

Design and Technology Intent / Rationale:

We believe that Design and Technology is a subject that is all-inclusive and encourages children's creativity to flourish. The knowledge and skills taught within D&T lessons are essential for all children in order to prepare them for the opportunities, responsibilities and experiences of later life and we aim to help children to understand how Design and Technology both reflect and shape our history and contribute to society. D&T is an inspiring, rigorous and practical subject and encourages problem solving and risk-taking. We draw upon knowledge from other areas such as Mathematics, Science, Computing and Art and we provide opportunities for children to create purposeful products and to solve real and relevant problems. The children are given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators themselves. At this school, we support children to learn from other cultures, respect diversity, cooperate with each other and appreciate what they have.

Core Principles for the Teaching Design and Technology at Robert Miles Infant School

Pupils at Robert Miles Infant School learn through an Art and Design curriculum that will:

- give children the confidence to express themselves, be creative and become proficient in different design techniques that inspire and reflect their thoughts and feelings;
- to explore their unique style and creativity and make links to other innovators;
- develop knowledge of a core bank of D and T skills;
- ensure their accurate use and understanding of specific vocabulary and techniques when creating and evaluating their work;
- empower them to think 'outside of the box' and take risks or set challenges for themselves when developing and sharing their ideas (there is no wrong or right way to do something), knowing that it is 'ok' to make mistakes and modify / amend designs to create something even better;
- to provide opportunities for reflection and, with increasing sensitivity, pupils should acquire the ability to make informed, critical responses of their own work and that of others;
- make links to real life cultural contexts.

EYFS (Reception)		The National Curriculum for Design & Technology aims to ensure that all pupils:	KS1 pupils should be taught to (NC subject content):
In Reception	<p>Expressive Arts & Design – Creating with Materials:</p> <ul style="list-style-type: none"> ➢ Explore different materials freely, in order to develop their ideas about how to use them and what to make ➢ Develop their own ideas and then decide which materials to use to express them. ➢ Join different materials and explore different textures. ➢ Return to and build on their previous learning, refining ideas and developing their ability to represent them. ➢ Create collaboratively, sharing ideas, resources and skills <p>Physical Development – Fine Motor Skills Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p>	<ul style="list-style-type: none"> • develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world; • build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users; • critique, evaluate and test their ideas and products and the work of others; • understand and apply the principles of nutrition and learn how to cook. 	<ul style="list-style-type: none"> • use a range of materials creatively to design and make products; • use drawing, painting and sculpture to develop and share their ideas, experiences and imagination; • develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space; • learn about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work.
Early Learning Goal	<p>Expressive Arts & Design - Creating with Materials:</p> <ul style="list-style-type: none"> ➢ Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. <p>Physical Development – Fine Motor Skills</p> <ul style="list-style-type: none"> ➢ Use a range of small tools, including scissors, paintbrushes and cutlery • Begin to show accuracy and care when drawing. 		

DESIGN & TECHNOLOGY- Document 1: Whole School Knowledge Progression

RMI school-wide threads:

- ❖ **Positive Attitudes for Learning (PAL):** We will develop positive learning behaviours and attitudes, focusing on engagement, motivation and critical thinking.
- ❖ **Equality and Diversity:** We aim to provide an equitable start for our children, where communalities and differences are valued and celebrated. Our pupils will develop cultural awareness through a diverse and inclusive curriculum.
- ❖ **Reading at the heart of everything we do:** We will develop confident readers, instil a love of reading and provide purposeful cross-curricular reading opportunities.
- ❖ **Develop an understanding of how to care for our environment:** We will support children to take an interest and responsibility, as global citizens and custodians of our planet.

Concepts of our Design & Technology curriculum at RMI:

- ❖ **Sustainability:** We will utilise opportunities to encourage children to consider the impact of their designs on the environment and will consider the use of recycled materials wherever possible.
- ❖ **Innovation:** We will promote and celebrate innovative ideas, recognising that to innovate is not just to do something differently, but to do or make something better (improvement).

