

Design Technology

Rickleton Primary School Curriculum Vision

We aim to provide a creative, inclusive, challenging real-world curriculum relevant to the local and world-wide context of Rickleton Primary School today. Learning, built on the development of strong basic skills, will inspire deep knowledge and transferable skills which progress from each individual's starting points.

We want to inspire curious and ambitious learners, with a passion for education, giving them a thirst for knowledge to become the innovators and problem solvers of the future. By immersing children in an environment which celebrates tolerance and equality, children will learn to communicate their thoughts and opinions in respectful ways.

At Rickleton Primary School, we believe that children thrive and build resilience in an environment which is safe, inclusive and supportive of their well-being. By providing this environment, we believe every child is able to achieve their best possible outcomes and feel celebrated for who they are. Our curriculum supports learners to be proud to achieve their potential academically, socially and emotionally whilst encouraging them to become ambitious life-long learners.

Intent, Implementation, Impact

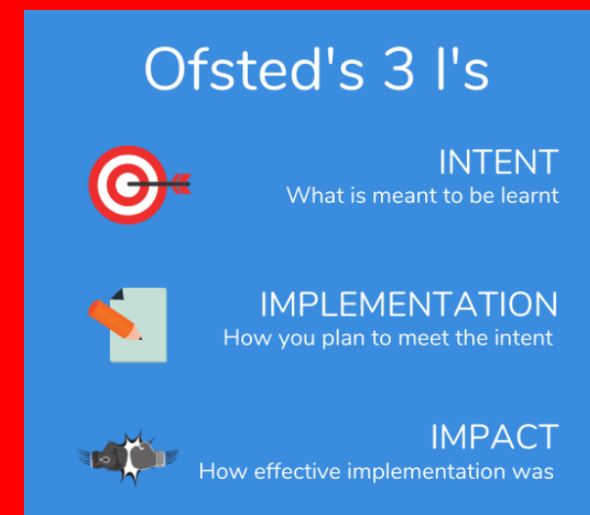
The phrase ‘intent, implementation, impact’ first came to light in 2019 when the new Ofsted inspection framework was launched. The big shift in focus was away from inspectors attempting to judge the quality of teaching and learning by observing lessons. Instead, the focus is now on attempting to judge the quality of education a school provides by, at least in part, interrogating its curriculum and its impact on pupils.

“The *intent* of the curriculum is the content you expect children to learn”

“The *implementation* of the curriculum is concerned with how you realise your intentions”

“The *impact* of the curriculum lies in whether students have learnt the things you’ve taught them”

The next three slides set out how each subject in our curriculum is designed and delivered in order to support our children to be successful. It should be clear how what they do and achieve in one subject supports the overall vision for our pupils.



Curriculum Intent

DT INTENT	We INTEND our curriculum to be:	
<p>Our intent is to develop creative, curious and imaginative children who have confidence in an increasingly technological world. Design and Technology encourages creative thinking and problem solving by providing a means of expression and allowing children to process the world in an inclusive, supportive, and enjoyable environment. It provides opportunity for children to 'break the rules' and express themselves freely, which we hope will result in resilient, confident individuals. They will develop transferable techniques and skills that will be explored and refined during their time at RPS in order to prepare them for the real, working world.</p> <p>Cross curricular skills, particularly in Maths, science and art are especially important, as children choose, measure and prepare their materials and consider the impact of their choices on the user. They will be encouraged to challenge their own abilities and not be afraid to try something new that may not work out, realising that mistakes teach them more than quick achievements. Our goal is for all children, regardless of their level of technology exposure, to be appropriately challenged depending on their starting points.</p>	Creative	Allows opportunities for children to 'break the rules' and express personality free of judgement which, in turn, will support pupil's resilience and confidence.
	Inclusive	All pupils can access and produce products which will be appreciated by someone. All children will have a different level of exposure to technologies outside of school.
	Challenging	Learning of new techniques and skills but there is a clear progression of skills across year groups allowing children to revisit and refine skills learnt in previous year groups.
	Create transferable skills	Problem solving skills or breaking down steps of a task has direct links with other curriculum areas (e.g. maths) but are also used in preparation for 'real world' and adulthood to jobs, links to many areas.
	Take account of individual starting points	All children will have a different level of exposure to technologies outside of school

