

THE VAYNOR CURRICULUM

DESIGN & TECHNOLOGY SEQUENCE



INTENT



Love for Learning:

Children will develop a love for Design and Technology and embrace the learning opportunities to be self-confident, motivated problem solvers inspired by engineers, designers, chefs and architects with the drive to change our world and perspectives.



Enquiring Minds:

Children will develop critical thinking and problem-solving skills that are applied to real life contexts. We strive to empower our pupils to become competent problem solvers able to use the language, technical knowledge and understanding of the processes of design to solve real life problems.



World Wise:

Design and technology is all around us. The skills developed will enable our pupils to play an active part in the world giving insight into the worlds of textiles, electronics, mechanics, structures, food production and design whilst understanding how key events and individuals have helped to shape our global world.

	Designing	Making	Evaluating	Technical Knowledge	Cooking and Nutrition
EYFS	<p>Talk about what they want to make.</p> <p>Planning and adapting initial ideas to make them better (e.g. change from using glue to masking tape when making a model).</p> <p>Discuss and notice materials around them.</p> <p>Joining materials using Sellotape, glue and split pins with support.</p>	<p>Make models randomly.</p> <p>Learn to construct with a purpose in mind.</p> <p>Observe closely and replicate a structure, e.g. of a church out of small wooden bricks after a visit there.</p> <p>Use the language of designing and making "join", "build", "shape".</p>	<p>Be excited about what they have made.</p> <p>Exploration – build and join for a purpose and test their models (building a boat and test it floats in the water tray).</p> <p>Use of evaluative and comparative language, "longer", "shorter", "heavier", "stronger" – Vocabulary links to Maths.</p>	<p>Use a range of tools e.g. scissors glue, string, hole punch, stamps, rolling pin, cutter, grater.</p>	<p>Begin to understand some of the tools, techniques and processes involved in food preparation.</p> <p>Stirring, mixing, pouring, blending incookery activities</p> <p>Discussion about hygiene and appropriate use of senses when tasting food.</p> <p>Discussing healthy foods and the importance of drinking water – links to PSED managing self.</p>

<p>Year 1</p>	<p>Generate ideas from their own experience. Talk about their ideas and say what will be done. Describe what they want to do using pictures and words. Make lists of materials they will need.</p>	<p>Know the features of some familiar products. Join two materials together, often with glue. Use scissors to cut, sometimes with help Make simple models, not necessarily with a purpose. Use simple construction kits e.g. Lego.</p>	<p>Recognise the characteristics of familiar products. Know how some moving objects work e.g. levers, sliders, and flaps. Use simple terms to talk about their own and others' work. Identify materials and mechanisms in familiar products.</p> <p>Existing products Explore What products are Who products are for What products are for How products work and can be used What materials products are made from What they like and dislike about products.</p>	<p>Know about the simple working characteristics of materials and components. Know about the movement of simple mechanisms such as levers, sliders, and flaps. Task: Make a moving picture of them as part of 'All About Me' cross curricular unit using levers and sliders.</p> <p>Know how freestanding structures can be made stronger, stiffer, and more stable. Know the correct technical vocabulary for the projects they are undertaking. Tasks: make a new throne for the King from their topic story - linked to English. Make sure it is stable enough and doesn't collapse - links to materials in science.</p>	<p>Where food comes from: Know that all food comes from plants or animals. That food has to be farmed, grown elsewhere, or caught. Know the benefits of fruit and vegetables. Food preparation, cooking, and nutrition Know about basic hygiene and safety. That everyone should eat at least five portions of fruit and vegetables every day. How to prepare simple dishes safely and hygienically, without using a heat source. How to use techniques such as cutting, peeling and grating. Tasks: Make a healthy ice lolly – link to maths by creating a class pictogram of the most popular fruits.</p>
<p>Year 2</p>	<p>Generate ideas, and plan what to do next, using their experience of materials and components. Use their knowledge of some working characteristics of materials when designing. Use wheels, sliders, and levers in plans. Use plans to show how to put their ideas into practice. Say how the product will be useful to the user. Draw pictures with labels, with some text.</p>	<p>Begin to select tools for folding, joining, rolling. Measure out and cut fabric. Use a simple template for cutting out. Practise skills before using them. Use simple finishing techniques Select tools and techniques appropriate to the job. Follow basic safety rules. Task: textiles/sewing – Create a hanging Christmas decoration.</p>	<p>Talk about how moving objects work. Describe how a commercial product works. Use like and dislike when evaluating or describing. Explain why some products are useful. Use digital photography to present design or finished work. Recognise what they have done well and talk about what could be improved. Seek out the views and judgements of others. Predict how changes will improve the finished product.</p> <p>Existing products Explore</p>	<p>Know about the simple working characteristics of materials and components. Know about the movement of simple mechanisms such as levers, sliders, wheels and axles.</p> <p>Task: Create a moving Victorian toy including wheels and axles. Know the correct technical vocabulary for the projects they are undertaking.</p>	<p>Understand main rules of food hygiene. Understand and use the term ingredient. Use simple scales or balances. Where food comes from: Know that all food comes from plants or animals. That food has to be farmed, grown elsewhere, or caught. Know the benefits of fruit and vegetables. Food preparation, cooking, and nutrition Know about basic hygiene and safety. How to name and sort foods into the five groups in the eatwell plate.</p>

