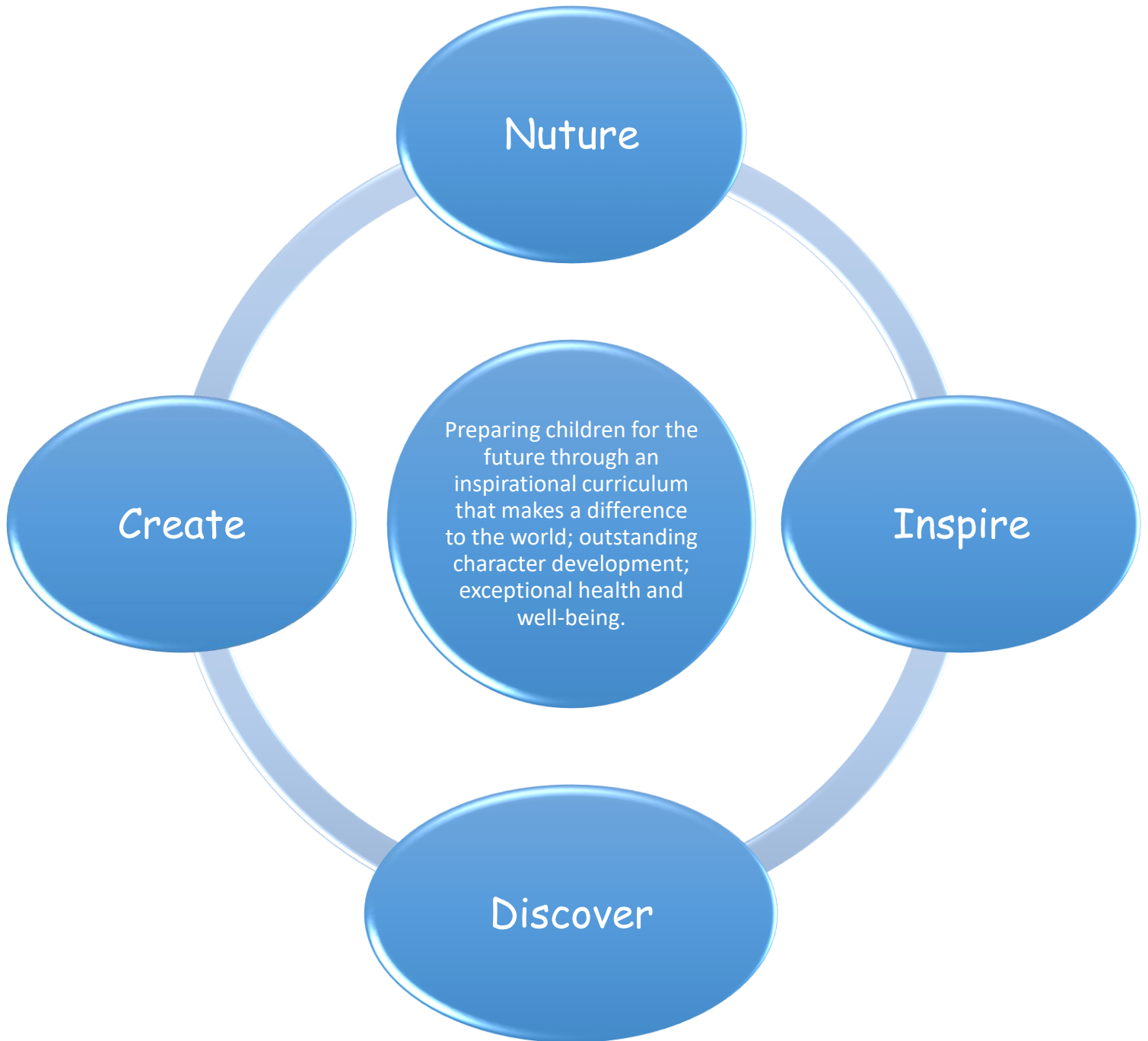




Stathern Primary School
'Nurture, Inspire, Discover, Create'

DT Curriculum Vision and Skills





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Intent and Design – What are we trying to achieve?

Vision

•As a school we aim to:

- Preparing children for the future through an inspirational curriculum that makes a difference to the world; outstanding character development; exceptional health and well-being.

•In DT we aim to:

- inspire children to see problems in the world as opportunities, where design, technical skill and innovation can make a meaningful difference to the world in which we live.