Curriculum Implementation

DT IMPLEMENTATION	Real-world Opportunities:	Big ideas:
<p>Within Design and Technology, children follow a four-step process - explore, design, make, and evaluate – identical to Art lessons. This process is progressive throughout the whole school and children have the opportunity to refine their fundamental skills and learn new ones. After-school clubs are used as a means to develop design and technology skills outside of the classroom and in addition to the curriculum.</p> <p>Every term, the children take part in a DT project that is related to their learning theme. They will be given a relatable design brief, which will vary across year groups and will be based on their interests, that they must follow in order to build a successful product. The children are given the chance to direct their own learning and therefore can concentrate on their interests, ensuring that learning is a good experience with the children's well-being at the forefront.</p> <p>Exploring existing, real-life products with the desire to learn how things function encourages children to analyse, critique, and ask questions in order to examine ideas and design their own products. They will get an understanding of numerous occupations within the design and technology sector, modelling tolerance and learning that gender does not dictate what careers they may be able to pursue in the future. They will become ambitious innovators and problem solvers during the design process, investigating numerous approaches to achieving the desired outcome. Children's resilience will be challenged during the 'making' process as they begin to break down the steps for production with an increasing level of independence. During the project's final stages, children will be given the opportunity to review their own and their peers' final products, ensuring that they reflect on the design brief. They will be given the opportunity to celebrate their own and their peers' successes, as well as to identify areas for further development in future projects.</p>	<p>designing to meet a real life need</p> <p>photography skills</p> <p>using technology</p> <p>food hygiene and cookery</p> <p>sewing skills</p> <p>understanding how to join materials</p> <p>problem solving skills</p> <p>evaluation skills</p> <p>engineering skills</p> <p>health and safety skills</p>	<p>Evaluation: Pupils look at existing product and identify aspects which could be copied, modified or extended.</p> <p>Development of skills: Pupils practice skills in a variety of disciplines including mechanical systems, building structures, textiles, computing, electrical systems as well as food and nutrition.</p> <p>Designing and making: Pupils design and make products with real purposes showcasing deepening levels of skill.</p>

Curriculum Impact

DT IMPACT	The IMPACT of our curriculum will create pupils who are:	
<p>DT evidence is compiled throughout all four stages of production in books or through photographs and videos on Collaborative Learning PowerPoints, clearly demonstrating skill progressions and ensuring inclusion. Subject leaders can closely monitor implementation of the subject through book looks, Collaborative PowerPoint analysis, pupil voice interviews and lesson observations. This is a chance to see the progression and application of strong subject vocabulary, verbally on Collaborative Learning PowerPoints or written in sketchbooks</p>	Curious	Children will become analytical thinkers who wish to learn about the world around them
<p>Children will gain confidence in their own thoughts and ideas, recognising that no matter where they begin, they will succeed. Sketchbooks are carried through year groups so children regularly have the chance to reflect on their progression by looking back at previous works and reconsidering feedback they have received. They will have a good grasp of how real-world designers and makers work through real-life experiences and involvement with external visits or guests to help them become critical, innovative, and ambitious thinkers. Teachers will direct children with key vocabulary for each topic (which will be displayed within lessons) and monitor how frequently they are using it, encouraging them adapt vocabulary in books whenever necessary. They build strong subject-specific vocabulary as the subject progresses, allowing them to properly understand the subject content and begin to organise and connect their learning across the curriculum.</p>	Innovators	Next generation of designers and makers
<p>Children are encouraged to make annotations about the skills they have recognised that are used whilst considering and noting how they will use these to inspire their products. This will be used to inspire the children and drive the design stage where the children must ensure their products reflect their research findings. As the next generation of designers and makers, they will grasp how technology has shaped the world they live in today and begin to verbalise possible future careers and interests.</p>	Problem solvers	Transferable skills will allow children to apply same thought process of learning with other academic areas
	Resilient	Evaluation process focuses on children accepting errors as learning opportunities
	Ambitious	Children want to push to be the first to achieve and find success in something new

An Aspirational Curriculum

We feel passionately that our children aim high and have huge aspirations for their life ahead. As well as encouraging them to be successful in future studies and work, it is a vital tool for motivation and mental well-being.

