



Design Technology

DT teaches us to design, make and evaluate products using a range of materials

EYFS including nursery	Year 1	Year 2	Year 3 (KS2)
Design			
ELG – Creating with Materials To experiment with colour, design, texture, form and functions.	Design purposeful, functional, appealing products for themselves and others based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and, where appropriate, ICT.		Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
KNOWLEDGE			
Use their increasing knowledge and understanding of tools and materials to explore their interests and enquiries and develop their thinking.	Design criteria are the explicit goals that a project must achieve. Computer aided design has advantages over paper design – it will show how	Communicate ideas in a variety of ways: drawings, diagrams, written work, modelling, speaking and using ICT.	Design criteria are the exact goals a project must achieve to be successful. These criteria might include use,

Children can talk about a design idea and use simple language to describe it. Demonstrate knowledge of planning by discussing before they attempt to make anything.	finished products will look; different colours and textures can also be trialled. Sketches, templates and drawings can help communicate ideas. Know why it is important to plan.	Computer aided design helps to identify and solve problems before the product is made. Labels can be added for clarity. Use their knowledge of existing products and their own experience to help generate their ideas. Know and explain why it is important to plan. Children are aware of industries in which the design process is essential i.e. fashion, car engineering etc.	appearance, cost and target user.
SKILLS			
Develop their own ideas through experimentation with diverse materials, to express and communicate their discoveries and understanding. loose parts, watercolours, powder paint, to express and communicate their discoveries and understanding. Children are supported in thinking about what they want to make, processes that may be involved, resources they might need and adults may provide resources to support e.g. photographs of existing products.	Create a design to meet simple design criteria. Use design software to create a simple plan for a design. Draw and label simple diagrams to share and communicate ideas. Use their knowledge of existing products and their own experience to help generate their ideas	Generate and communicate their ideas through a range of methods. Use design software to create a simple labelled design or plan Design products that have a purpose and are aimed at an intended user. Explain how their products will look and work through talking and simple annotated drawings.	Develop design criteria to inform a design.
COVERAGE			
Art area Mud kitchen Sensory tuff trays Loose parts	Through all DT topics	Through all DT topics.	

Junk modelling			
VOCABULARY			
Plan, idea, design	Design, idea, sketch, label, example, improve	Improve, design criteria, label, model, examples, ideas, materials,	
Make			
ELG – Creating with Materials To safely use and explore a variety of materials, tools and techniques.	Select from and use a range of tools and equipment to perform practical tasks, for example cutting, shaping, joining and finishing. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients according to their characteristics.	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	
KNOWLEDGE			
FS1 Begin to identify and name simple tools i.e. scissors are used for cutting and show a basic understanding of how they are used. FS2 Use their increasing knowledge and understanding of tools to explore their interests and enquiries and develop their thinking. Children can name relevant tools i.e. glue, tape, scissors, cardboard.	Specific tools are used for particular purposes e.g. scissors are for cutting and glue is for sticking. Different materials are suitable for different purposes, depending on their specific properties e.g. glass is transparent so is suitable to be used for windows. Children know they can adapt their planning during the making phase if required and explain why.	Different tools have characteristics that make them suitable for specific purposes e.g. scissors are used for cutting because they have sharp blades. Properties of components and materials determine how they can and cannot be used e.g. plastic is strong and shiny but can be difficult to paint. Children know and use technical vocabulary such as waterproof, rigid and flexible should be used to demonstrate sound knowledge.	Specific tools can be used for cutting e.g. saws. Wood can be joined using glue, nails or staples. Safety rules must be followed to prevent injury. These include using a bench hook to keep the wood still, using a junior hacksaw with a pistol grip and working under adult supervision.

