THE VAYNOR CURRICULUM

DESIGN & TECHNOLOGY SEQUENCE

	Designing	Technical Knowledge	Making	Evaluating	Cooking & Nutrition
Year 1	**Structures** Generate ideas from their own experience. Learn the importance of a clear design criteria. Design for a given audience including individual preferences and requirements in a design. Creating clearly labelled drawings. Select materials they will need.	**Structures** Build structures – stronger, stiffer and more stable To understand that the shape of materials can be changed to improve the strength and stiffness of structures. 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. 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** Use scissors to cut,sometimes with help. Make stable structures from card, tape and glue. Make a structure according to design criteria. Create joints and structures from paper/card and tape. Build a strong and stiff structure by folding paper.	Recognise what they have done well in their product. Talk about what they like or dislike about their work. Begin to suggest simple improvements. Listen to others' opinions about their work.	**Smoothies** To chop fruit and vegetables safely to make a smoothie. To juice fruits safely to make a smoothie. To know that a blender is a machine which mixes ingredients together into a smooth liquid. To know that a fruit has seeds. To know that fruits grow on trees or vines. To know that vegetables can grow either above or below ground. To know that vegetables is any edible part of a plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber).
		Mechanisms Explore and use mechanisms (lever, sliders) in their products To know that a mechanism is the parts of an object that move together. To know that a slider mechanism moves an object from side to side.	**Mechanisms** Follow a design to create moving models that use levers and sliders. Make linkages using card for levers and split pins for pivots. Experiment with linkages adjusting the widths, lengths and thicknesses of card used.		

		To know that a slider mechanism has a slider, slots , guides and an object. To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.	Cut and assemble components neatly.		
Year 2	Generate ideas from their own experience and the wider world. Generate a clear design criteria. Design for a given audience and say how it will be useful (problem will be solved) Include individual preferences and requirements in a design. Create clearly labelled drawings and model. Make lists of materials they will need.	**Mechanisms** Explore and use mechanisms (wheels and axels) in their products To know that mechanisms are a collection of moving parts that work together as a machine to produce movement. To know that there is always an input and output in a mechanism. To know that an input is the energy that is used to start something working. To know that an output is the movement that happens because of the input To know that wheels need to be round to rotate and move. To understand that for a wheel to move it must be attached to a rotating axle. To know that an axle moves within an axle holder which is fixed to the vehicle or toy. To know that the frame of a vehicle (chassis) needs to be balanced.	**Mechanisms** Safely use scissors to cut materials (e.g. card, straws, wooden dowels). Begin selecting appropriate tools for joining (e.g. glue, tape, split pins). Attach wheels to axles securely so they rotate freely. Use split pins or similar fasteners to allow rotational movement. Experiment with different joining methods to improve stability. Measure and mark materials before cutting. Use templates or guides to ensure accuracy.	Recognise strengths and areas for improvement in their product. Use like/dislike language with reasons. Predict how changes might improve the finished product. Seek out and respond to feedback from others.	**Savory Wraps** To chop foods safely. To construct a wrap that meets a design brief. To grate foods safely. To snip smaller foods instead of cutting. To know that 'diet' means the food and drink that a person or animal usually eats. To understand what makes a balanced diet. To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar. To understand that I should eat a range of different foods from each food group, and roughly how much of each food group. To know that 'ingredients' means the items in a mixture or recipe.

		Textiles To know that threading is putting one material through an object. To know that drawing a design idea is useful to see how an idea will look. To know that sewing is a method of joining fabric. To know that different stitches can be used when sewing. To understand the importance of tying a knot after sewing the final stitch. To know that a thimble can be used to protect my fingers when sewing.	**Textiles** To be able to follow basic safety rules. To cut fabric neatly with scissors. To be able to sequence steps for construction. To selecting and cut fabrics for sewing. To decorate using fabric glue or running stitch. To be able to thread a needle. To have a go at sewing a running stitch, with evenly spaced, neat, even stitches to join fabric.		
Year 3	Use what they know about the properties of materials. Apply what they know about existing products when planning and designing. Investigate a range of products to see how they work. Design a product and select materials to create a desired effect Generate ideas using thumbnail sketches and exploded diagrams. Learn that different types of drawings are used in design to explain ideas clearly. Develop design criteria for a specific purpose.	**Structures** To apply their understanding of how to strengthen, stiffen and reinforce more complex structures. To understand what a frame structure is.	**Structures** Create special features for individual designs. Create a range of different shaped frame structures. Select appropriate materials to build a strong structure and cladding. Reinforce materials to strengthen a structure. Create a design in accordance with a plan.	Clearly explain their design choices and outcomes. Suggest specific improvements based on evaluation. Reflect on how well their product meets the design criteria. Identify where evaluation has led to changes in their design.	**Crumbles** Follow the instructions within a recipe Taste seasonal ingredients. Select seasonal ingredients. Peel ingredients safely. Cut safely with a vegetable knife. To know that not all fruits and vegetables can be grown in the UK. To know that climate affects food growth. To know that vegetables and fruit grow in certain seasons. To know that cooking instructions are known as a 'recipe'. To know that imported food is food which has been brought into the country.
		Mechanisms Begin to understand how mechanisms work. Recognise pneumatic systems in everyday objects (e.g. car boot, adjustable chair.) To understand that a mechanical system can allow us to move something more easily.	**Mechanisms** Select equipment required for a series of tasks based on the plan. Explain why each piece is suitable for each stage. Suggest simple safety rules based on their understanding of tool dangers. Participate in discussions about		