Motto

- Nurture** – We care for each other and celebrate our differences, achievements and contributions to the world. We support each other through challenges and difficulties, recognising that the mental health and well-being of both ourselves and those around us is one of the key factors in our happiness and success.
- Inspire** – We inspire each other to greater heights through our communication, actions, support and achievements. We take inspiration from the people, places and events all around us. We recognise that whether a situation is good or bad, there is always learning and growth to be gained. These situations inspire us to make positive change a reality.
- Discover** – We are excited to discover new knowledge, skills, people and places. We are open to alternative ideas beyond our own and enjoy exploring the thoughts, conversations and solutions that others bring to different situations and experiences.
- Create** – We enjoy working together to create new and exciting solutions to make our world a better place. We believe we can make a difference no matter how large or small. Our school is a place where we can experiment and take risks in order that we might better ourselves and the world we live in.

School Values

•We believe in...

- Developing outstanding character** and attitudes to learning in preparation for future challenges in a changing world.
- Promoting physical and mental health** in a happy caring environment that is supportive and encouraging.
- Making a difference** to the world we live in through creating enterprising solutions to local and global issues.
- Developing social skills and an appreciation of **each person's unique strengths**, respecting and embracing different cultures, races and religions.
- Fostering a **deep sense of care and nurture** for the world we live in and the people around us.
- Creating a broad range of **inspiring experiences** that allows children to develop skills and find their place in the world.
- Working in **partnership with our school community and beyond to build brighter futures**.
- High expectations alongside a **culture of self-awareness, reflection and self-improvement**.

Aims of our PSHCE Curriculum

•Our inspirational DT curriculum will enable:

- The children at Stathern Primary to achieve an understanding of how design and shifts in technology has shaped our world, reflecting upon the influence of previous innovators and inspiring children to see the vital role they could play in engineering changes within our future. Projects are planned to ensure children are designing and making a real product with a specific user and purpose in mind. Embedding projects within our wider curriculum work, carefully planned DT projects make the most of opportunities for children to apply learning in subjects such as science, maths, art and computing, inspiring an understanding of the 'bigger picture' in these transferable skills. Children's knowledge of materials, textiles, components, mechanisms, structures, electronic systems, food and hygiene build progressively throughout our curriculum, ensuring children are empowered by a broad bank of DT knowledge from which to draw. By engaging in an iterative design process informed by a series of focused skill tasks and engaging in testing and refining products, pupils appreciate the entire design problem solving process. Wide ranging and collaborative projects give children an appreciation of different strengths, and encourage resourcefulness, whether that be through people, materials, tools or skills sets. Incorporating their own and others views in the creation and evaluation of their products for themselves and the wider global community, fosters their sense care and nurture for the world. Underlining the whole process is the power that the core themes of self-awareness, reflection and self improvement have in creating the shifts that shape our world, inspiring our students to become risk takers and innovators of change.

Learning Intentions

- Our DT curriculum is designed to cover the core themes of design, make, evaluation, building technical knowledge including in cooking and nutrition. These are broken into projects that are taught progressively across both key stages.
- We aim to: develop creative, technical and practical expertise needed for children to perform tasks confidently and for pupils to participate in an increasingly technological world.
- Build and apply a repertoire of knowledge, understanding and skill to design and make high quality prototypes and products for a range of users.
- Critique, evaluate and test their ideas, products and the work of others.
- To use and apply the principles of nutrition and learn cooking skills.



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Implementation and Organisation – How will we arrange our learning?

School Focus

Reading Challenge Vocabulary and Communication Progressive Skills Transferable skills Positive Mental Health and wellbeing

PSHCE Developmental Foci

Texts in DT are understood and discussed for meaning including inference for details such as the needs of other or consequences of actions

Lessons are planned to challenge pupils both academically and developmentally

Children are able to use the correct vocabulary to discuss elements of their technical knowledge and communicate this effectively in writing and speech

A DT specific, progressive and challenging skill set is explicitly taught and assessed

Work written and recorded in DT will reflect and reinforce the skills taught in Science, Reading, Writing, Computing, Art and Maths.

Our DT curriculum supports SEMH by inspiring pupils to see problems as opportunities for change, and themselves as people who can risk take and instigate these changes

Contexts

Evaluative tasks examining existing products against a clear design brief

Focused tasks building technical DT knowledge in a specific area.

Design tasks communicating ideas and stages of development

Make and evaluation process, testing and refining.

	R	Y1/2	Y3/4	Y5/6	
Planning on a Page, DT Association, Soil Association	Textiles				Risk assessments, working safely, collaboration, school ethos
	Mechanisms				
	Structures				
	Cooking and Nutrition				
	IT Control and Monitoring				
	Electronic Systems				



