



## St Andrews Knowledge and Skills Matrix – Design and Technology

<u>Year Group</u>	<u>Theme</u>	<u>Knowledge</u>	<u>Skill</u>
Nursery	Structures Joining materials	Names of equipment and their function Names of common materials  Vocabulary of size (big, bigger, biggest), length (long, longer, longest) and common 2d shapes	Using a variety of construction kits Fixing materials using masking tape, glue sticks, PVA Use scissors to snip, then cut around simple shapes Use hole punches Use simple slits and slots to join materials Fold paper
Reception		Names of equipment and materials and their function Vocabulary of size, length and 2d and 3D shapes	Using a variety of construction kits Fixing materials using masking tape, glue sticks, PVA, Sellotape, split pins, staplers Use scissors to cut around more complex shapes Use flanges to join structures
Year 1	Freestanding Structures	<ul style="list-style-type: none"> <li>• Know how to make freestanding structures stronger, stiffer and more stable.</li> <li>• Know and use technical vocabulary relevant to the project</li> </ul>	Select from a range of joining equipment Use scissors to cut with control Use rulers to draw straight lines Use braces, flanges, and buttresses
Year 2		Prior learning in Structures revisited and applied during Mechanisms unit, making vehicle chassis and bodies, and exploring K'nex construction vehicles	
Year 3	Shell Structures	Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. <ul style="list-style-type: none"> <li>• Develop and use knowledge of how to construct strong, stiff shell structures.</li> <li>• Know and use technical vocabulary relevant to the project</li> </ul>	Use Polydron construction kit to explore nets Use cutting, folding and joining techniques to make 3D shapes from 2D nets Use straws to make ribbing Layer card to laminate



Year 4		Prior learning in Structures revisited and applied during Electronic Systems unit, making shell structures to house light circuits	
Year 5	Frame Structures	<ul style="list-style-type: none"><li>• Understand how to strengthen, stiffen and reinforce 3-D frameworks</li><li>• Know and use technical vocabulary</li></ul>	Accurately measure and cut materials Select techniques to strengthen, stiffen and reinforce materials Use triangulation in their frame structures
Year 6		Prior learning in Structures revisited and applied during Mechanical Systems and Electrical Systems units, making frames for pulley systems and nightlights.	



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Nursery	Mechanisms	Know how to cause effects in mechanical toys and construction kits.	<p>Make pictures and models that include simple hinges e.g. lift-the-flap book, cut a door in a box, leaving the hinged side.</p> <p>Know how to join construction materials to make wheeled vehicles, gear systems.</p>
Reception	Mechanisms	Know how to cause effects in mechanical toys and construction kits.	<p>Makes products that use simple hinged mechanisms, e.g. laptop, drawbridge.</p> <p>Plan how to join construction materials to make wheeled vehicles, gear systems.</p>
Year 1	Mechanisms Sliders and Levers	<p>Explore and use slider and lever mechanisms.</p> <p>Know that different mechanisms produce different types of movement.</p> <p>Know and use technical vocabulary.</p>	Use tools and materials to make and join components for slider, lever, and wheel mechanisms.
Year 2	Mechanisms Wheels and Axles	<p>Explore and evaluate a range of products with wheels and axles.</p> <p>Distinguish between fixed and freely moving axles.</p> <p>Know and use technical vocabulary.</p>	<p>Explore and use wheels, axles, and axle holders.</p> <p>Select from and use a range of tools and equipment to cut, join, and to allow movement.</p>
Year 3	Mechanisms Levers and Linkages	<p>Know how linkage systems change input and output movement.</p> <p>Distinguish between fixed and loose pivots.</p>	<p>Make fixed and loose pivots.</p> <p>Measure, mark, cut and join materials to make a variety of linkage systems.</p>



		Know and use technical vocabulary.	Select a linkage system for a purpose.
Year 4			
Year 5			
Year 6	<b>Mechanisms</b>	Understand that mechanical systems have an input, process, and an output.  Understand how pulleys can be used to lift loads more easily.  Know and use technical vocabulary.	Make pulley systems using K'nex construction kits.  Make a mechanical pulley system with multiple pulleys.



<u>Year Group</u>	<u>Theme</u>	<u>Knowledge</u>	<u>Skill</u>
Nursery	Cooking and Nutrition	Knows that food and drinks affect our bodies. Can discuss effects of heating and freezing foods. Knows basic hygiene practices.	Prepare and handle ingredients hygienically. With support, combines ingredients to make hot and cold dishes.
Reception	Cooking and Nutrition	Knows that foods come from plants and animals. Understands some benefits of a healthy diet. Knows basic hygiene practices.	With support, prepares and makes a range of hot and cold dishes.
Year 1	Cooking and Nutrition	Know where fruit and vegetables come from. Know the basic principles of a healthy and varied diet.	Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate, and chop safely. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste
Year 2	Preparing Fruit and Vegetables	Know fruit and vegetables are part of <i>The Eatwell Plate</i> . • Know and use technical and sensory vocabulary	
Year 3	Cooking and Nutrition Healthy and Varied Diet	Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared, or caught.  Know how to use appropriate equipment and utensils to prepare and combine food.	Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.
Year 4		Know and use relevant technical and sensory vocabulary.	
Year 5	Cooking and Nutrition Celebrating Culture and Seasonality	Understand how key chefs have influenced eating habits to promote varied and healthy diets.  Understand about seasonality in relation to food products and the source of different food products.	Know how to use utensils and equipment including heat sources to prepare and cook food.  Write a step-by-step recipe, including a list of ingredients, equipment and utensils.



Year 6

Know and use relevant technical and sensory vocabulary.

Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.

Make, decorate, and present food product appropriately for the intended user and purpose.