



Year 3 Design and Technology Curriculum – Spring Term

Theme: Shell Structures.

Curriculum objectives	Vocabulary				Links across the curriculum
<p><u>To design and make a 3D shape to protect a teacake.</u> (Projects on a page planning)</p> <p>To investigate and analyse a range of existing shell structures.</p> <p>To investigate ways structures can be strengthened/stiffened.</p> <p>To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes focussing on the purpose of the product.</p> <p>To select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.</p> <p>To select from and use a wider range of materials.</p> <p>To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p>	Keyword	Definition	Keyword	Definition	<p>Science –Discuss the properties and suitability of materials.</p> <p>Link to ‘The Body’ science topic, reinforcing the understanding that the skeleton protects the internal organs.</p> <p>Art – drawing skills.</p> <p>Spoken language – ask relevant questions to build understanding and their vocabulary.</p> <p>Mathematics- measures, Recognise and name 2D and 3D shapes.</p>
	Shell structure	A hollow structure with a thin outer covering.	Prism	A solid geometric shape with ends that are similar, equal and parallel.	
	3D shape	3 dimensional shapes.	Corrugating	Using a zig zag structure between two pieces of card	
	Net	The flat or opened out shape of an object.	Ribbing	Using cylinder shapes within 2 pieces of card.	
	Vertex	The corners of a solid geometric shape where the edges meet.	Laminating	Layering paper/card to add strength.	

Prior knowledge: <i>What specifically have pupils learned that is relevant to this unit that they are building upon?</i>	Future knowledge: <i>What specifically will pupils learn in the future that is relevant to this unit?</i>
Experience of using different joining, cutting and finishing techniques with paper and card. A basic understanding of 2D and 3D shapes and the properties of everyday materials in science.	Pupils will learn how to build frame structures.

Lesson Sequence	Key Knowledge	Key Skills
1. To explore shell structures and evaluate their effectiveness in protection.	<ul style="list-style-type: none"> Know shell structures e.g., packages (boxes) provide protection for their contents. Know how the structures have been constructed/ stiffened 	<ul style="list-style-type: none"> Explore, disassembly skills, evaluation skills.
2. To investigate how nets are constructed and they can be stiffened and strengthened.	<ul style="list-style-type: none"> Corrugating, laminating and ribbing are ways to strengthen and stiffen structures 	<ul style="list-style-type: none"> Cutting, scoring, folding, shaping, corrugating, laminating, ribbing skills.
3. To design a shell structure to protect a teacake (like a ribcage protecting the heart).	<ul style="list-style-type: none"> Certain materials and tools will be suitable and required to make the shell structure. 	<ul style="list-style-type: none"> Creative thinking Drawing and labelling skills.



4. To make a strong shell structure.	<ul style="list-style-type: none"> Laminating, ribbing and corrugating add strength and stiffness. 	<ul style="list-style-type: none"> Cutting, scoring, folding, shaping, corrugating, laminating, ribbing skills.
5. To evaluate their shell structure.	<ul style="list-style-type: none"> There are different techniques for strengthening materials, some are more effective than others. 	<ul style="list-style-type: none"> Evaluation skills. What went well... Even better if...

Themes and links

Themes	Where these are covered:	Links across the D and T curriculum	
Investigate	<ul style="list-style-type: none"> Lesson 1 and 2 	EYFS	
Design	<ul style="list-style-type: none"> Lesson 3 	1	
Make	<ul style="list-style-type: none"> Lesson 4 	2	
Evaluate	<ul style="list-style-type: none"> Lesson 5 	3	
		4	
		5	
		6	