		To know that mechanical systems have more than one mechanism that moves to make them work. To know that mechanical systems are often hidden in products to make them look more appealing. To know that pushing air can be used to move a mechanism. To know that pivots can be used to create more movement in the mechanical system. To know that a combination of mechanisms can improve a product.	classroom safety procedures. Cut out more complex shapes accurately. Handle different sizes and types of scissors with confidence. Use PVA glue to join corrugated card and light wood (e.g. balsa wood). Choose shapes to suit the function of a product. Paint or colour precisely to improve the finish. Make facades from a range of materials. Seal edges with tape to cover gaps in joins.		To know that exported food is food which has been sent to another country. To know that eating seasonal foods can have a positive impact on the environment. To know that similar coloured fruits and vegetables often have similar nutritional benefits.
Year 4	Use what they know about the properties of materials. Apply what they know about existing products when planning and designing, considering budget. Investigate a range of products to see how they work. Design a product and select materials to create a desired effect and meet specific users' views. Generate ideas using thumbnail sketches and exploded diagrams.	**Textiles** To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. To know that when two edges of fabric have been joined together it is called a seam. To know that it is important to leave space on the fabric for the seam. To understand that some products are turned inside out after sewing so the stitching is hidden.	**Textiles** Follow design criteria to create a cushion. Select and cut fabrics with ease using fabric scissors. Thread needles with greater independence. Tye knots with greater independence. Sew cross stitch to join fabric. Decorate fabric using appliqué. Complete design ideas with stuffing and sewing the edges.	Justify what they like or dislike about their product using technical vocabulary. Evaluate their product against original design criteria and user needs. Carry out tests and use results to inform improvements. Reflect on feedback and make considered changes to improve quality and function.	**Breads** Follow a baking recipe, including the preparation of ingredients. Cook safely, following basic hygiene rules. Adapt a recipe to meet the requirements of a target audience To know that the amount of an ingredient in a recipe is known as the 'quantity.' To know that safety and hygiene are important when cooking. To know the following cooking techniques: sieving, measuring, stirring, and shaping.

	Make ongoing sketches and annotations. Use different types of drawings to explain ideas clearly. Developing design criteria for a specific purpose.	**Electrical Systems** To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit. To understand common features of an electric product (switch, battery or plug, dials, buttons etc.). To list examples of common electric products (kettle, remote control etc.). To understand that an electric product uses an electrical system to work (function). To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits. To know that an electrical circuit must be complete for electricity to flow. To know that a switch can be used to complete and break an electrical circuit.	**Electrical Systems** Measure and mark materials out using a template or ruler. Fit an electrical component (bulb). Learn ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge). Use appropriate equipment to cut and attach materials.		To understand the importance of budgeting while planning ingredients for bread.

Design & Technology Vocabulary				
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**
draw, ideas, build, make, like, dislike, scissors, thread, chop	materials, designer, product, construct, structure, moving parts, tools, outcome, equipment	stronger, stiffer, stable, diagram, components, joining, folding, rolling, binca fabric, template, assemble	mechanical axel, lever, criteria, stable, strong, durable, audience, packaging, sliders	mechanism function, electrical, purpose, finish, model, linkages, cams, pulleys, gears, functional products

SMSC in DT

Spiritual	Social
Providing opportunities to wonder at human achievement reflecting on ingenious products and inventions, the diversity of materials and ways in which design technology can improve the quality of life. Develop determination to succeed e.g. finding solutions to problems and in doing so improve lives. Giving pupils the opportunity to explore and develop belief in themselves. Encouraging pupils to explore and develop what animates themselves or others. Developing a climate and ethos within which all pupils can grow and flourish, respect others and be respected. Enable pupils to make connections between aspects of their learning e.g. use of triangles to develop a strong structure due to mathematical knowledge Encourage pupils to relate their learning to a wider frame of reference – forexample, asking why?, how? In doing so, enhance their understanding of why technological advancements have occurred.	Encouraging pupils to work co-operatively. Providing opportunities for team building activities that develop the skill of collaborative working and reflect the principles of a democratic society. Helping pupils to develop personal qualities which are valued in civilised society, eg thoughtfulness, honesty, respect for difference, moral principles. Building independence and resilience through the development of design to solve aproblem. Providing opportunities for pupils to exercise leadership and responsibility when workingcollaboratively and in doing so recognising others' strengths and sharing ideas and resources for greater overall development. Providing positive and effective links with the world of work and wider community.
Moral	**Cultural**
Encouraging pupils to take responsibility for their actions; for example, in respect of property, care of the environment and developing codes of behaviour. Awareness of moral dilemmas created by technological advancements; the impact of 'winners and losers' ethos'	Recognising and nurturing particular gifts and talents. Reinforcing the school's cultural values through displays, posters, and exhibitions etc. Understanding how different cultures have contributed to technology

British Values

British values in Design Technology

In Design Technology, children are given the opportunity to be creative and inventive through practical and investigative activities. At The Vaynor First school, children take part in Food Technology, learning about British food and food from other cultures, as well as sharing and respecting each other in a collaborative activity. Through both project work and cross curricular topics children are encouraged to investigate existing British products or designs and learn or improve new skills and techniques. Children then have the opportunity to use their acquired knowledge to design their own products and further develop their ideas through modification and evaluation.

Democracy is incorporated by examining the influence of British designers.

Individual liberty - children are taught to express their opinions in terms of their designs.

Sustainability is emphasised by encouraging the use of recycled products, together with environmental issues – materials, manufacturing and sourcing.

Mutual respect and tolerance of those with different faiths and beliefs is embedded in children's learning in Design Technology.

Design work is inclusive of other religions and does not offend in terms of colours, imagery and texts.