

Typically Y1, Y2 &amp; Y3

Typically Y3, Y4 &amp; Y5

Typically Y4, Y5 &amp; Y6

## The RAINBOW Continuum: DESIGN TECHNOLOGY: *Children can ...*

### Year A

Y1	Y2	Y3	Y4	Y5	Y6
Cooking and nutrition: <b>Know</b> healthy and varied diets Where food comes from	Cooking and nutrition: Know the <b>advantages</b> of fruit and veg Food hygiene	Cooking and nutrition: <b>Apply the principles</b> of healthy and varied diets	Cooking and nutrition: <b>Prepare and cook</b> savoury meals (predominantly)	Cooking and nutrition: Prepare and cook savoury meals (predominantly) using a <b>range of techniques</b>	Cooking and nutrition: Know the <b>seasonality</b> of ingredients ( <b>grown, reared, caught or processed</b> )
<ul style="list-style-type: none"> <li>Dinosaurs- design</li> <li>Space Buggies: Wheels , movement, make, axles</li> </ul>	<ul style="list-style-type: none"> <li>Mummification</li> <li>Tutankhamun – structures, stronger, stiffer.</li> </ul>	<ul style="list-style-type: none"> <li>Great Fire of London: Houses made from materials and components with functionality and aesthetic properties. Research with criteria.</li> <li>Joseph Rowntree: annotated sketches showing architecture or chocolate making machines.</li> </ul>	<ul style="list-style-type: none"> <li>Iceni warriors: Adapting models, prototypes</li> <li>Boudicca: using a wide range of tools, materials, components and textiles.</li> </ul>	<ul style="list-style-type: none"> <li>Inequality in Victorian times</li> <li>Dr Barnardo and Joseph Rowntree. Research and innovation.</li> </ul>	<ul style="list-style-type: none"> <li>World Wars: cross section, CAD design, exploded diagrams.</li> <li>Coasts and Russia: evaluate range of products</li> <li>Comparing leaders</li> </ul>

### Year B

Y1	Y2	Y3	Y4	Y5	Y6
Cooking and nutrition: <b>Know</b> healthy and varied diets Where food comes from	Cooking and nutrition: Know the <b>advantages</b> of fruit and veg Food hygiene	Cooking and nutrition: <b>Apply the principles</b> of healthy and varied diets	Cooking and nutrition: <b>Prepare and cook</b> savoury meals (predominantly)	Cooking and nutrition: Prepare and cook savoury meals (predominantly) using a <b>range of techniques</b>	Cooking and nutrition: Know the <b>seasonality</b> of ingredients ( <b>grown, reared, caught or processed</b> )
<ul style="list-style-type: none"> <li>Bog baby: appealing products (sewing)</li> <li>Kings and Queens: templates and mock-ups</li> <li>Sea creatures: sewing</li> </ul>	<ul style="list-style-type: none"> <li>Castles: Build structures, Levers, sliders and mechanisms</li> <li>Native Americans: templates and mock-ups with criteria</li> </ul>	<ul style="list-style-type: none"> <li>Life as a Roman Soldier: gears and pulleys: creating weapons such as battering rams etc.</li> </ul>	<ul style="list-style-type: none"> <li>Child Poverty and labour: textiles and functional properties. Prototypes and pattern pieces.</li> </ul>	<ul style="list-style-type: none"> <li>Tudor mayhem: Gears, pulleys, CAMS, linkage</li> <li>Viking invasion: Gears, pulleys, CAMS, linkage</li> </ul>	<ul style="list-style-type: none"> <li>Titanic: buzzers, switches, lights and motors.</li> <li>Titanic: CAD rooms</li> <li>World wars</li> </ul>

	DESIGN AND DEVELOP	MAKING	PRODUCT AND EVALUATION	Suggested tasks
	Talk about what they want to make	Make models randomly	Be excited about what they have made	<ul style="list-style-type: none"> <li>Make</li> <li>Talk about making</li> </ul>