			<p>What products are Who products are for What products are for</p> <p>How products work and can be used What materials products are made from</p> <p>What they like and dislike about products.</p>		<p>That everyone should eat at least five portions of fruit and vegetables every day.</p> <p>How to prepare simple dishes safely and hygienically, without using a heat source.</p> <p>How to use techniques such as cutting, peeling and grating.</p> <p>Task: create a simple dish linked to 'Titanic' topic. E.g. sandwiches, soup, fruit salad</p>
Year 3	<p>Use others to help generate their ideas.</p> <p>Use what they know about the properties of materials.</p> <p>Plan their work to include a range of joins.</p> <p>Ensure that plans are realistic and appropriate for the aim.</p> <p>Show the order of working in plans.</p> <p>Use models, pictures, and words in designs.</p> <p>Make increasing use of computing to plan ideas.</p> <p>Recognise that designs must meet a range of needs.</p> <p>Say why something will be useful.</p> <p>Apply what they know about mechanisms to create movement when planning and designing.</p> <p>Investigate a range of products to see how they work.</p>	<p>Measure and cut out using centimetres and weigh in grams.</p> <p>Choose tools and equipment which are appropriate for the job.</p> <p>Prepare for work by assembling components together before joining.</p> <p>Use scoring and folding for precision.</p> <p>Work out how to make models stronger.</p> <p>Alter and adapt materials to make them stronger.</p> <p>Combine a number of components together in different ways.</p> <p>Make the finished product neat and tidy.</p> <p>Task: Structures - make a shelter from the Stone Age – link to topic.</p>	<p>Be clear about their ideas when asked.</p> <p>Can alter and adapt original plans following discussion and evaluation.</p> <p>Recognise what has gone well but suggest further improvements for the finished article.</p> <p>Suggest which elements they would do better in the future.</p> <p>Identify where evaluation has led to improvements.</p> <p>Existing products</p> <p>Explore</p> <p>How well products have been designed</p> <p>How well products have been made</p> <p>Why materials have been chosen</p> <p>What methods of construction have been used</p> <p>How well products work</p> <p>How well products achieve their purposes</p> <p>How well products meet user needs and wants</p> <p>Who designed and made the products</p> <p>Where and when the</p>	<p>Know how mechanical systems such as levers and linkages work.</p> <p>Task: Make small working Roman catapult.</p> <p>Know that materials have both functional properties and aesthetic qualities.</p> <p>Know how to use learning from science to help design and make products work.</p> <p>Know how to use learning from mathematics to help design and make products work.</p> <p>The correct technical vocabulary for the projects they are undertaking.</p> <p>Task: Structures - make a shelter from the Stone Age – link to topic and science – materials.</p>	<p>Understand safe food storage.</p> <p>Begin to select their own ingredients when cooking or baking.</p> <p>Where food comes from</p> <p>That food is grown (such as tomatoes, wheat, and potatoes), reared (such as pigs, chickens and cattle), caught (such as fish) in the UK, Europe, and the wider world.</p> <p>Food preparation, Cooking and Nutrition</p> <p>How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Task:</p> <p>Design a new package for a sandwich and then make the sandwich.</p> <p>In early KS2 pupils should know:</p> <p>That a healthy diet is made</p>