			Materials for a specific task must be selected on the basis of their properties, these include physical properties as well as availability and cost.
SKILLS			
<u>FS1</u> Use various construction materials Beginning to constructs, stacking blocks vertically and horizontally, making enclosures and creating spaces. Joins construction pieces together to build and balance. Understands tools can be used for purpose. <u>FS2</u> To use a range of small tools, including scissors, paintbrushes and cutlery. Understand that different media combines to create new effects. Manipulates materials to achieve a planned effect. Constructs with a purpose in mind, using a variety of resources. Uses simple tools and techniques competently and appropriately. Experiments to create different textures.	Select the appropriate tool for a simple practical task. Select and use a range of materials, beginning to explain their choices. Explain what they are making and why. Select and use tools to cut, shape, and join. Cut, shape and score materials with some accuracy. Assemble, join and combine materials, components or ingredients. Begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer depending on area of DT.	Select the appropriate tool for a task and explain their choice. Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect. Cut, shape and score materials with some accuracy. Assemble, join and combine materials, components or ingredients. Explain what they are making and why it fits the purpose.	Use tools safely for cutting and joining materials and components. Plan which materials will be needed for a task and explain why.

Selects tools and techniques to shape, assemble and join materials.			
COVERAGE			
Art area Junk modelling Creative station Loose parts Sewing	Mechanisms Structures	Textiles Mechanisms Structures	
VOCABULARY			
Needle, thread, wool, ribbon Stack, construction, tall, stable, sissors, flap, join, tools	Structure, framework, join, freestanding, construction	Woven, fibre, templates. Finishing, design, product, ridged, stable, input, output, engineer, flexible, waterproof, combine,	
Evaluate			
ELG – Creating with Materials To share their creations, explaining the processes they have used.	Explore and evaluate a range of existing products Evaluate their ideas and products against a design criteria.		
KNOWLEDGE			
To be able to express and communicate their discoveries and understanding.	Two products can be compared by looking at a set of criteria and scoring both products against them. Everyday products are objects that are used routinely at home and school, such as a toothbrush. All products are designed for a specific purpose. The importance of a product may be that it fulfils its goals and performs a useful purpose. A strength is a good quality of a piece of work and a weakness is an area that can be improved.	Products can be compared by looking at the particular characteristics of each and deciding which is better suited to the purpose. Products can be improved in different ways such as making them easier to use, more hardwearing or more attractive. Finished products can be compared with design criteria to see how closely they match, improvements can then be planned.	Particular products have been designed for specific tasks such as nail clippers, the spinning top and the cool box. Asking questions can help others to evaluate their product such as asking them whether the selected materials achieve the purpose of the model. Work from different designers can be compared by assessing specific criteria, such as

			their visual impact, fitness for purpose and target market.
SKILLS			
FS1 Children will begin to demonstrate opinions on whether they like something or not. FS2 Share their creations, explaining the process they have used	Describe the similarities and differences between two products. Name and explore a range of everyday products and describe how they are used. Describe why a product is important. Talk about their own and each other's work, identifying strengths or weaknesses, with support. As they work, children begin to start to identify strengths and possible changes they might make to refine their existing design	Compare different brands of the same product and explain their similarities and differences. Explain how an everyday product could be improved. Explain why a designer or inventor is important. Explain how closely their finished products meet their design criteria and say what they could do better in the future. As they work, children can identify strengths and possible changes they might make to refine their existing design.	Explain how an existing product benefits the user. Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account. Explain the similarities and difference between two designers. Describe how and why key events in design and technology have shaped the world.
COVERAGE			
Art area Junk modelling Creative station	Structures, mechanism, textiles, food and nutrition	Structures, mechanism, textiles, food and nutrition	
VOCABULARY			
Improve, idea, change	Design, construction, evaluate, improve, design criteria	Design product, evaluate, critique, evaluation, appealing, purposeful	
Technical Knowledge			

ELG – Creating with Materials To safely use and explore a variety of materials, tools and techniques..	Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms, for example levers, sliders, wheels and axels	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	
KNOWLEDGE			
To use their increasing knowledge and understanding of tools to explore their interests and enquiries and develop their thinking.	Different materials can be used for different purposes, depending on their properties e.g cardboard is a stronger material than paper. Levers and sliders make things move. Mechanisms are a collection of moving parts.	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. A mechanism is a device that take one type of motion or force and produces a different one. It makes a job easier to do. An axel is a rod or spindle that passes through a center of a wheel to connect two wheels.	Shell structures are hollow, 3d structures with a thin outer covering, such as a box. Frame structures are made from thin, rigid components such as a tent frame. The rigid frame gives the structure shape and support. Diagonal struts can strengthen the structure. Levers consist of a rigid bar that rotates around a fixed point – called a fulcrum. They reduce the amount of work needed to lift a heavy object.