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Design, Make, Evaluate				
	YR	Y1/2	Y3/4	Y5/6
Design: Innovators			Inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products	
Design: Understanding users and purpose		<p>State what products they are designing and making</p> <p>Describe what their products are</p> <p>Say how they will work</p> <p>Say how they will make them suitable for their intended users</p> <p>Use simple design criteria</p>	<p>describe the purpose of their products</p> <ul style="list-style-type: none"> indicate the design features of their products that will appeal to intended users explain how particular parts of their products work gather information about the needs and wants of particular individuals and groups develop their own design criteria and use these to inform their ideas 	<ul style="list-style-type: none"> describe the purpose of their products indicate the design features of their products that will appeal to intended users explain how particular parts of their products work carry out research, using surveys, interviews, questionnaires and web-based resources identify the needs, wants, preferences and values of particular individuals and groups <p>develop a simple design specification to guide their thinking</p>
Design: Generating and communicating ideas	<p><u>Expressive Arts and Design:</u></p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;</p> <p>Share their creations, explaining the process they have used;</p>	<ul style="list-style-type: none"> generate ideas by drawing on their own experiences use knowledge of existing products to help come up with ideas develop and communicate ideas by talking and drawing model ideas by exploring materials, components and construction kits and by making templates and mock-ups <p>use information and communication technology, where appropriate, to develop and communicate their ideas</p>	<ul style="list-style-type: none"> share and clarify ideas through discussion model their ideas using prototypes and pattern pieces use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas use computer-aided design to develop and communicate their ideas generate realistic ideas, focusing on the needs of the user make design decisions that take account of the availability of resources 	<ul style="list-style-type: none"> share and clarify ideas through discussion model their ideas using prototypes and pattern pieces use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas use computer-aided design to develop and communicate their ideas generate innovative ideas, drawing on research make design decisions, taking account of constraints such as time, resources and cost
Make: Iterative Design		<p>plan by suggesting what to do next</p> <p>select from a range of tools and equipment, explaining their choices</p> <p>select from a range of materials and components according to their characteristics</p>	<ul style="list-style-type: none"> select tools and equipment suitable for the task explain their choice of tools and equipment in relation to the skills and techniques they will be using select materials and components suitable for the task 	<ul style="list-style-type: none"> select tools and equipment suitable for the task explain their choice of tools and equipment in relation to the skills and techniques they will be using select materials and components suitable for the task



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			<ul style="list-style-type: none"> explain their choice of materials and components according to functional properties and aesthetic qualities order the main stages of making 	<ul style="list-style-type: none"> explain their choice of materials and components according to functional properties and aesthetic qualities produce appropriate lists of tools, equipment and materials that they need formulate step-by-step plans as a guide to making
<p>Make: Skills and Techniques.</p>	<p><u>Expressive Arts and Design:</u></p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;</p>	<ul style="list-style-type: none"> follow procedures for safety and hygiene use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components measure, mark out, cut and shape materials and components assemble, join and combine materials and components use finishing techniques, including those from art and design 	<ul style="list-style-type: none"> follow procedures for safety and hygiene use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components measure, mark out, cut and shape materials and components with some accuracy assemble, join and combine materials and components with some accuracy apply a range of finishing techniques, including those from art and design, with some accuracy 	<ul style="list-style-type: none"> follow procedures for safety and hygiene use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components accurately measure, mark out, cut and shape materials and components accurately assemble, join and combine materials and components accurately apply a range of finishing techniques, including those from art and design use techniques that involve a number of steps demonstrate resourcefulness when tackling practical problems
<p>Evaluate: Own ideas/ products</p>	<p><u>Expressive Arts and Design:</u></p> <p>Share their creations, explaining the process they have used;</p>	<ul style="list-style-type: none"> talk about their design ideas and what they are making make simple judgements about their products and ideas against design criteria suggest how their products could be improved 	<ul style="list-style-type: none"> identify the strengths and areas for development in their ideas and products consider the views of others, including intended users, to improve their work refer to their design criteria as they design and make use their design criteria to evaluate their completed products 	<ul style="list-style-type: none"> identify the strengths and areas for development in their ideas and products consider the views of others, including intended users, to improve their work critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make evaluate their ideas and products against their original design specification
<p>Evaluate: Existing products</p>		<ul style="list-style-type: none"> what products are who products are for what products are for how products work how products are used where products might be used what materials products are made from 	<ul style="list-style-type: none"> how well products have been designed how well products have been made why materials have been chosen what methods of construction have been used how well products work 	<ul style="list-style-type: none"> how well products have been designed how well products have been made why materials have been chosen what methods of construction have been used how well products work