	Reception	Year 1	Year 2	Year 3
Design	<ul style="list-style-type: none"> ➤ I know what I want to make and, with support, can suggest ways I can do it. ➤ I know how to select my own resources and can begin to make decisions about the best resources to use for a purpose. ➤ I know how to use my own ideas to create pieces of work which I can talk about. ➤ I am beginning to understand and use the language of designing and making (join, build, shape, longer, shorter, heavier, stronger etc). 	<ul style="list-style-type: none"> ➤ I know what I want to make and understand how to use pictures and words to make a simple plan (design) through teacher modelling. ➤ I know how to describe and explain what my product is for and how it will work. ➤ I know how to design a product by following design criteria (instructions) or by following teacher modelling. ➤ With support, I understand how to research similar existing products. 	<ul style="list-style-type: none"> ➤ I understand why it is important to create and follow a design. ➤ I am able to think of my own ideas and plan what to do next. ➤ I can understand and explain the purpose of a product, how it will work and how suitable it is for the user. ➤ I know how to draw simple designs and label parts of products using words. ➤ I know how to design products for myself and others following a design criteria. ➤ I can use knowledge of existing products to produce ideas. 	<i>To be added, in liaison with the linked junior school</i>
Tier 2 & 3 Vocabulary	<p>Design Plan Decide</p> <p>Purpose Idea Drawings</p>	<p>design, plan, research, products, criteria, ideas,</p>	<p>design, plan, research, products, criteria, ideas, audience, effectiveness, label</p>	

DESIGN & TECHNOLOGY- Document 1: Whole School Knowledge Progression

	Reception	Year 1	Year 2	Year 3									
Make	<ul style="list-style-type: none"> ➤ I know how to experiment with different ways of joining materials. ➤ I know how to use a range of materials to help me build models. ➤ I know how to create a model out of junk and can talk about what it is. ➤ I understand that the things I build must have a meaningful purpose. I know how to plan and adapt in the process of making (through discussion or drawings). ➤ I understand how to use resources safely and with good control, e.g. scissors. 	<ul style="list-style-type: none"> ➤ I know how to explain what I'm making and can think about what I need to do next. ➤ I understand that we need to use tools in order to make something. ➤ I know how to select and use tools/equipment safely to cut, shape, join and finish. ➤ I understand that finishing techniques can be used to make a product look good and can practise those modelled by the teacher. ➤ I know how to work in a safe and hygienic manner and can explain why it is important. 	<ul style="list-style-type: none"> ➤ I can explain what I am making, why it fits the purpose and can begin to make suggestions as to what I need to do next. ➤ I know how to join material /components including simple sewing techniques. ➤ I understand that different tools can join materials in different ways. ➤ I can identify and name which hand tools I'm using and why. ➤ I know how to mark out and cut fabric, with support. ➤ I know how to use finishing techniques that have been modelled to make product look good. ➤ I understand why we need to work safely and hygienically and can demonstrate this. 	<i>To be added, in liaison with the linked junior school</i>									
Tier 2&3 Vocab	<table style="width: 100%; border: none;"> <tr> <td style="padding: 2px;">Make</td> <td style="padding: 2px;">Create</td> <td style="padding: 2px;">Build</td> </tr> <tr> <td style="padding: 2px;">Model</td> <td style="padding: 2px;">Adapt</td> <td style="padding: 2px;">Safely</td> </tr> <tr> <td style="padding: 2px;">Materials</td> <td style="padding: 2px;">Tools</td> <td style="padding: 2px;">Shape</td> </tr> </table>	Make	Create	Build	Model	Adapt	Safely	Materials	Tools	Shape	make, create, product, hygiene, join, cut, chop, finish, tools, equipment, techniques, tools, scissors, Sellotape, stapler, hole punch, string, card, glue	make, create, product, hygiene, join, cut, chop, finish, tools, equipment, techniques, tools, scissors, Sellotape, stapler, hole punch, string, card, glue	
Make	Create	Build											
Model	Adapt	Safely											
Materials	Tools	Shape											
Evaluate	<ul style="list-style-type: none"> ➤ With support and through discussions with my teacher, I can begin to evaluate my work. ➤ I know how to share my creations, talking about some of the processes I have used. 	<ul style="list-style-type: none"> ➤ I know how to describe how things works. ➤ I know how to talk about existing products considering: use, materials, how they work, audience, where they might be used. ➤ I know how to talk about my product, and say what worked well / not so well. ➤ I understand that products can be improved and can begin to talk about what could make my product better. 	<ul style="list-style-type: none"> ➤ I understand why it is important to evaluate a product. ➤ I understand and can explain what went well, thinking about design criteria. ➤ I can talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion. ➤ I can talk about what I would do differently if I were to do it again and why. 	<i>To be added, in liaison with the linked junior school</i>									
Tier 2&3 Vocab	<table style="width: 100%; border: none;"> <tr> <td style="padding: 2px;">Evaluate</td> <td style="padding: 2px;">Improve</td> </tr> <tr> <td style="padding: 2px;">Processes</td> <td style="padding: 2px;">Product</td> </tr> </table>	Evaluate	Improve	Processes	Product	evaluate, explain, use, audience, product, improve, explain, criteria	evaluate, explain, use, audience, product, improve, explain, effectiveness, criteria						
Evaluate	Improve												
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	Reception	Year 1	Year 2	Year 3
Technical Knowledge - Mechanisms	<p>Mechanisms, Structures & Materials</p> <ul style="list-style-type: none"> ➤ I am beginning to understand that different joining techniques create different outcomes, e.g. glue, adhesive tape, split-pins. ➤ I know how to use a range of tools safely and with good control, e.g. scissors, hole punch, stapler, rolling pins, pastry cutters. ➤ Through exploration, I am beginning to understand how everyday objects work by dismantling things. 	<ul style="list-style-type: none"> ➤ I know how simple mechanisms works such as sliders and levers. ➤ I know how to create a slider mechanism to make a product with a moving part. ➤ I know how to use a split pin to make a pivot point on a lever mechanism to make it move correctly. 	<ul style="list-style-type: none"> ➤ I understand and can explain how wheels and axels can make a product move in a certain way. ➤ I know how to use wheels and axles to make a product that moves. ➤ I know how to create a spring mechanism. ➤ I understand that different mechanisms make products move in different ways. ➤ I can select a taught mechanism and use it to make a desired outcome. 	<i>To be added, in liaison with the linked junior school</i>
Tier 2 & 3 Vocab	Join Technique Tools Split-pins Sellotape Glue Hole punch Stapler Stick	<i>mechanism, slider, lever, movement, up, down, left, right, product, push, pull, split pin, pivot, rotate</i>	<i>mechanism, movement, forward, backwards, product, push, pull, wheels, axels, explain, slider, movement, up, down, left, right, split pin, pivot, rotate, spring.</i>	
Technical Knowledge - Structures & Materials	See above	<ul style="list-style-type: none"> ➤ I know that I can join materials in different ways. ➤ I know how to use joining, rolling/folding to make something stronger. ➤ I understand and can explain how to make my product stronger or more stable. 		<i>To be added, in liaison with the linked junior school</i>
Tier 2 & 3 Vocab	Print Printing Repeat Repeating Press	<i>materials, joining, folding, rolling, sticking, stronger, stiffer, stable, improve, explain, structure, rigid, sturdy</i>		