We want our curriculum to open pupils' eyes to the things to not just areas in which they feel successful, but also to develop an understanding of the things they enjoy doing. By using a clear focus on real world links and future career paths, children begin to open their eyes to future choices and opportunities from an early age.

Our Aspirational Concepts documents are designed to give children an understanding of what is needed to be successful in all subjects, as well as potential future opportunities linked to the subject. Simplified language for younger pupils means that children grow in their ability to articulate their aspirations for their future.



Great accomplishments
start with great aspirations.

Gary Hamel

To be a Designer, I...

Create a range of designs to overcome a problem, keeping the needs of the user in mind throughout.	Select materials and techniques to safely create accurate and robust products.	Evaluate products to identify strengths and weakness, including those which I have made.	Understand how mechanical and technological support can improve my product.	Develop life skills and knowledge linked to food technology.
--	--	--	---	--

To be a Designer, I...



Have lots of ideas about how to fix a problem.

Know which materials will be best to do the job.

Explain what is successful and unsuccessful about a product.



Use technology to improve the way a product works.

Prepare food safely and hygienically.

Interior Designer	Architect	Engineer	Chef	Mechanic
-------------------	-----------	----------	------	----------

To be a Designer, I...

Create a range of designs to overcome a problem, keeping the needs of the user in mind throughout.

Select materials and techniques to safely create accurate and robust products.

Evaluate products to identify strengths and weakness, including those which I have made.

Understand how mechanical and technological support can improve my product.

Develop life skills and knowledge linked to food technology.

To be a Designer, I...

Create a range of designs to overcome a problem, keeping the needs of the user in mind throughout.

Select materials and techniques to safely create accurate and robust products.

Evaluate products to identify strengths and weakness, including those which I have made.



Understand how mechanical and technological support can improve my product.

Develop life skills and knowledge linked to food technology.

To be a Designer, I...

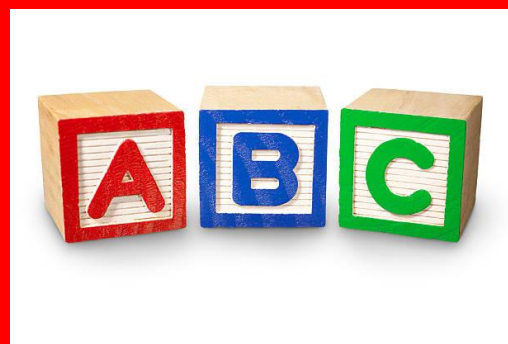
Create a range of designs to overcome a problem, keeping the needs of the user in mind throughout.	Select materials and techniques to safely create accurate and robust products.	Evaluate products to identify strengths and weakness, including those which I have made.	Understand how mechanical and technological support can improve my prod-	Develop life skills and knowledge linked to food technology.
Can identify real life problems around us?	Can name the materials used to make products around us?	Can design ways to test products?	Can use mechanical equipment to make a job easier?	Can discuss which types of food provide the main food groups (eg. vitamins, calcium, fats etc)?
Can come up with solutions for real life problems around us?	Can talk about the properties of different materials?	Can explain what makes a fair test?		Can explain where our food comes from?
Can show initiative and independence in everyday life?	Can talk about how the material suits the role of the product?	Can work out how to improve a product when something goes wrong?	Can use computers to improve accuracy and presentation of work?	Can identify what a balanced and healthy diet is?
Can work with a partner, overcoming any problems effectively?	Can measure lengths accurately?	Can give fair explanations about strengths and weaknesses of their own ideas and those of others?		Can explain how to work hygienically with food?
Can work in a group of other children, overcoming any problems effectively?	Can cut safely and accurately?		Can explain why we might choose to do something 'by hand' rather than use technology?	Can work safely when preparing food, especially linked to cutting and heating?
	Can cut using a range of tools accurately?	Can evaluate existing products?		
	Can name and use a range of joining techniques?			
Interior Designer	Architect	Engineer	Chef	Mechanic