Typically Y1, Y2 & Y3		Typically Y3, Y4 & Y5		Typically Y4, Y5 & Y6	

<p>Generate ideas from their own experience</p> <p>Talk about their ideas and say what will be done</p> <p>Describe what they want to do using pictures and words</p> <p>Make lists of materials they will need</p>	<p>Know the features of some familiar products</p> <p>Join two materials together, often with glue</p> <p>Use scissors or a knife to cut, sometimes with help</p> <p>Make simple models, not necessarily with a purpose</p> <p>Use simple construction kits – e.g. Lego</p> <p>Know about basic hygiene and safety</p>	<p>Recognise the characteristics of familiar products</p> <p>Know how some moving objects work</p> <p>Use simple terms to talk about their own and others' work</p> <p>Identify materials and mechanisms in familiar products</p> <p>Know the benefits of fruit and vegetables</p>	<ul style="list-style-type: none"> <li>• Verbally plan</li> <li>• Make lists of materials</li> <li>• Know features</li> <li>• Join with glue or tape</li> <li>• Use scissors or knife</li> <li>• Make a simple model</li> <li>• Use kits</li> <li>• Basic hygiene or safety</li> <li>• Know how something moves</li> <li>• Identify materials and mechanisms</li> </ul>
<p>Generate ideas, and plan what to do next, using their experience of materials and components Use their knowledge of some working characteristics of materials when designing Use wheels, slides and levers in plans</p> <p>Use plans to show how to put their ideas into practice</p> <p>Say how the product will be useful to the user</p>	<p>Begin to select tools for folding, joining, rolling</p> <p>Measure out and cut fabric</p> <p>Use a simple template for cutting out</p> <p>Practise skills before using them</p> <p>Use simple finishing techniques</p> <p>Select tools and techniques appropriate to the job</p> <p>Follow basic safety rules</p> <p>Understand and use the terms ingredient and component</p> <p>Use simple scales or balances</p>	<p>Talk about how moving objects work</p> <p>Describe how a commercial product works</p> <p>Use like and dislike when evaluating or describing</p> <p>Explain why some products are useful Use digital photography to present design or finished work</p> <p>Recognise what they have done well and talk about what could be improved</p>	<ul style="list-style-type: none"> <li>• Gather ideas</li> <li>• Plan</li> <li>• Wheels, slides and levers</li> <li>• Draw and label</li> <li>• Select tools</li> <li>• Measure and cut</li> <li>• Use vocabulary 'ingredient' and 'component'</li> <li>• Scales or balances</li> <li>• Use like and dislike</li> <li>• Talk about- reflect on work</li> </ul>

Typically Y1, Y2 & Y3

Typically Y3, Y4 & Y5

Typically Y4, Y5 & Y6

Draw pictures with labels, with some text	Understand main rules of food hygiene	Seek out the views and judgements of others Predict how changes will improve the finished product	
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**DESIGN AND DEVELOP**

**MAKING**

**PRODUCT AND EVALUATION**

**Suggested tasks**

Typically Y1, Y2 & Y3		Typically Y3, Y4 & Y5		Typically Y4, Y5 & Y6	
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	<p>Use others to help generate their ideas Use what they know about the properties of materials</p> <p>Plan their work to include a range of joins</p> <p>Ensure that plans are realistic and appropriate for the aim</p> <p>Show the order of working in plans</p> <p>Use models, pictures and words in designs</p> <p>Make increasing use of ICT to plan ideas</p> <p>Recognise that designs must meet a range of needs Say why something will be useful</p> <p>Apply what they know about mechanisms to create movement when planning and designing</p> <p>Investigate a range of products to see how they work</p>	<p>Measure and cut out using centimetres and weigh in grams</p> <p>Choose tools and equipment which are appropriate for the job</p> <p>Prepare for work by assembling components together before joining</p> <p>Use scoring and folding for precision</p> <p>Make holes using a punch and drill</p> <p>Work out how to make models stronger</p> <p>Alter and adapt materials to make them stronger Combine a number of components together in different ways</p> <p>Make the finished product neat and tidy</p> <p>Begin to select their own ingredients when cooking or baking</p> <p>Make good presentation of food</p>	<p>Be clear about their ideas when asked Can alter and adapt original plans following discussion and evaluation</p> <p>Recognise what has gone well, but suggest further improvements for the finished article</p> <p>Suggest which elements they would do better in the future</p> <p>Identify where evaluation has led to improvements</p> <p>Understand safe food storage</p>	<ul style="list-style-type: none"> <li>• Properties of materials</li> <li>• Range of joins</li> <li>• Show steps in plans</li> <li>• Use words, models and pictures in plans</li> <li>• Say why something meets a brief or is useful</li> <li>• Create movement from mechanisms</li> <li>• Use cm and grams</li> <li>• Assemble before joining</li> <li>• Adapt materials</li> <li>• Suggest improvements</li> </ul>
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	<b>DESIGN AND DEVELOP</b>	<b>MAKING</b>	<b>PRODUCT AND EVALUATION</b>	<b>Suggested tasks</b>
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Typically Y1, Y2 & Y3		Typically Y3, Y4 & Y5		Typically Y4, Y5 & Y6	

