

Curriculum Overview: DESIGN and TECHNOLOGY

Intent EYFS – Key Stage 2 –

"Design is not just what it looks like and feels like. Design is how it works" Steve Jobs.

At the Loriners' MAT, we aim to deliver high-quality Design and Technology (DT) lessons that encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems. These products may be designed in order to satisfy their own needs, or the needs, wants and values of others. At the Loriners' MAT we offer a wide range of DT opportunities to inspire children's creativity and free thinking, including textiles, mechanisms, electrical systems, food products and structures.

Following the guidelines of the national curriculum the children are also given opportunities to explore and analyse existing products to develop their understanding for the products they will **design, make, test** and **evaluate**, understanding their impact on the wider world. Children will also explore the work of designers to further broaden their understanding of industry and inspire the development of their own work.

Our Design and Technology curriculum aims to expand the children's personal skills by providing them with situations where they will work as a team, innovate, take risks and make contributions to culture, wealth and well-being of the nation. As part of a skills based developmental curriculum, Design and Technology lessons will also draw on links to other disciplines within the Loriners MAT's broad and balanced curriculum, such as mathematics, engineering, science, computing and art.

In order to best deliver this sequential, progressive curriculum to our children we have set out the aims for learning below. These are our aims for all children to engage with and continue develop as they progress through their education journey, in order to help them become proficient designers and technicians.

Children will:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technical world.
- Develop a sense of curiosity about how things work.
- A desire to embrace challenges, (including opportunities to research and explore at varying levels to inform their understanding,) when designing and making products.
- Develop the ability to think critically and communicate ideas confidently through the design and manufacture of products they make.
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Build and apply a breadth of knowledge 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.
- Be able to understand and use a wide repertoire of subject specific technical language.

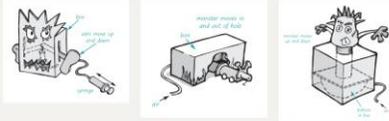
Implementation –

In order to implement this intended learning outcome, teachers need to consider the following:

- The Design and Technology subject progression trackers. These outline the knowledge (including vocabulary) all children must master within and across year groups.
- A cycle of lessons for each specialism within Design and Technology, which carefully plans for progression and depth as the children continue in their school career.
- A project book specifically designed for each project undertaken, that builds in its complexity and content to reflect the children’s growing knowledge and skills as they move through each Year group.
- A project booklet folder for each child, to enable them to look back on the work they have produced and celebrate their successes.
- Provide opportunities for critical thinking to help children apply their learning and develop their understanding and retention of key skills and vocabulary.
- Possible trips and/or visiting experts who will enhance the learning experience.
- Appropriate curriculum themed days/ home tasks to support the children with their learning journey.
- The display and celebration of children’s’ DT work in their class and/or as a whole school, to clearly demonstrate progress as aid to learning more and remembering more.

Implementation:	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Summer 2 whole school end of year project 2 day block
Nursery		Textiles- create a coaster  (weaving, different materials)		Children to have access to a range of materials, tools (hammers, pins, large nuts and bolts, large gears and construction lego) to be creative, share their ideas and make props to use in story telling.			Food Technology – whole school bake sale. Children decorate a biscuit to sell.
Reception		Textiles- create a piece of new fabric using a weaving card.		Children to have access to a range of materials, tools (hammers, pins, blue screws, screw drivers and hole punchers, lego gears, lego pulleys,			Food Technology – whole school bake sale.

			<p>mechanics, split pins to make basic levers, wheels and dowls, new mobile! To make vehicles) to be creative, share their ideas and make props to use in story telling.</p> <p>3D Paper sculpting</p>  <p>https://www.tts-group.co.uk/steam-cardboard-construction-tool-kit-360pk/1051861.html - making mrs armitage a new vehicle</p>			Children decorate a biscuit to sell.
<p>Year 1</p> <p>Design product for self</p> <p>Design product for others</p>		<p>Textiles- xmas tree decoration.</p>  <p>Running stitch with whole punched fabric to assist.</p>	<p>Mechanisms – Levers and sliders</p> <p>Making a rewards chart for new reception children to help them learn the school rules? Move the car along the road, move the unicorn across the rainbow.</p>		<p>Phonics Screening</p> <p>Technical knowledge-Structures: (Projects on a page) creating a new free standing structure for the playground (e.g. slide, swing, climbing frame).</p>	<p>Food Technology – whole school bake sale. Children decorate a biscuit to sell.</p>
<p>Year 2</p>		<p>Textiles - reusable bag</p>  <p>Running stitch with pen marked dots around fabric to guide.</p> <p>Pre-cut fabric.</p>	<p>Mechanisms - Wheels and axels :</p> <p>toy cars</p> <p>CAD</p> <p>2Design nets</p> <p>Printed on A3</p>		<p>SATS</p>	<p>Food Technology – whole school bake sale. Children decorate a biscuit to sell.</p>
<p>Year 3</p>		<p>Textiles – Finger puppet (deliver show for Rec)</p>	<p>Mechanisms- Levers and linkages and pneumatics</p>		<p>Electrical systems – series circuits using bulbs and programming:</p>	<p>Food Technology –</p>

