



# Design Technology Curriculum Overview Year 5



Concepts	User	<b>Understand</b> how the needs of the user led to the creation of the product.
	Implementation	Accurately <b>use</b> precise techniques to produce high quality products that fulfil a need.
	Innovation	<b>Combine</b> detailed design ideas with a continuous evaluation process, <b>testing</b> different alternatives before creating a final product.
<b>Textiles</b>	<b>Stuffed Toys</b> Learn blanket stitch and then design and make 3D stuffed toys.	
Context	Create a stuffed toy by applying skills learnt in previous units. Introduce blanket stitch.	
Design	Designing for a purpose, considering which techniques and materials to use, creating a paper pattern piece for the main body and individually for any additional components	
Make	Selecting and using appropriate stitch types to join and attach materials depending on their properties	
Evaluate	Comparing 3D object to 2D design, evaluating existing stuffed toys, identifying poor sewing technique and where possible rectifying it	
Technical Knowledge	Identifying methods of joining fabric effectively, running stitch, cross stitch and blanket stitch, knowing how to create a hidden seam and seal stuffing	
Vocabulary	Accurate, annotate, appendage, blanket-stitch, design criteria, detail, evaluation, fabric, sew, shape, stuffed toy, stuffing, template	
Recap	Do I know different ways to attach fabrics?	
Skills application	Maths - Choosing a 2D shape for their cushion, using knowledge of length to leave correct space for stuffing, seam and running stitch length, Art and Design - Designing a theme for their applique shapes (maybe around another topic)	
Digital	<b>Monitoring Devices</b>	
Context	Program a Micro: bit animal monitoring device that will alert the owner when the temperature is not optimal. Develop 3D CAD skills by learning how to navigate the Tinkercad interface and essential tools.	
Design	Researching (books, internet) for a particular (user's) animal's needs., Developing design criteria based on research., Generating multiple housing ideas using building bricks., Understanding what a virtual model is and the pros and cons of traditional and CAD modelling., Placing and manoeuvring 3D objects, using CAD., Changing the properties of, or combining one or more 3D objects, using CAD.	
Make	Understanding the functional and aesthetic properties of plastics., Programming to monitor the ambient temperature and coding an (audible or visual) alert when the temperature rises above or falls below a specified range.	
Evaluate	Stating an event or fact from the last 100 years of plastic history., Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices. • Explaining key functions in my program (audible alert, visuals)., Explaining how my product would be useful for an animal carer including, programmed features.	
Vocabulary	monitoring device, electronic, sensor, thermoscope, thermometer, research, design brief, design criteria, development, inventor, vivarium, programming loop, programming comment, alert, ambient, boolean, duplicate, copy, value, variable, model, sustainability, plastic, microplastics, decompose, plastic pollution, man-made, synthetic	
Recap	Do I know how to use coding software?	

<b>Skills application</b>	Science -Animals, including humans - finding out about the needs of animals, Computing- Using search engines to research animals, programming and debugging an animal monitor, using CAD skills to create virtual models, Geography - Considering how we can use the six Rs of sustainability to develop more sustainable habits, History - Learning about how thermometers have developed, learning about the history behind plastic use
<b>Structures</b>	<b>Bridges</b> Explore and experiment with a range of different bridge structures, forces and components involved in bridge building, before designing and making their own to test to destruction.
<b>Context</b>	After learning about various types of bridges and exploring how the strength of structures can be affected by the shapes used, create their own bridge and test its durability - using woodworking tools and techniques.
<b>Design</b>	Designing arch and truss bridges, modelling various methods of bridge-making
<b>Make</b>	Using triangulation for bracing, selecting appropriate tools and equipment such as saws and bench hooks to cut wood down to size and sandpaper to achieve a high-quality finish
<b>Evaluate</b>	Testing through trial and error to evaluate the successful and unsuccessful functional properties of a design and its materials
<b>Technical Knowledge</b>	Understanding the importance of compression and tension in bridge structures, establishing methods of reinforcing more complex structures to improve strength, stability and stiffness
<b>Vocabulary</b>	Abutment, accurate, arched bridge, beam bridge, bridge, compression, coping saw, evaluation, file, forces, mark out, measure, predict, reinforce, research, right-angle, sandpaper, set square, shape, strong structure, suspension bridge, tenon saw, tension, test, truss bridge.
<b>Skills application</b>	Maths - Measuring wood accurately to the nearest mm, draw 45° angles, Science - Using investigative methods to test the strength of a range of bridges, considering properties of materials
<b>Recap</b>	Do I know what a structure is? Do I know ways to make a structure strong and sturdy?