



# DT Progression



	Year 3	Year 4	Year 5	Year 6
<b>Outcome:</b>	<ul style="list-style-type: none"> <li>Design a class book involving levers and linkages</li> <li>Construct a simple stone age shelter</li> <li>Create Stone Age tools</li> <li>Build a Magnet Maze</li> <li>Build a Shadoof</li> <li>Make a 3D map of the UK</li> <li>Prepare a Healthy salad</li> </ul>	<ul style="list-style-type: none"> <li>Design an eco-house</li> <li>Wire up a quiz board</li> <li>Create a model of the teeth</li> <li>Make a Roman Catapult</li> <li>Make an aqueduct prototype</li> <li>Make a seismograph</li> </ul>	<ul style="list-style-type: none"> <li>Make a pulley system</li> <li>Make a moon-rover vehicle powered by motor</li> <li>Make a pneumatic rainforest creature</li> <li>Make a moving rainforest creature model using levers and linkages</li> <li>Make a Mayan Worry Doll</li> <li>Use CAD to plan a Mayan temple</li> </ul>	<ul style="list-style-type: none"> <li>Computer Control and Gears: Creating a Fairground ride</li> <li>Design and build an Anderson shelter</li> <li>Build a Cam mechanism for an informational presentation</li> </ul>
<b>Design</b>				
<i>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</i>	<p>Develop an idea aimed at self-use</p> <p>Using research into similar designs, develop an idea that is aimed at other children.</p> <p>Using research into similar designs, develop an idea that is aimed at having a functional real-life impact for a particular group - access to water; tools</p> <p>Using research into similar designs, develop an idea that is aimed to be informative and engaging</p> <p>Understand that products can be designed created for many differing purposes</p>	<p>Consider the views and opinions of others that may be the subject of debate regarding reusable and recyclable materials and impact upon the earth</p> <p>Research to ensure accurate and exact representation takes place within their model</p> <p>Using research into similar designs, develop an idea that is aimed at having a functional real-life impact for particular groups - warfare; force measurement; aqueducts</p> <p>Design for real-life application</p> <p>Create for empire and conquest</p>	<p>Use research to develop and improve upon a pre-existing product</p> <p>Research to understand how more complex mechanical systems have developed across time</p> <p>Use research to determine how some design criteria are essential for the safety of those using the product. Include these considerations in own designs</p> <p>Using research into similar designs, develop an idea that is aimed at having a functional real-life impact for particular groups: explorers; mechanics</p> <p>Create for discovery and exploration</p> <p>Design for personal comfort</p>	<p>Use research to determine how and why a safety product was created</p> <p>Analyse a previous design from the past and determine how it could be improved using materials of today</p> <p>Using research into similar designs, develop an idea that is aimed at having a functional real-life impact for particular groups: Personal Safety</p> <p>Create for leisure and informative purpose</p>
<i>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</i>	<p>With support, introduce and use annotated sketches and diagrams</p> <p>generate idea through teacher-led discussion</p> <p>Understand what we mean by a prototype</p>	<p>Continue to develop annotated sketches and diagrams more independently</p> <p>Introduce pupils to exploded diagrams</p> <p>With adult support, build their own prototype</p>	<p>With peer support, build own prototype</p> <p>Use exploded diagrams more independently</p> <p>Introduce pupils to cross-sectional diagrams</p> <p>Introduce pupils to pattern pieces for textile use</p> <p>Introduce pupils to CAD and Understand how CAD can be used effectively within the design process</p>	<p>Use cross-sectional diagrams independently</p> <p>Use exploded diagrams independently</p> <p>Use annotated sketches independently</p>
<b>Make:</b>				
<i>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</i>	<p><b>Joins:</b></p> <p>Learn how to create joins that are not held together</p> <p>Learn how to join securely and tightly using string and knots</p> <p>Learn how to join securely using glue guns</p> <p>Learn how to use glue guns securely and safely</p> <p>Learn how to use shaping tools for modelling of simple model</p>	<p><b>Shaping:</b> Develop Use of shaping tools for more exact representation</p> <p><b>Joining:</b> Develop joining more independently through continued use of glue guns</p> <p><b>Cutting:</b> Introduce tools for cutting – hacksaws and vices. Learn how to use these tools safely</p> <p><b>Finishing:</b> Learn how to use sandpaper to finish a product for smooth surfaces. Understand how this aid joining</p>	<p><b>Cutting:</b> Use hacksaws and vices more independently for cutting</p> <p>Learn how to use Stanley knives safely and responsible for cutting</p> <p><b>Joining:</b></p> <p>Use glue guns independently for joining and learn how joining with pins can allow freedom of movement around the join. Learn how to join textiles with a variety of stitches</p> <p>Combine electrical circuits with a hardware model to create a product</p> <p><b>Finishing:</b> Learn how to use stitches to finish a product aesthetically</p>	<p>Independently select from and use a wider range of tools and equipment to perform practical tasks including cutting, shaping, joining and finishing accurately to create an accurate model</p>

