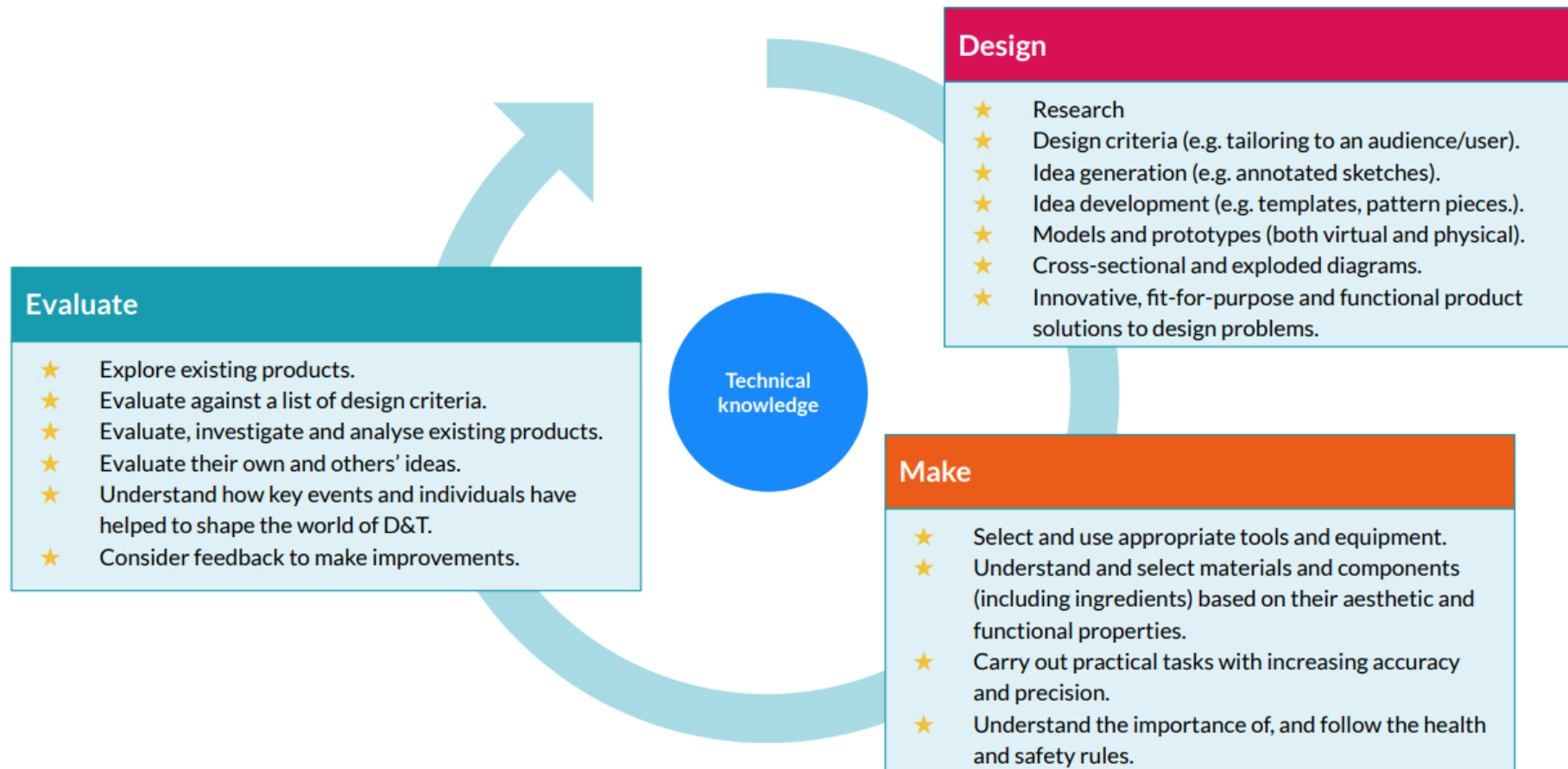




## Progression of knowledge and skills

The Design and technology National Curriculum outlines the three main stages of the design process: design, make and evaluate. Each unit follows these stages, to form a full project. Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical and technical understanding, required for each strand.



