



BJS Design and Technology overview and progression of skills

Overview of Design and Technology in KS2				
D&T process – research/investigate → develop skills → design → make → evaluate				
	Year 3	Year 4	Year 5	Year 6
T1&2	Construction - Photo frames Cutting, joining and strengthening Photo frames from cardboard and paper	Electricity - Make an advent candle. Create a circuit incorporating a bulb and a switch	Food - Making flatbread and humous Key focus: cooking and nutrition Combine food ingredients appropriately (e.g. kneading, rubbing in and mixing).	Textiles - Christmas stockings Combine fabrics to create more useful properties and make a product of high quality, checking for snags and glitches.
T3&4	Mechanisms - Pop-up books Explore a range of pop-up mechanisms Plan, design, make and evaluate a simple pop-up book. (aimed at a year 1 child)	Textiles - Sewing and joining Plan and create Roman money container Use different stiches and materials Evaluate our product	Mechanisms - Designing a mechanism to lift a load (crane) Link with Science (forces)	Construction- Earthquake proof buildings Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.
			Textiles - Weaving a trinket bowl Link History	
T5&6	Food – Design, prepare and evaluate a healthy sandwich Describe what a balanced diet is. Identify food which comes from the UK and other countries in the world. Explain which food groups it covers – how is it balanced?	Food – Design, make and evaluate a healthy smoothie Make healthy eating choices and explain why. Explain some of the processes that foods go through to preserve/make them more appealing. Recap on the eat well plate – what is a balanced diet?	Electricity – Lighthouses Create a circuit using a bulb and motor. Design criteria – features of a real lighthouse	Food – Jam tarts Make filled pastry tart following a recipe with their designed product in. Examine commercial jam tarts – consider cost and packaging, ingredients, nutrition and sensory appreciation. Combine food ingredients appropriately (e.g. kneading, rubbing in and mixing).
	Textiles - Rainforest headbands Design and make a rainforest headband <i>Artificial context:</i> design to be meaningful to a tribe (Link to Rainforest unit) e.g. warrior, leader, holy man	Construction - Bug hotel Evaluate a range of product (existing bug houses from pictures) Prototype and build frame and shell structures, showing awareness of how to strengthen, stiffen and reinforce. Use diagonal struts to strengthen. (progression to working with wood – making a product to last outdoors, joining methods with wood)		Construction - Y6 production props Select the most appropriate materials and frameworks for different structures, explaining what makes them strong. Build on prior experiences – use evaluations from past projects to identify strengths and things which need more development .
Key	Textiles			
	Structures/construction			
	Mechanisms			
	Electricity			
	Cooking, nutrition and origins of food			

Key differences between Design and technology and Art

DT - product, user, purpose, and looking at the work of designers.

Art - freedom of expression, open creativity, looking at artists, emotion.



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Skills progression						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Tools	Explore using different tools eg scissors, hole punches, split pins	Learn to use tools safely for cutting and joining materials/ components	Select the appropriate tools and explain choices.	Analyse the potential of a range of tools and use them with accuracy.	Name and select appropriate tools for a task and use them with precision.	Use more complex tools with increasing accuracy.
Materials	Select and explain their choice of materials, sometimes with help. Fold, tear, roll and cut paper	Choose appropriate materials and suggest ways of manipulating them.	Plan which materials will be needed for a task and explain why.	Choose from a range of materials showing an understanding of their different characteristics.	Select and combine materials with precision.	Choose the best materials for a task, showing an understanding of their working characteristics.
Health and safety	Explain how to keep safe during a practical task.	Work safely and hygienically in construction and cooking activities.	Follow health and safety rules for cooking and baking activities.	Follow health and safety rules when working with materials.	Demonstrate how to use tools safely.	Demonstrate how their products take into account the safety of the user.
Repair and Maintenance	Explain how they would fix simple products.	Cut, measure, form and shape materials to fix or repair something.	Try an alternative way of fixing something, if their first attempt isn't successful. (with adult guidance)	Try an alternative way of fixing something, if their first attempt isn't successful. (independently)	Describe how a product could be made better, stronger or more sustainable (recycling).	Paint, glue, nail and sand to rejuvenate a damaged, faulty or old object.
Cutting & joining	With help measure, mark out, cut and shape a range of materials. Join appropriately, using glue or tape.	With help measure, cut and score with some accuracy. Join appropriately, with glue and/or tape, for different materials and products.	Measure and cut materials with increasing accuracy (fabric, card and paper for mechanisms) Join fabrics using a running stitch.	Measure and mark wood/dowel. Use a glue gun with close supervision (one to one).	Cut safely and accurately to a marked line.	Use a craft knife, cutting mat and safety ruler with one to one supervision if needed. Join materials, using the most appropriate method for the materials or purpose.
Textiles	Cut out shapes from a range of fabrics and papers.	Demonstrate how to cut, shape and join fabric to make a simple product.	Create a simple pattern for a design. Independently use a running stitch.	Use a simple pattern to create an item with a purpose. Use a range of techniques to decorate and join. Independently thread a needle.	Create a 3-D product using a range of materials/ techniques. (weaving)	Combine fabrics to create more useful properties and make a product of high quality, checking for snags and glitches.
Mechanisms (including card making)	Explore and use simple mechanisms eg levers, sliders, wheels and axles Create simple hinges and pop-ups using card.	Create and use wheels and axles, levers and sliders. (with adult support)	Cut slots in card Use more complex pop-ups.		Create and use wheels and axles. Create and use simple gears, pulleys, cams, levers and linkages.	
Structures	Begin to assemble, join and combine materials and components using a variety of temporary methods eg glues, masking tape, string, split pins	Improve structures by making them stronger, stiffer and more stable.	Construction: Reinforce structures to ensure they're fit for purpose	Prototype and build frame and shell structures, showing awareness of how to strengthen, stiffen and reinforce. Use diagonal struts to strengthen.	Build a framework using a range of materials (e.g. wood, card and corrugated plastic)	Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.
Electricity	Identify and talk about products that use electricity to make them work.	Create working circuits to light a bulb or work a buzzer.		Build models incorporating circuits with bulbs.		Design products incorporating the most appropriate electrical systems.



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Food						
Cooking	<i>Begin to prepare simple dishes safely and correctly. Introduce techniques such as chopping, grating and peeling</i>	<i>Prepare simple dishes safely and correctly. Cut, peel, grate and chop a range of ingredients to make dishes from other countries.</i>	(By the end of year 4) Combine a variety of ingredients using a range of cooking techniques.	(By the end of year 4) Measure and weigh ingredients appropriately to prepare and cook a range of savoury dishes.	Combine food ingredients appropriately (e.g. kneading, rubbing in and mixing).	Combine food ingredients appropriately (e.g. kneading, rubbing in and mixing).
Nutrition	<i>Begin to identify the main food groups including fruit and vegetables. Know the importance of 5 a day.</i>	<i>Recognise the need for a variety of foods in a diet. Be aware of the Eat Well plate</i>	Describe what a balanced diet is.	Make healthy eating choices and explain why.	Evaluate meals and consider if they contribute towards a balanced diet.	Plan how they can have a healthy/affordable diet.
Origins of food	<i>Begin to identify that all food comes from plants or animals.</i>	<i>Explain where the food they eat comes from (e.g. by referring to countries, counties, animals and plants).</i>	Identify food which comes from the UK and other countries in the world.	Explain some of the processes that foods go through to preserve/make them more appealing.	Explain what times of year particular foods are in season.	Explain how ingredients were grown, reared, caught and processed.