Building from the Early Years

With the National Curriculum beginning from Year 1, the education in the EYFS (Early Years Foundation Stage) is often overlooked. We have always seen huge importance in making sure that learning for our youngest pupils is a building block for their future.

Staff have worked hard to ensure full coverage of the Early Years Foundation Stage profile, combined with positive integration in to the National Curriculum. Our core teaching schemes (Read Write Inc, Reading and Writing at Rickleton, NCETM Maths) all extend down to pupils in Reception and even Nursery for those who attend.

For the broader curriculum, the documents shown on the next slides support teachers to ensure they are aware of the foundation concepts which children bring from the EYFS in to the subjects taught in KS1 and 2, allowing staff to effectively build on prior learning.



DT in the EYFS

In the EYFS, foundational skills and knowledge in Design and Technology (DT) are nurtured through hands-on activities that encourage problem solving, creativity, and practical skills. Although DT is not taught as a discrete subject in EYFS, children engage in activities that build DT-related skills, such as constructing models, using tools like scissors or glue, and experimenting with materials to build simple structures. These experiences lay the groundwork for understanding basic concepts like structure, function, and design, which are core to DT.

Physical development in EYFS supports DT learning by improving children's fine motor skills, allowing them to manipulate materials and tools effectively, which is essential for more advanced DT tasks in later years. Communication and language development also play a role, as children are encouraged to describe their creations, explain their choices, and discuss how they might solve simple problems during construction activities. At Rickleton, in the outdoor provision, children have opportunities to plan and construct at a larger scale, using a range of equipment to construct in a personalised and meaningful way such as; den building, assault courses and using large wooden blocks, crates and other materials to build props as part of their play, often linked to the topic or own interests such as a pirate ship.

Additionally, the expressive arts and design area encourages children to think creatively and critically, experimenting with different ways to assemble and combine materials to achieve a desired outcome. These early skills directly link to DT in the National Curriculum, where in Key Stage One, children begin learning to design purposeful products, select appropriate materials, and evaluate their creations based on function and aesthetics. By fostering creativity, practical skills, and problemsolving abilities in EYFS, children are well-prepared for the structured DT curriculum, ready to tackle projects that require planning, designing, building, and refining—a process they have already begun to explore through early play and experimentation.

Curriculum Skill Progression

EYFS DT Skills

Cooking and Nutrition	Design: Developing, Planning and Communicating Ideas	Make	Evaluate	Technical Knowledge
<p>Understand and apply the principles of nutrition and learn how to cook basic snacks such as; bread bins (Little Red Hen), biscuits (Gingerbread Man, valentines' day), Lentil patties (Holi)</p> <p>Begin to work safely and hygienically Weigh using non-statutory measures e.g. spoons/cups.</p> <p>Begin to use some techniques e.g. mix, spread, knead</p> <p>Make healthy choices in relation to eating, e.g. superhero fruit kebabs</p> <p>Know the importance of a healthy diet through both DT and Rickleton PSHCE curriculum.</p>	<p>Understand context, uses and purpose when building models in the Studio</p> <p>Generate, develop, model and communicate ideas in a range of areas</p> <p>Use what I have learnt about materials, thinking about uses and purposes e.g. within investigation provision and pirate topic</p> <p>Think about and discuss what I want to make</p> <p>Discuss my work as it progresses with growing confidence, considering where adaptations need to be made.</p>	<p>Work with tools, equipment, materials and components to make quality products, often linked to Collaborative Learning Week.</p> <p>Explore a variety of materials, tools and techniques, experimenting with design, form and function</p> <p>Represent and construct my own ideas, thoughts and feelings through design often mark making to plan beforehand</p> <p>Explore different techniques for joining materials, such as how to use adhesive tape and different sorts of glue within the junk modelling area</p> <p>Use a range of materials and tools with care and precision</p>	<p>Evaluate processes and products e.g. in the construction area and junk modelling area within the Studio</p> <p>Describe what I like and dislike about my creation Adapt work where necessary</p>	<p>Develop technical expertise and knowledge of way to join, fix, build, folding etc</p> <p>Select appropriate resources</p> <p>Make decisions on how items can be combined and changed</p> <p>Name the tools needed to work with the materials e.g. saw for wood in the woodworking area, scissors for paper.</p>