<i>select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</i>	Use materials such as paper, cardboard, rope, string, natural materials, magnets Understand the differences between functional and aesthetic in terms of purpose	Use materials such as wood, plasticine; electrical cables, elastic bands, bulbs, switches and batteries for both functional and aesthetic uses	Use materials such as textiles, piping, axles and wheels within products both for functional and aesthetic use	Use construction kits linked to computer programmes to develop functional products Combine functional and aesthetic qualities within design
Evaluate				
<i>investigate and analyse a range of existing products</i>  <i>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</i>	Investigate who products are for, what their purpose is and how they are made Make simple self-judgements of their designs against their own criteria and the vies of others Make simple judgements based on how effective their product is	Make judgements based on original designs – how does their compare? What needs to improve Begin to suggest improvements based on the views of themselves and of others Begin to suggest improvements in use based on evaluation of functional efficiency	Determine how durable a product is and how it can be improved Suggest improvements in use based on aesthetic presentation Based on the specific purpose of use, what improvements could be made to current designs?	Investigate how a product can be improved based on advances in technology from the original design  Analyse more successful designs of others. Make design improvements based on a measurement of functional efficiency (e.g. how much weight could be withstood)
<i>understand how key events and individuals in design and technology have helped shape the world</i>	Understand how magnets have developed in electromagnets and are used around the world	Understand how eco-friendly products are helping shape the world currently Learn how catapults and aqueducts have helped shape the world Learn how a seismograph can help scientists	Learn how space rockets and moon-rovers have helped shape history Understand how the use of pneumatics has impacted the world	Learn about how key inventions helped protect people during the war
Technical Knowledge				
<i>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</i>	Learn how to strengthen structure supports by making the base more stable	Learn how to apply chemical products to strengthen a design Learn how to use corner triangles for strengthening and reinforcing	Understand how brackets and mountings can help stabilise electrical products within a design Understand how differing stitches can help strengthen a design Understand how additional support and protection around a join can increase the longevity of a product	Test a design to destruction to determine what improvements should be made to strengthen Independently use strengthen, stiffening and reinforcing techniques to improve a design under construction.
<i>understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</i>	Learn how levers work and make a simple lever system	Learn how a simple lever system can be used to create force.	Understand how gears work Make a system involving levers and linkages Understand and use pneumatics Create a simple pulley system	Use gears within the creation of mechanical products Use Cams within the creation of an informational mechanism
<i>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</i>	Understand how simple electrical components work and how they can be used to create functional products Use series circuit, switch and bulbs within a model		Combine electrical products with hardware to create a moving vehicle. Use motor, series circuits create a functional process	
<i>apply their understanding of computing to program, monitor and control their products.</i>			Use CAD to design a Mayan Temple Use computer programming to control a robotic product Use Computer Control to programme and control a mechanism using gears	
Cooking and Nutrition				
Outcome:	Healthy Salad	Food as Art -linking to Broadstairs food festival	Baking Bread Chinese Spring Rolls	International Food Day

<p><b>understand and apply the principles of a healthy and varied diet</b></p> <p><b>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</b></p> <p><b>understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</b></p>	<p>Know that a healthy diet is made up of a variety of differing food and drinks</p> <p>Know that everyone should eat at least 5 portions of fruit and vegetables each day</p> <p>Know how and where we would get the ingredients ourselves we need from</p> <p>Learn specific skills such as chopping, peeling and slicing</p> <p>Know how to prepare simple dishes hygienically without using a heat source</p>	<p>Research ingredients: where have they come from, how did they get onto our shelves and how are they processed?</p> <p>Prepare a range of dishes that involve use of a heat source</p> <p>Learn specific skills including following recipes; using electrical mixers and weighing and measuring with adult support</p>	<p>Learn about seasonality and how this links to where and how ingredients are grown and processed</p> <p>Know that differing foods contain substances such as water, fibre and nutrients that are needed for health</p> <p>Know that recipes can be adapted to change the taste, appearance texture and aroma</p> <p>Develop weighing and measuring skills with peer support</p> <p>Learn specific skills including grating, mixing by hand; kneading, wrapping and baking</p> <p>Prepare food involving use of a heat source</p>	<p>Investigate food from around the world</p> <p>Use a variety of techniques to prepare and cook savoury dishes from differing cultures studied</p> <p>Take feedback from a wide variety of adults</p> <p>Develop weighing and measuring skills with peer support</p> <p>Follow recipes and use electrical mixers independently (with supervision)</p> <p>Use a heat source with support</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------