			Sliders move from side to side or up and down and are often used to make moving parts in books. Axels are shafts on which wheels can rotate to make a moving vehicle. Cams are devices that can convert circular motion into up and down motion. An electric circuit can be used in a model such as a lighthouse. It can be controlled using a switch. A program is a set of instructions written to perform a specified task on a computer.
SKILLS			
To use a range of small tools, including scissors, paintbrushes and cutlery.	Construct simple structures, models or other products using a range of materials. Create a simple lever and slider mechanism. Say how a product can be made stronger. Select and shape a combination of materials by cutting, tearing and folding. Explore a range of joining techniques, gluing, taping, stapling, and stitching.	Explore how a structure can be made stronger, stiffer and more stable. Use a range of mechanisms, levers, sliders, wheels and axels.	Create shell or framed structures, using diagonal struts to strengthen them. Explore and use a range of mechanisms (levels, sliders, axels, wheels and cams) in models or products. Incorporate a simple series circuit into a model. Write a program to make something move on a tablet or computer screen. (Computing)
COVERAGE			

Art area Junk modelling Creative station Sensory tuff trays	Mechanisms Structures	Structures mechanisms	
VOCABULARY			
Stack, construction, tall, stable, scissors, flap, join, tools, stick, tear	Lever, pivot, slider, push, pull, product	Hard, strong, engineer, purpose, property, materials, axel, wheel, mechanism, cab, chassis, model, vehicle	
Cooking and Nutrition			
Managing Self To manage their own basic hygiene and personal needs; understanding the importance of healthy food choices.	Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.		Understand and apply the principles of a healthy and varied diet Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
KNOWLEDGE			
To understand the importance of healthy food choices. Know which foods are healthy and which foods are okay in moderation.	Using non-standard measures is a way of measuring that does not involve reading scales. Fruit and vegetables are an important part of a healthy meal (it is recommended to have 5 portions of fruit and vegetables a day). Some foods come from animals such as meat, fish and dairy, other foods come from plants, such a fruits, vegetables, grains, beans and nuts.	Some ingredients need to be prepared before they can be cooked or eaten. A healthy diet should include meat or fish, starchy foods, some dairy foods, a small amount of fat and plenty of fruit and vegetables. Food comes from two main sources; animals and plants e.g. cows provide beef.	Ingredients can usually be bought at supermarkets, but specialist shops may stock different items. Greengrocers sell fruit and vegetables, butchers sell meat, fishmongers sell fresh fish and delicatessens usually sell some unusual prepared

	Children know that a diet must be balanced to be healthy.	Children know that everyone should have at least 5 portions of fruit or vegetables per day and explain why	foods, as well as cold meats and cheeses.
SKILLS			
To be able to describe a range of food textures and tastes when cooking and to notice changes when they are combined or exposed to hot and cold temperatures.	Measure and weigh food items, using non-standard measures such as spoons and cups. Select healthy ingredients for a fruit or vegetable salad. Sort foods into groups by whether they are from an animal or plant source. Cut food safely using tools provided. Assemble or combine ingredients hygienically.	Prepare ingredients by peeling, grating, chopping or slicing. Describe the types of food needed for a healthy and varied diet, and apply the principles to make a simple healthy meal. Identify the origin of some common foods. Cut, peel, and grate ingredients safely and hygienically. Measure or weigh using cups or scales.	Identify the main food groups (carbs, protein, dairy, fruit and vegetables, fats and sugars). Design a healthy snack or packed lunch and explain why it is healthy. (Prepare and cook a simple savoury dish. Identify and name foods that are produced in different places including the UK and beyond.
COVERAGE			
FS1 Snack times/Lunch times Circle times Topic input FS2 Gingerbread people Bread making Pancakes	Fruit and Vegetables – Food and Nutrition	A balanced diet – food and nutrition	
VOCABULARY			
mixing measuring baking dough knead recipe healthy	Farming Balanced healthy Recipe Bake Cook Ingredients	Nutrition Healthy Unhealthy Tools Equipment Diet Carbohydrates	

scales ingredients		Fruit and vegetables Protein Dairy Fats and sugars	
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