EYFS DT Knowledge

Autumn

<u>Cooking and Nutrition</u>	<u>Make</u>	<u>Technical Knowledge</u>
<ul style="list-style-type: none"> I know how to work safely and hygienically, linking to 'Keeping Myself Safe' PSHCE curriculum I know how to use non-statutory measures e.g. spoons/cups. I know how to use some techniques e.g. mix, spread, knead 	<ul style="list-style-type: none"> I know how to use a variety of materials, tools and techniques, experimenting with form and function I know about different techniques for joining materials, such as split pins 	<ul style="list-style-type: none"> I know how items can be combined and changed

Spring

<u>Design: Developing, Planning and Communicating Ideas</u>	<u>Cooking and Nutrition</u>	<u>Make</u>	<u>Technical Knowledge</u>
<ul style="list-style-type: none"> I know how to use materials, thinking about uses and purposes 	<ul style="list-style-type: none"> I know about healthy choices in relation to eating I know about the importance of a healthy diet 	<ul style="list-style-type: none"> I know about different techniques for joining materials, such as how to use adhesive tape and different sorts of glue I know how to represent and construct my own ideas, thoughts and feelings through design 	<ul style="list-style-type: none"> I know how to select appropriate resources

Summer				
<u>Design: Developing, Planning and Communicating Ideas</u> <ul style="list-style-type: none"> I know I can discuss my work as it progresses. I know about and discuss what I want to make 		<u>Make</u> I know how to use a range of materials and tools with care and precision	<u>Evaluate</u> <ul style="list-style-type: none"> I know what I like and dislike about my creation I know how to adapt my work and make amendments to improve 	<u>Technical Knowledge</u> I know the names of tools needed to work the materials e.g. needle, saw
Key Vocabulary				
Cooking and Nutrition	Design: Developing, Planning and Communicating Ideas	Make	Evaluate	Technical Knowledge
Healthy, unhealthy, fruit, vegetable, clean, safe, ingredients, weigh, mix, knead, cut, sew, food, eat, tasty, sweet, salty, bitter, sour, chop, bake, cook, raw	Plan, ideas, design, think, draw, sketch, model, build, create, try, change, improve, design, shape, colour, pattern	Make, build, construct, join, shape, tools, change, cut, stick, fold, mix, sew, glue, hammer, twist, roll, press, attach, assemble	Like, dislike, different, improve, look, test, try, check, improve, change, fix, better, strong, weak, hard, soft, easy, difficult, useful	Strong, weak, hard, soft, join, build, cut, fold, fasten, structure, move, push, pull, turn, slide