Progression of knowledge and skills

Reception

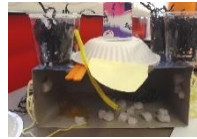
Year 1

Year 2

Structures - KNOWLEDGE

PROJECT

Hibernation Box



AUTUMN

The Cottage at Dropmore



SUMMER

Treehouse for the woodland area at school



SUMMER




- To know there are a range to different materials that can be used to make a model and that they are all slightly different.
- Making simple suggestions to join their models.
- To know that 'waterproof' materials are those which do not absorb water.

- To understand that the shape of materials can be changed to improve the strength and stiffness of structures.
- To understand that cylinders are a strong type of structure (chimney)
- To begin to understand that different structures are used for different purposes.
- To know that a structure is something that has been made and put together.

- Know how to make freestanding structures stronger, stiffer and more stable.
- Know and use technical vocabulary relevant to the project.
- To know that shapes and structures with wide, flat bases or legs are the most stable.
- To understand that the shape of a structure affects its strength.
- To know that materials can be manipulated to improve strength and stiffness.
- To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.
- To know that a 'strong' structure is one which does not break easily.
- To know that a 'stiff' structure or material is one which does not bend easily.

## Structures - SKILLS

Design	<ul style="list-style-type: none"> <li>• Beginning to show a basic understanding, through discussion, how to plan and create a purposeful design with support and guidance.</li> <li>• To experiment and explore with designs using play.</li> <li>• Providing a commentary whilst designing their product through discussion with peers and members of staff.</li> <li>• Being able to explain what they are making confidently</li> </ul>	<ul style="list-style-type: none"> <li>• Beginning to show an understanding, through discussion, how to plan and create a purposeful and functional design.</li> <li>• Showing an awareness of a beginning and end in their design.</li> <li>• To be able to draw their final design in a way which communicates their ideas in a clear way</li> </ul>	<ul style="list-style-type: none"> <li>• Beginning to show an understanding on how to plan and create a purposeful, functional and appealing design with an understanding of a particular individual or a group.</li> <li>• Start to order the main stages of making a product and explain the order of the stages.</li> <li>• Draw their final design and communicate their ideas. Use various templates, mock ups, drawings or ICT to do this.</li> <li>• Label according to discussion</li> </ul>
Make	<ul style="list-style-type: none"> <li>• Start to follow the main stages of making a product by following instructions.</li> <li>• To experiment with a variety of materials whilst making their product.</li> <li>• Join materials in a variety of ways</li> </ul>	<ul style="list-style-type: none"> <li>• Making stable structures from card, tape and glue.</li> <li>• Adapt designs</li> <li>• Follow instructions to make</li> </ul>	<ul style="list-style-type: none"> <li>• Make something according to a design criteria</li> <li>• Select materials according to their characteristics</li> <li>• Plan by suggesting what to do next.</li> <li>• Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices.</li> <li>• Select new and materials, components, reclaimed materials and construction kits to build and create their products.</li> </ul> <p>Use simple finishing techniques suitable for the products they are creating</p>
Evaluate	<ul style="list-style-type: none"> <li>• To give a verbal evaluation of what they like and dislike about their product</li> <li>• Consider what they would do differently if they were to do it again</li> <li>• To be able to comment on others work using support from staff</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate their ideas against simple design criteria, including intended user and purpose.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate own designs against a criteria</li> <li>• Explore a range of existing products related to their design criteria.</li> <li>• Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.</li> </ul>