			<p>products were designed and made</p> <p>Whether products can be recycled or reused.</p> <p>Key events and individuals</p> <p>Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products e.g. famous architects Norman Foster and Zaha Hadid – linked to structures.</p>		<p>from a variety and balance of different food and drink, as depicted in The Eatwell plate that to be active and healthy, food and drink are needed to provide energy for the body link to Science – the human body.</p>
Year 4	<p>Collect and use information to generate ideas.</p> <p>Consider the way the product will be used.</p> <p>Understand designs must meet a range of criteria and constraints.</p> <p>Take users' views into account.</p> <p>Understand how some properties can be used – e.g. waterproof.</p> <p>Think ahead about the order of their work.</p> <p>Add electricity to create motion or make light.</p> <p>Produce step by step plans.</p> <p>Make ongoing sketches and annotations.</p> <p>Use their design criteria to evaluate their completed products.</p>	<p>Increasingly model their ideas before making.</p> <p>Measure accurately to centimetres and grams.</p> <p>Combine materials for strength and to improve how the product looks.</p> <p>Use permanent and temporary fastenings to join.</p> <p>Join with a greater range of techniques – e.g. staples.</p> <p>Strengthen joins and corners in a variety of ways.</p>	<p>Talk about what they like and dislike, giving reasons.</p> <p>Develop their designs through their own reflection and the evaluation of others.</p> <p>Carry out tests before making improvements.</p> <p>Existing products</p> <p>Explore</p> <p>How well products have been designed</p> <p>How well products have been made</p> <p>Why materials been chosen</p> <p>What methods of construction have been used</p> <p>How well products work</p> <p>How well products achieve their purposes</p> <p>How well products meet user needs and wants</p> <p>Who designed and made the products</p> <p>Where and when the products were designed and made</p> <p>Whether products can be recycled or reused</p> <p>Task: Design and make a fabric rainforest toy animal.</p>	<p>Know how mechanical systems such as levers and linkages or pneumatic systems create movement.</p> <p>Know that a single fabric shape can be used to make a 3D textile product.</p> <p>Know that materials have both functional properties and aesthetic qualities.</p> <p>Know how to use learning from science to help design and make products work.</p> <p>Know how to use learning from mathematics to help design and make products work.</p> <p>Know that mechanical and electrical systems have an input, process, and output.</p> <p>Know how simple electrical circuits and components can be used to create functional products.</p> <p>Know how to program a computer to control their products.</p> <p>Task: Make an Anderson shelters including a simple</p>	<p>Evaluate food by taste, texture, flavour etc.</p> <p>Where food comes from</p> <p>that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</p> <p>Food preparation, Cooking and Nutrition</p> <p>How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading, and baking.</p> <p>In early KS2 pupils should also know:</p> <p>That a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate. That to be active and healthy,</p>

			Key events and individuals Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products e.g. Cath Kidston – British designer.	circuit which incorporates a bulb. The correct technical vocabulary for the projects they are undertaking.	food and drink are needed to provide energy for the body. Task: Make Viking bread – linked to topic work.
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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 – foreexample, 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 a problem. Providing opportunities for pupils to exercise leadership and responsibility when working collaboratively 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 study British architects and designers such as Norman Foster. 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 for example by examining the influence of British designers (such as Cath Kidston).

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.