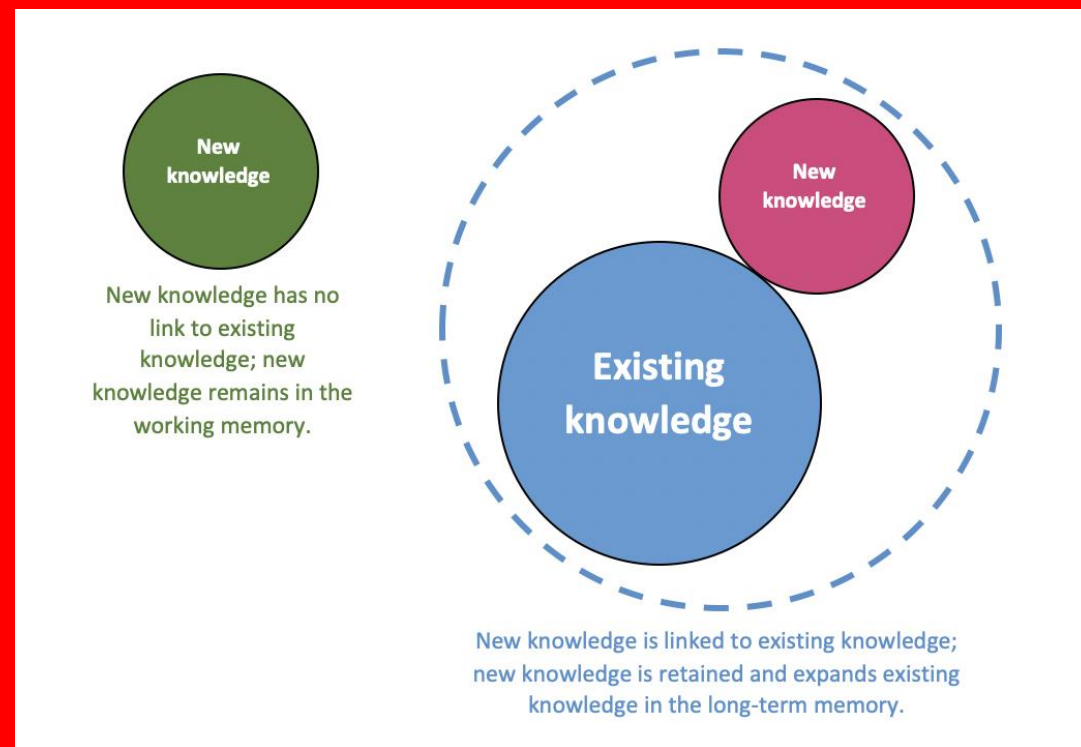
Knowing More, Remembering More



“Learning is defined as an alteration in long-term memory. If nothing has been altered in long-term memory, nothing has been learned.” (Kirschner, Sweller and Clarke, 2006)

Learning happens when pupils make sense of ideas in relation to what they already know. When we talk about knowledge in the long-term memory, we often refer to this as Sticky learning. Sticky learning is effectively the knowledge that stays with us forever.

In order to allow our pupils’ knowledge to stick, subjects are planned progressively to return to topics, themes and concepts which children recognise and can build upon. We called these themes Golden Threads.