<p>Collect and use information to generate ideas</p> <p>Consider the way the product will be used Understand designs must meet a range of criteria and constraints</p> <p>Take users' views into account</p> <p>Understand how some properties can be used – e.g. waterproof</p> <p>Think ahead about the order of their work</p> <p>Add electricity to create motion or make light</p> <p>Produce step by step plans</p> <p>Make ongoing sketches and annotations</p>	<p>Increasingly model their ideas before making</p> <p>Measure accurately to centimetres and grams Combine materials for strength and to improve how the product looks</p> <p>Use permanent and temporary fastenings to join Join with a greater range of techniques – e.g. staples</p> <p>Strengthen joins and corners in a variety of ways Understand how wheels, axles, turning mechanisms, hinges and levers all work together</p>	<p>Talk about what they like and dislike, giving reasons Develop their designs through their own reflection and the evaluation of others</p> <p>Carry out tests before making improvements Evaluate food by taste, texture, flavour etc.</p>	<ul style="list-style-type: none"> <li>• Use a criteria for a design</li> <li>• Collect views</li> <li>• Apply material properties- waterproofing</li> <li>• Add electricity to create light or movement</li> <li>• Make adaptations with sketches and notes</li> <li>• Combine materials for strength</li> <li>• Link wheels, axels, turning mechanisms and or levers</li> <li>• Test it, evaluate it</li> </ul>
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Typically Y1, Y2 & Y3		Typically Y3, Y4 & Y5		Typically Y4, Y5 & Y6	

	<p>Make more complex designs to include belts and pulleys, and a combination of other mechanisms</p> <p>Plan the order of work by thinking ahead</p> <p>Use sketches to show other ways of doing things – and then make choices</p> <p>Meet an identified need – e.g. a meal for an older person – by selecting ingredients or materials Use various sources of information and draw on them in design</p>	<p>Carry out tests to see if their design works</p> <p>Make improvements from design suggestions</p> <p>Work in a safe and hygienic way</p> <p>Measure and cut precisely to millimetres</p> <p>Make stable and strong joins to stand the test of time</p> <p>Use proportions when cooking, by doubling and halving recipes</p>	<p>Identify what is working well and what might be improved – and make choices from several alternatives</p> <p>Refine the quality of the finished product, including making annotations on the design</p> <p>Clarify ideas through drawing and modelling Increasingly use testing to improve models and finished products</p>	<ul style="list-style-type: none"> <li>• Complex designs</li> <li>• Gears, pulleys, CAMS, levers and linkage and combinations of mechanisms</li> <li>• Make choices from two or more designs</li> <li>• Measure and cut in mm</li> <li>• Stability or strength testing</li> <li>• Ratio for cooking</li> <li>• Cross sections</li> <li>• Testing to improve</li> </ul>
	<b>DESIGN AND DEVELOP</b>	<b>MAKING</b>	<b>PRODUCT AND EVALUATION</b>	<b>Suggested tasks</b>

Typically Y1, Y2 & Y3

Typically Y3, Y4 & Y5

Typically Y4, Y5 & Y6

Keep cost constraints in mind when selecting materials in design  
Use their knowledge of –e.g.- science and art when designing  
Be aware of commercial aspects and incorporate these into their designs  
Design including hydraulics and pneumatics when where appropriate  
Draw scaled diagrams with increasing use of ratio Calculate the amount of materials needed use this to estimate cost

Measure and cut out in precise detail, and make sure that finished products are carefully finished Make separate elements of a model before combining into the finished article  
Understand how an article might be mass produced Produce a simple instruction manual or handbook for their product

Research products using the internet Test and evaluate commercial products, understanding how this information supports their own designs  
Evaluate a range of different sources of information such as advertising and handbooks

- Circuits
- Expanded/ exploded drawing
- Prototypes
- CAD