			<ul style="list-style-type: none"> <li>Testing the strength of own structures. Identifying the weakest part of a structure. Evaluating the strength, stiffness and stability of own structure.</li> </ul>
<b>Structures - VOCAB</b>			
	Cut join fold fix plan design make like dislike	Weak strong top side corner point structure design, evaluate, make, user, purpose, ideas, product,	wall, tower, framework, base, edge, underneath, surface, thinner, thicker, straight, curved, metal, wood, plastic, design criteria, function
<b>Mechanisms - KNOWLEDGE</b>			
PROJECT	Easter Egg Card with slider SPRING TERM 	Moving storybook AUTUMN TERM 	Ferris wheels AUTUMN TERM 
	<ul style="list-style-type: none"> <li>To know a split pin can be used to attach</li> <li>To know you can control models movements with a split pin</li> </ul>	<ul style="list-style-type: none"> <li>To know that a mechanism is the parts of an object that move together.</li> <li>To know that a slider mechanism moves an object from side to side.</li> <li>To know that a slider mechanism has a slider, slots , guides and an object.</li> <li>To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.</li> </ul>	<ul style="list-style-type: none"> <li>To know that different materials have different properties and are therefore suitable for different uses</li> <li>To know the features of a ferris wheel include the wheel, frame, pods, a base an axle and an axle holder.</li> <li>To know that it is important to test my design as I go along so that I can solve any problems that may occur.</li> </ul>
<b>Mechanisms - SKILLS</b>			
Design	<ul style="list-style-type: none"> <li>Explaining how to use a split pin to control the movement.</li> <li>Design a moving card for an audience</li> </ul>	<ul style="list-style-type: none"> <li>Explaining how to adapt mechanisms, using bridges or guides to control the movement.</li> <li>Designing a moving story book for a given audience.</li> </ul>	<ul style="list-style-type: none"> <li>Selecting a suitable linkage system to produce the desired motion. • Designing a wheel.</li> </ul>

Make	<ul style="list-style-type: none"> <li>Follow a design to create moving models that use levers and sliders.</li> </ul>	<ul style="list-style-type: none"> <li>Following a design to create moving models that use levers and sliders.</li> </ul>	<ul style="list-style-type: none"> <li>Selecting materials according to their characteristics.</li> <li>Following a design brief.</li> </ul>
Evaluate	<ul style="list-style-type: none"> <li>Test a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.</li> <li>Review the success of a product by testing it with its intended audience.</li> </ul>	<ul style="list-style-type: none"> <li>Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.</li> <li>Reviewing the success of a product by testing it with its intended audience.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate different designs.</li> <li>Test and adapt a design.</li> </ul>

**Mechanisms – VOCAB**

	Sliding picture, sliding mechanism, join, build, shape	Adapt, input, template, assemble, model	design criteria wheel, Ferris Wheel, pods, axle, axle holder, frame, mechanical
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**Textiles - KNOWLEDGE**

PROJECT	Weaving  SUMMER 	Puppets  SPRING 	House animal pouches  SPRING 
	<ul style="list-style-type: none"> <li>To know that threading is putting one material through an object.</li> <li>To know that a design is a way of planning our idea before we start.</li> </ul>	<ul style="list-style-type: none"> <li>To know that there are various temporary methods of joining fabric by using thread, staples, glue or pins.</li> <li>To know that sewing is a method of joining fabric.</li> <li>To understand that different techniques for joining materials can be used for different purposes.</li> <li>To know that drawing a design idea is useful to see how an idea will look.</li> </ul>	<ul style="list-style-type: none"> <li>To know that different stitches can be used when sewing.</li> <li>To understand the importance of tying a knot after sewing the final stitch.</li> <li>To know that a thimble can be used to protect my fingers when sewing.</li> </ul>