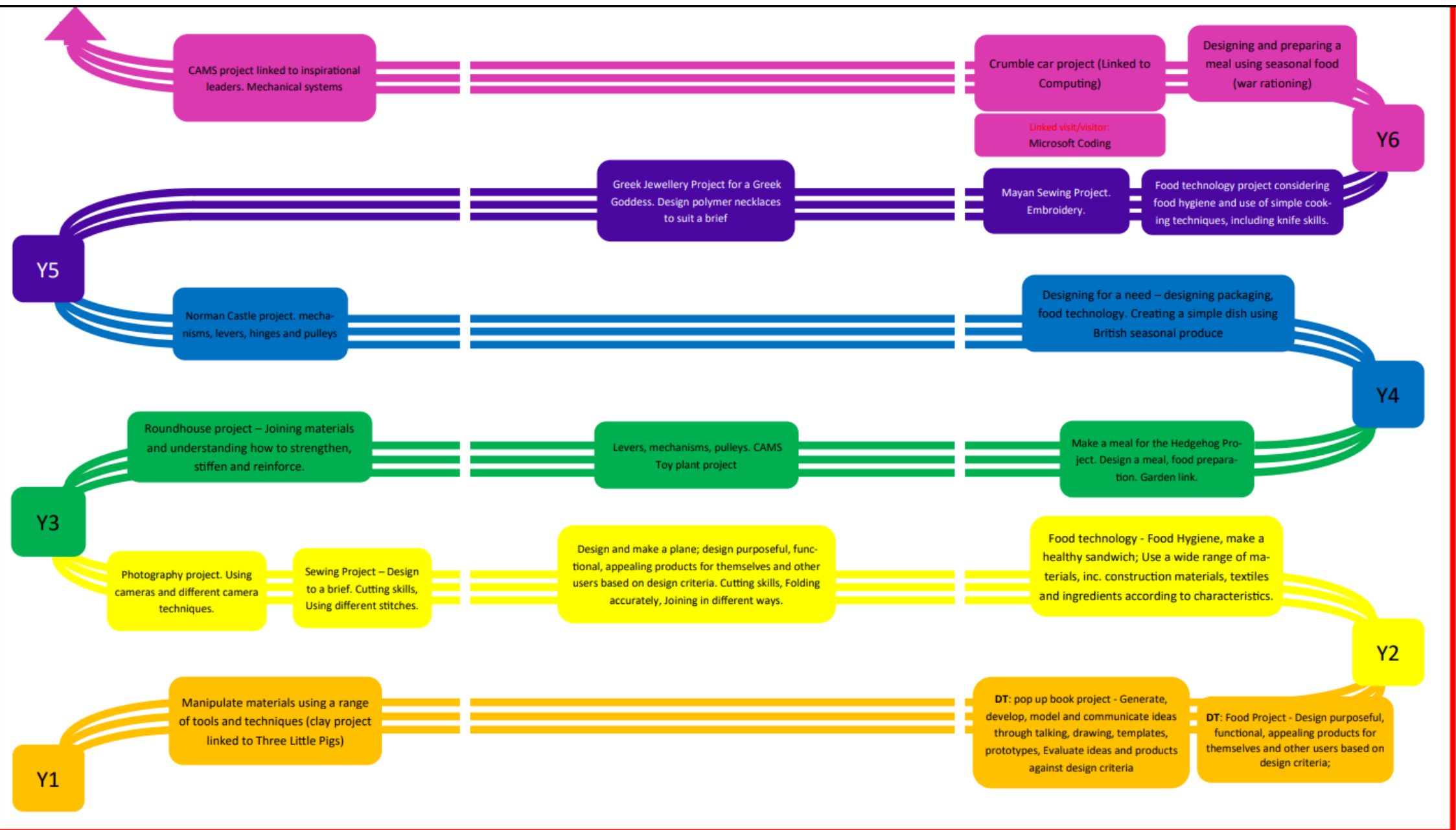


Golden Threads which run throughout the curriculum are:

THREAD	OVERVIEW	IMPORTANCE TO BROADER UNDERSTANDING AT RICKLETON
Keeping Myself and others Safe	How to stay safe when cooking or using sharp blades (scissors, knives, saws, needles etc.)	Keeping safe can be applied to a wide-range of units and it is important that children understand good hygiene when cooking and how to use/carry sharp blades safely.
Joining and Finishing	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. Children need to know how to select from a range of materials in order to join and finish but also produce a product that is visually pleasing.
Cutting	Use a variety of cutting skills safely (scissors, knives, saws, needles etc.)	Using scissors safely and accurately will develop children's fine motor skills from a young age. Use of sharp blades safely and accurately such as knives, needles and saws, can be applied to real-life scenarios and occupations.
Strengthening and Reinforcing Structures	Build structures, exploring how they can be made stronger, stiffer and more stable	Children learn from EYFS how to build structures and strengthen them. As they progress through school, children will learn real-life skills on how to build and reinforce simple and complex structures. Cross-curricular links with Science and Mathematics.
Mechanical Systems	Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Mechanical systems allow children to develop skills through practical tasks and look at how these systems work and are put together. Such skills will support them in a range of future careers. It is important that children are aware of various careers that are linked to these specific skills.
Cooking and Nutrition	Understand and apply the principles of a healthy and varied diet; prepare and cook a variety of savoury dishes using a range of cooking techniques; understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.
Electrical Systems	Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	Electrical systems are used in every day life, and it is important that children not only know how to make them, but how they can be used as a function in various products. Cross-curricular links with Science.
Programming and Controlling Products	Apply understanding of computing to program, monitor and control their products.	It is important for children to learn how to program and control systems through technology and electrical circuits, as they develop real-life skills which can be applied to future careers. Cross-curricular links with Science, IT and Mathematics.