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		<ul style="list-style-type: none"> what they like and dislike about products 	<ul style="list-style-type: none"> how well products achieve their purposes how well products meet user needs and wants who designed and made the products where products were designed and made when products were designed and made whether products can be recycled or reused 	<ul style="list-style-type: none"> how well products achieve their purposes how well products meet user needs and wants. how much products might cost to make how innovative products are how sustainable the materials in products are what impact products have beyond their intended purpose
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	Technical skills			
	YR	Y1/2	Y3/4	Y5/6
Make a functional product		<ul style="list-style-type: none"> about the simple working characteristics of materials and components 	<ul style="list-style-type: none"> how to use learning from science to help design and make products that work. <p>how to use learning from mathematics to help design and make products that work</p> <ul style="list-style-type: none"> that materials have both functional properties and aesthetic qualities 	<ul style="list-style-type: none"> how to use learning from science to help design and make products that work how to use learning from mathematics to help design and make products that work that materials have both functional properties and aesthetic qualities
Textiles		2 identical shapes that a 3-D textiles product can be assembled from two identical fabric shapes	Single fabric shapes <ul style="list-style-type: none"> that a single fabric shape can be used to make a 3D textiles product 	Combination of fabric shapes <ul style="list-style-type: none"> that a 3D textiles product can be made from a combination of fabric shapes
Structure		Structures <ul style="list-style-type: none"> how freestanding structures can be made stronger, stiffer and more stable. 	Shell <ul style="list-style-type: none"> how to make strong, stiff shell structures 	3D structures <ul style="list-style-type: none"> how to reinforce and strengthen a 3D framework
Mechanisms		Wheels and axles <ul style="list-style-type: none"> Movements of simple mechanisms <p>Slides and levers</p> <ul style="list-style-type: none"> Movements of simple mechanisms 	Lever & Linkages <ul style="list-style-type: none"> how mechanical systems such as levers and linkages or pneumatic systems create movement 	Gears and pulleys <ul style="list-style-type: none"> how mechanical systems such as cams or pulleys or gears create movement
Nutrition		How to name and sort foods into the five groups in The eatwell plate <ul style="list-style-type: none"> that everyone should eat at least five portions of fruit and vegetables every day. 	<ul style="list-style-type: none"> 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, food and drink are needed to provide energy for the body 	<ul style="list-style-type: none"> that recipes can be adapted to change the appearance, taste, texture and aroma that different food and drink contain different substances – nutrients, water and fibre – that are needed for health
Where food comes from		that all food comes from plants or animals	that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as	that seasons may affect the food available



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		<ul style="list-style-type: none"> that food has to be farmed, grown elsewhere (e.g. home) or caught 	fish) in the UK, Europe and the wider world	<ul style="list-style-type: none"> how food is processed into ingredients that can be eaten or used in cooking
Cooking Skills		<ul style="list-style-type: none"> how to prepare simple dishes safely and hygienically, without using a heat source how to use techniques such as cutting, peeling and grating 	<ul style="list-style-type: none"> how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking 	<ul style="list-style-type: none"> how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking
IT control and monitoring			how to program a computer to control their products	how to program a computer to control their products
Electronic Systems			Simple circuits <ul style="list-style-type: none"> how simple electrical circuits and components can be used to create functional products 	Complex circuits <ul style="list-style-type: none"> how more complex electrical circuits and components can be used to create functional products

Technical skills				
A				
	YR	Y1/2	Y3/4	Y5/6
Autumn		Mechanisms: Wheel and Axels	Textiles: 2D to 3D product	Mechanisms: Pulleys and Gears
Spring		Structures: Freestanding structures	Electronics: Simple circuits and switches Control: Simple programming and control	Structures: Frame structures
Summer		Cooking: Preparing fruit and Vegetables	Structures: Shell structures using CAD	CAD: Using CAD in textiles Textiles: Combining fabric and shape

B				
	YR	Y1/2	Y3/4	Y5/6
Autumn		Textiles: templates and joining	Mechanisms: Linkages and levers	Electronics: More complex switches Control: Monitoring and Control
Spring		Mechanisms: sliders and levers	Mechanisms: Pneumatic Systems	Mechanisms: CAMS
Summer		Cooking:	Cooking: Healthy and Varied Diet	Cooking: Celebrating culture and seasonality



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Impact – How well are we achieving our aims?

Impact seen in:

Teacher Assessment	Pupil Voice	Moderation
Work scrutiny	Parental surveys and feedback	Observations and Blinks
Data analysis	Progress of pupils across the curriculum	Staff Questionnaires

Our children will:

Making great progress and have high standards of achievement and attainment	Have a lifelong love of reading and learning and be able to communicate clearly	Be respectful of themselves and demonstrate excellent behaviour
Be confident, positive and independent learners with high aspirations	Have mental wellbeing and make healthy lifestyle choices	Participate in the community and have excellent attendance

Work Sample Analysis:	What do our books show?
Lesson Observations:	How is the quality of teaching, learning and use of assessment in the lesson? How good is the questioning in the lesson?
Surveys:	What do parents and children say about this subject?
Interviews:	What do the children say about their learning in this subject? What do the staff say about their learning in this subject?
Coaching and Mentoring:	Is there a need for coaching and mentoring in this subject? What support do colleagues need in this subject?
Training:	What training has taken place? What is the impact of any training given?
Learning environment:	How does the learning environment support the learning in this subject area?