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	Reception	Year 1	Year 2	Year 3
Technical Knowledge – Cooking & Nutrition	<ul style="list-style-type: none"> ➤ I know how to stir, mix and pour through planned experiences and continuous provision. ➤ I know how to use my senses when exploring and describing different foods. ➤ I understand that eating a healthy diet will support my overall health and well-being. ➤ I know that I must always wash my hands before preparing or eating food. 	<ul style="list-style-type: none"> ➤ I know where some fruit and vegetables come from and why they are healthy. ➤ I know and can describe differences between some food groups (e.g. sweet, vegetable etc.) ➤ I know how to describe the textures of fruit and vegetables using senses (feeling, smelling and tasting). ➤ I know that fruit and vegetables are healthy. ➤ I know how to chop fruit and vegetables safely, using the claw and bridge grip. ➤ I know why we follow safe procedures for food safety and hygiene and can demonstrate this. 	<ul style="list-style-type: none"> ➤ I know why we follow safe procedures for food safety and hygiene and I can demonstrate this and explain the importance of it. ➤ I know that food comes from different places and can say where certain food comes from (origins). ➤ I know and can explain the food groups on the eat well plate and say which are healthy or not. ➤ I understand and can describe "five a day". ➤ I know how to chop (using bridge and claw grip), peel and grate safely with increasing confidence. 	<i>To be added, in liaison with the linked junior school</i>
Tier 2 & 3 Vocabulary	<i>Diet Healthy Balanced Fruit Vegetables Recipe Senses: taste, touch, smell Chop Roll Mix Stir Pour</i>	<i>fruit, vegetables, food groups, senses – feeling, smelling, tasting, healthy, balanced diet, hygiene, safety, claw grip, bridge grip, chop</i>	<i>food groups – fruit, vegetables, carbohydrates, starches, dairy, protein, sugars, fat, eat well plate, senses – feeling, smelling, tasting, healthy, balanced diet, hygiene, food safety, claw grip, bridge grip, origins, peeling, grating, 5 a day</i>	
Technical Knowledge –Textiles			<ul style="list-style-type: none"> ➤ I know how to join textiles together to make a product, and explain how I did it and what tools I used. ➤ I know that a 3D textile structure can be made from two identical fabric shapes. 	<i>To be added, in liaison with the linked junior school</i>
Tier 2&3 Vocab			<i>textiles, fabric, needle, eye of needle, thread, cotton, felt, 3D, structure, join, sew, stitches, stuffing</i>	