**Textiles - SKILLS**

Design	<ul style="list-style-type: none"> <li>• Discussing what a good design needs.</li> <li>• Designing a simple pattern with paper.</li> <li>• Designing a simple pattern to weave</li> <li>• Choosing from available materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Using a template to create a design for a puppet</li> </ul>	<ul style="list-style-type: none"> <li>• Designing a pouch.</li> </ul>
Make	<ul style="list-style-type: none"> <li>• Exploring fine motor/threading and weaving (under, over technique) with a variety of materials.</li> <li>• Using a prepared needle and wool to practise threading.</li> </ul>	<ul style="list-style-type: none"> <li>• Cutting fabric neatly with scissors.</li> <li>• Using joining methods to decorate a puppet.</li> <li>• Sequencing steps for construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Selecting and cutting fabrics for sewing.</li> <li>• Decorating a pouch using fabric glue or running stitch.</li> <li>• Threading a needle.</li> <li>• Sewing running stitch, with evenly spaced, neat, even stitches to join fabric.</li> <li>• Neatly pinning and cutting fabric using a template.</li> </ul>
Evaluate	<ul style="list-style-type: none"> <li>• Reflecting on a finished product and comparing to their design.</li> </ul>	<ul style="list-style-type: none"> <li>• Reflecting on a finished product, explaining likes and dislikes.</li> </ul>	<ul style="list-style-type: none"> <li>• Troubleshooting scenarios posed by teacher.</li> <li>• Evaluating the quality of the stitching on others' work.</li> <li>• Discussing as a class, the success of their stitching against the success criteria.</li> <li>• Identifying aspects of their peers' work that they particularly like and why.</li> </ul>

### Textiles - VOCAB

	Sew, needle, weave, thread	decorate, design, fabric, glue, model, hand puppet, safety pin, staple, stencil, template	Fabric glue, knot, needle, needle threader, running stitch
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### Cooking and Nutrition - KNOWLEDGE

PROJECT	Rainbow Salad  SPRING		Smoothie  SPRING		Wraps  SPRING	
	<ul style="list-style-type: none"> <li>• I know some places where food comes from e.g. from plants, from the ground</li> <li>• To know a range of healthy and unhealthy foods</li> <li>• To know some basic recipes</li> </ul>	<ul style="list-style-type: none"> <li>• I know where a range of fruit and vegetables come from e.g. one that are farmed or grown at home.</li> <li>• I know that it is important to eat a healthy diet</li> <li>• I know fruit and vegetables are part of eating well.</li> </ul>		<ul style="list-style-type: none"> <li>• I know where a wider range of fruit and vegetables come from e.g. farmed or grown at home.</li> <li>• I know healthy and varied diet.</li> <li>• I know some food groups (carbohydrates, sugar)</li> </ul>		
<b>Cooking and Nutrition - SKILLS</b>						
Design	<ul style="list-style-type: none"> <li>• Design a recipe a class</li> </ul>	<ul style="list-style-type: none"> <li>• Design packaging for a recipe</li> </ul>		<ul style="list-style-type: none"> <li>• Design ideas based on a combination of foods</li> </ul>		
Make	<ul style="list-style-type: none"> <li>• Chop vegetables with support.</li> <li>• Butter bread with a knife independently</li> </ul>	<ul style="list-style-type: none"> <li>• Chop foods independently</li> </ul>		<ul style="list-style-type: none"> <li>• Chop foods safely</li> <li>• Constructing a meal that meets a design brief.</li> <li>• Grate foods to make a meal.</li> </ul>		
Evaluate	<ul style="list-style-type: none"> <li>• Tasting food I have made and give opinions on it</li> <li>• Describing some of the following when tasting food: look, feel, smell and taste.</li> <li>• Choosing my favourite packaging design and start to explain why.</li> </ul>	<ul style="list-style-type: none"> <li>• Tasting and evaluating different food combinations.</li> <li>• Describing appearance, smell and taste of different meals</li> <li>• Suggesting information to be included on packaging.</li> <li>• Comparing their own meal with someone else's</li> </ul>		<ul style="list-style-type: none"> <li>• Describing the taste, texture and smell of fruit and vegetables.</li> <li>• Taste testing food combinations and final products.</li> <li>• Describing the information that should be included on a label.</li> <li>• Evaluating food by giving a score</li> </ul>		
<b>Cooking and Nutrition - VOCAB</b>						
	Smell, taste, vegetables, chop, cut	Ingredients, healthy, recipe, smoothie, compare, evaluate		Appearance, dairy, balanced, carbohydrates, proteins, review, menu, design brief		