convey what they want to design/make. Use kits/recycled materials to model ideas. Describe their models.	Use pictures and words to convey what they want to design/make. Propose more than one idea for their product. Use kits/recycled materials to model ideas. Use drawings to record ideas. Add notes/labels to drawings. Use ICT to communicate ideas where appropriate.	Use pictures and words to convey what they want to design/make. Propose more than one idea for their product. Use kits/recycled materials to model ideas. Use drawings to record ideas. Add notes/labels to drawings. Use ICT to communicate ideas where appropriate.	Develop more than one design or adaptation of design. Plan a sequence of actions to make a product. Record the plan using drawings/annotated sketches. Begin to use cross-sectional/exploded diagrams. Use prototypes to develop/share ideas. Think ahead and decide upon tools/materials/ingredients etc.	Develop more than one design or adaptation of design. Plan a sequence of actions to make a product. Record the plan using drawings/annotated sketches. Begin to use cross-sectional/exploded diagrams. Use prototypes to develop/share ideas. Think ahead and decide upon tools/materials/ingredients etc.	List tools needed before starting the activity. Plan the sequence of work. Record ideas using annotated diagrams. Use models, kits and drawings to formulate design ideas. Combine modelling and drawing to refine ideas. Devise step by step plans that can be read or followed by someone else.	List tools needed before starting the activity. Plan the sequence of work. Record ideas using annotated diagrams. Use models, kits and drawings to formulate design ideas. Combine modelling and drawing to refine ideas. Devise step by step plans that can be read or followed by someone else. Use exploded and/or cross-sectional

		Describe their models and drawings of ideas	Describe their models and drawings of ideas	Propose realistic suggestions as to how they can achieve their design ideas. Consider aesthetic qualities of materials/ingredients chosen.	Propose realistic suggestions as to how they can achieve their design ideas. Consider aesthetic qualities of materials/ingredients chosen.	Use exploded and/or cross-sectional diagrams to communicate ideas. Sketch and model alternative ideas. Decide which design idea to develop.	diagrams to communicate ideas. Sketch and model alternative ideas. Decide which design idea to develop.
Make	Select materials needed to make their model. Select and name the appropriate tools needed. Explain what they are making.	Discuss their work as it progresses. Select materials/ingredients from a limited range that will meet the design criteria Select and name the appropriate tools needed. Explain what they are making. Explain which materials/ingredients they are using and why. Name the tools they are using. Describe what they need to do next.	Discuss their work as it progresses. Select materials/ingredients from a limited range that will meet the design criteria Select and name the appropriate tools needed. Explain what they are making. Explain which materials/ingredients they are using and why. Name the tools they are using. Describe what they need to do next.	Where appropriate prepare templates for their design. Cut slots. Select from a range of tools for cutting, shaping, joining and finishing. Use tools with accuracy. Select appropriate techniques for different parts of the process. Select materials according to their functional properties. Plan the stages of making. Use appropriate finishing techniques.	Prepare pattern pieces as templates for their design. Cut slots. Select from a range of tools for cutting, shaping, joining and finishing. Use tools with accuracy. Select appropriate techniques for different parts of the process. Select materials according to their functional properties. Plan the stages of making. Use appropriate finishing techniques.	Make prototypes. Develop one idea in depth. Use researched information to inform decisions. Produce detailed lists of ingredients/ components/ materials and tools. Where appropriate use a computer to model ideas. Select from and use a wide range of tools. Cut accurately and safely to a marked line. Use appropriate finishing techniques for the project.	Make prototypes. Develop one idea in depth. Use researched information to inform decisions. Produce detailed lists of ingredients/ components/ materials and tools. Where appropriate use a computer to model ideas. Select from and use a wide range of tools. Cut accurately and safely to a marked line. Use appropriate finishing techniques for the project.

						<i>Refine their product – review and improve.</i>	<i>Refine their product – review and improve.</i>
Evaluate	Explore some existing products, identifying their purpose. Say what they like/do not like about their models.	Explore existing products, investigate how they have been made and evaluate whether they do/do not achieve their purpose. Talk about their design, identifying good and bad points. Talk about/note changes made during the making process. Say what they like and do not like about their products and begin to think about why. Discuss how closely their finished product meets the design criteria and whether it meets the need of the user.	Explore existing products, investigate how they have been made and evaluate whether they do/do not achieve their purpose. Talk about their design, identifying good and bad points. Talk about/note changes made during the making process. Say what they like and do not like about their products and begin to think about why. Discuss how closely their finished product meets the design criteria and whether it meets the need of the user.	Investigate and evaluate similar products to the one to be made to give starting points for a design. Draw/sketch products to help to analyse and understand how products are made. Research the needs of the user. Identify the strengths and weakness of their ideas in relation to the purpose and user. Decide which design idea to develop. Consider and explain how the finished product could be improved. Discuss how well the finished product meets the design criteria for the user.	Investigate and evaluate similar products to the one to be made to give starting points for a design. Draw/sketch products to help to analyse and understand how products are made. Research the needs of the user. Identify the strengths and weakness of their ideas in relation to the purpose and user. Decide which design idea to develop. Consider and explain how the finished product could be improved. Discuss how well the finished product meets the design criteria for the user.	Research and evaluate existing products. Identify the strengths and weaknesses of their design ideas. Report to peers about their product using correct technical vocabulary. Consider and explain how the finished product could be improved in relation to the design criteria. Discuss how well the finished product meets the design criteria of the user and test on the user. Understand how key people have influenced design.	Research and evaluate existing products. Identify the strengths and weaknesses of their design ideas. Report to peers about their product using correct technical vocabulary. Consider and explain how the finished product could be improved in relation to the design criteria. Discuss how well the finished product meets the design criteria of the user and test on the user. Understand how key people have influenced design.