The objectives of each thread are:

GOLDEN THREAD	Learning Objectives:
Keeping Myself and others Safe	<ul style="list-style-type: none"> - develop an awareness of how to stay safe when using sharp blades (scissors, saws, knives) - practice staying safe when using sharp blades - develop an awareness of and practice safe hygiene when cooking
Joining and Finishing	<ul style="list-style-type: none"> - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately - select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
Cutting	<ul style="list-style-type: none"> - develop fine motor skills - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
Strengthening and Reinforcing Structures	<ul style="list-style-type: none"> - build structures, exploring how they can be made stronger, stiffer and more stable - use previous knowledge of structures to inform future designs - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
Mechanical Systems	<ul style="list-style-type: none"> - explore and use mechanisms [for example, levers, sliders, wheels, axles and pneumatic systems], in their products. - Have a secure knowledge of a variety of mechanisms and how they make products move
Cooking and Nutrition	<ul style="list-style-type: none"> - understand and apply the principles of nutrition and learn how to cook. - use the basic principles of a healthy and varied diet to prepare dishes - understand where food comes from. - understand and apply the principles of a healthy and varied diet - prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques - understand seasonality - know where and how a variety of ingredients are grown, reared, caught and processed. - select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
Electrical Systems	<ul style="list-style-type: none"> - understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] - develop knowledge of electrical systems and how they can be used in everyday life/products
Programming and Controlling Products	<ul style="list-style-type: none"> - apply their understanding of computing to program, monitor and control their products - develop an awareness of how programming and controlling products



Coverage across KS1 and KS2:

THREAD	Year 1			Year 2			Year 3			Year 4			Year 5			Year 6		
	A	Sp	Su	A	Sp	Su	A	Sp	Su	A	Sp	Su	A	Sp	Su	A (cc)	A WWI	Su
Keeping Myself and others Safe		x		x	x	x			x	x			x	x	x		x	x
Joining and Finishing	x		x		x	x	x	x			x	x		x	x	x		x
Cutting	x	x	x	x	x			x	x	x			x			x	x	x
Strengthening and Reinforcing Structures							x					x				x		
Mechanical Systems			x					x				x						x
Cooking and Nutrition		x		x					x	x			x				x	
Electrical Systems											x					x		
Programming and Controlling Products																x		

Coverage across KS1 and KS2:

THREAD	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Keeping Myself and others Safe	Fruit skewers	Healthy sandwich	Hedgehog meal	Seasonal food product	Meal for a dietary requirement Stitching Clay brooches	CAMS WWII meal
Joining and Finishing	Clay pigs Pop-up books	Sewing (bag/purse) Aeroplane	Toy plant Roundhouse	Viking dragon boat Normal catapult	Clay brooches Stitching	Crumble cars CAMS
Cutting	Clay pigs Fruit skewers Pop-up books	Sewing (bag/purse) Aeroplane Healthy sandwich	Hedgehog meal Toy plant	Seasonal food product Normal catapult	Meal for a dietary requirement	CAMS WWII meal
Strengthening and Reinforcing Structures			Roundhouse	Normal catapult		Crumble cars
Mechanical Systems	Pop-up books		Toy plant	Normal catapult		Crumble cars CAMS
Cooking and Nutrition	Fruit skewers	Healthy sandwich	Hedgehog meal	Seasonal food product	Meal for a dietary requirement	WWII meal
Electrical Systems				Viking dragon boat		Crumble cars
Programming and Controlling Products						Crumble cars