				Investigate relevant key events and individuals in design and technology.	Investigate relevant key events and individuals in design and technology.		
Technical knowledge							
Structures	Understand that different materials have different properties and can be used for a variety of purposes. Construct simple structures and models using a range of materials as part of planned activities and during continuous provision.	Understand that different materials can be used for different purposes, according to their properties. Develop an awareness that structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable. Construct simple structures and models using a range of materials.			Understand that shell structures are hollow 3D structures with a thin outer covering, such as a box. Create a shell structure and consider how to strengthen it.	Understand that frame structures are made from thin rigid components, with the rigid frame giving the structure, shape and support. Understand that a prototype is a mock-up of a design that may not be the full size or made from the same materials as the finished product. Create a rigid frame structure understanding how and why to use triangular supports to strengthen the corner joints.	

Mechanisms	Understand that vehicles have wheels and axles to help them to move. As part of continuous provision, explore a variety of toy vehicles and use construction equipment and kits to build moving vehicles.	Understand that an axle is a rod that passes through the centre of a wheel to connect two wheels. Use wheels and axles to make a simple moving model.	Develop and awareness that a mechanism is a device that takes one type of motion or force and produces a different one. Develop an awareness of different types of mechanisms – sliders, levers, linkages gears, pulleys and cams. Use sliders and levers in their products.	Understand that levers and linkages have an input and an output. Understand the different types of levers and linkage mechanisms - linear, reciprocating, oscillating and rotary. Choose an appropriate lever and linkage mechanism for their product.		Understand that mechanisms are used to add functionality. Build on previous knowledge that mechanical systems can include sliders, levers, linkages, gears, pulleys and cams and that other mechanisms include pneumatic and hydraulics. Use mechanical systems in their products to meet a design brief. I	
Electricity	Talk about products that use electricity and why.	Identify and talk about products that use electricity to make them work. Identify some of the dangers associated with electricity and how to stay safe.		Understand that a series circuit is made up of an energy source such as a battery or cell, wires and a bulb. Understand that a circuit must be complete for the electricity to flow. Understand that components added to circuits achieve a particular goal, such as bulbs for lighthouses and torches and buzzers for burglar alarms etc.			Understand that electrical systems can be controlled by a simple on/off switch or by a variable resistor that can adjust the size of the current in the circuit. Understand that computer programs can control electrical circuits that include a variety of components, such as switches, lamps, buzzers and motors. Design products incorporating the

				<i>Build models incorporating circuits with buzzers and/or bulbs.</i>			<i>most appropriate electrical systems.</i>
Textiles	<i>Cut out shapes from a range of fabrics, paper and card.</i>	<i>Identify and select the most appropriate material for projects, eg paper, card or fabric.</i>	<i>Understand how simple 3-D textile products are made, using a template to create two identical shapes.</i> <i>Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</i> <i>Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.</i>		<i>Understand how to securely join two pieces of fabric together.</i> <i>Understand the need for patterns and seam allowances.</i> <i>Know and use technical vocabulary relevant to the project.</i> <i>Create a 3D product using a range of materials and sewing techniques.</i>		<i>Understand how a 3D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</i> <i>Combine fabrics to create more useful properties and make a product of high quality, checking for snags and mistakes.</i> <i>Understand that fabrics can be strengthened, stiffened and reinforced where appropriate.</i>

Food preparation and cooking	Understand that a recipe is a set of instructions for preparing a dish and includes a list of the ingredients required. Taste a variety of different foods, such as porridge (when learning about Goldilocks and the three bears) and noodle for Chinese new year. Begin to discuss personal preferences such as why they like or dislike a certain food. Begin to identify the origins of some foods.	Understand where a range of fruit comes from e.g. farmed. Understand and use basic principles of a healthy and varied diet to prepare dishes. Know and use technical and sensory vocabulary relevant to the project. Understand how to prepare ingredients, such as washing, peeling and chopping.	Understand where a range of fruit and vegetables come from e.g. farmed or home grown. Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of the eatwell plate. Know and use technical and sensory vocabulary relevant to the project. Investigate and examine a range of fruit and vegetables and how they are farmed/grown. Understand how to prepare ingredients, such as washing, peeling, chopping and grating.	Know how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Know and use relevant technical and sensory vocabulary appropriately. To know food can be fresh, pre-cooked and processed. To know about food groups	Understand how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Identify some food that comes from the UK and other countries in the world. Describe some of the processes that food goes through to preserve/make them more appealing. Begin to develop an understanding about poverty in the world and locally and the importance of using available produce to create nutritious meals.	Know how to use utensils and equipment including heat sources to prepare and cook food. Understand about seasonality in relation to food products and the source of different food products. Further develop an understanding of poverty in the world and locally and the importance of using available produce to create nutritious meals. Know and use relevant technical and sensory vocabulary.	Know how to use utensils and equipment including heat sources to prepare and cook food. Understand about seasonality in relation to food products and the source of different food products. Begin to develop an understanding of allergies and intolerances. Know and use relevant technical and sensory vocabulary.
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