		 <p>Running stitch independent. Cut fabric from a larger piece.</p> <p>Link to designer/ Design movement: COCO Chanel - designed new, comfortable fabrics and fashion.</p>		<p>Make a Pneumatic toy (KPOW/ projects on a page)</p>  <p>Home work - use Tinkercad to create your design in 3d modelling.</p>  <p>Link to designer/ Design movement: Samuel Ingersoll – invented the pneumatic drill</p>		<p>make a flashing badge for adults to wear when they are walking late at night. Create, monitor and test a simple circuit. HW: ask a grown up what they would want their badge to look like.</p> <p>Link to designer/ Design movement: Hary Beck - London underground map created from comparison to circuits.</p>	<p>whole school bake sale. Children decorate a biscuit to sell. Link to designer/ Design movement: Nadiya Hussain</p>
<p>Years 4</p>		<p>Textiles – Pencil case with zip</p>  <p>Introduce back stitch and children choose a preferred stitch. Cut fabric from a larger piece.</p> <p>Link to designer/ Design movement: Art Deco Post Modernism</p>		<p>Mechanisms – Existing products – wind up toys Make a slingshot car: build the chase themselves and use glue gun (building on skills about wheels and axels).</p> <p>Home work - use Tinkercad to create your design in 3d modelling.</p> <p>Link to designer/ Design movement: Adrian Newey – F1 race car designer/ engineer Thrust – creator of the Jet Car, holding the land speed record</p>		<p>Electrical systems – Series circuits using buzzers and programming: Making a torch or lantern for themselves. Programming the torch using a Crambler and a single LED.</p> <p>https://www.tts-group.co.uk/recycled-sturdy-cardboard-craft-rolls-24pk/AR02137.html - cardboard rolls</p> <p>Link to designer/ Design movement: Bauhaus School of design</p>	<p>Food Technology – whole school bake sale. Children decorate a biscuit to sell. Link to designer/ Design movement: Jamie Oliver</p>

<p>Year 5</p>		<p>Textiles – Stuffed toy for Dogs Trust</p>  <p>Blanket stitch Introduce blanket stitch for sewing up the whole. Children choose blanket stitch or back stitch to sew. Cut fabric from a larger piece.</p> <p>Link to designer/ Design movement: Tinker Hatfield – Nike shoe designer</p>	<p>Mechanisms – Gears and Pulleys https://www.youtube.com/watch?v=FtjSlKoPuKw</p> <p>The junior school is thinking about putting in a new lift system to help children get to their classes. Can you design a system that would work, where would it be? How much would it cost? What are the pros and cons?</p>  <p>Home work - use Tinkercad to create your design in 3d modelling.</p> <p>Link to designer/ Design movement: Elisha Otis - created the first safety device to be fitted to lifts to stop the lift from falling if the cable broke.</p>		<p>Electrical systems – using complex switches and programming to turn a light/ buzzer turn on and off. Design a money box for a child. (children choose the age range they wish to target with their design). Write the program for the money box to light up (choice of colours) when money is put in the box. Design the outer packaging for the box.</p> <p>https://www.youtube.com/watch?v=hKAlcmtEHEM</p> <p>Link to designer/ Design movement: Bauhaus Jonathan Ive – designer and engineer for apple</p>	<p>Food Technology – whole school bake sale. Children decorate a biscuit to sell. Link to designer/ Design movement: Michel Roux JR</p>
<p>Year 6</p>		<p>Textiles – making your own keyring</p>	<p>Mechanisms – cams</p> <p>Toy shop owner would like some new products. Design a new range of movable toys to inspire young children’s understanding</p>	<p>SAT S</p>	<p>Technical knowledge-Structures: design a tent that they could use to take with them on their residential trip. Use CAD to make design? Link to designer/ Design movement:</p>	<p>Food Technology – whole school bake sale. Children decorate a</p>



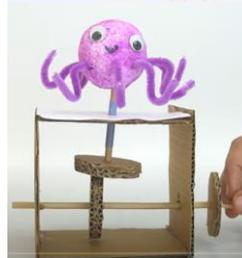
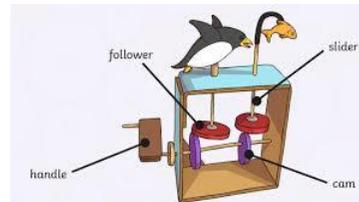
Children choose the most appropriate stitch for your project. Cut fabric from a larger piece.

Link to designer/ Design movement:

Vivian Westwood - used her clothes to make political statements. What statement does your key ring say about you?

of using handles to make things move.

Creating an automotive toy (Kapow) to be used for a purpose (e.g. to add interest or showcase products in local shop windows)
Use bitesize website – children can make a snail cam or round cam and they will do different things. Round cam follower will simply turn the object on top where a snail cam will move the object on top up and down.



<https://www.youtube.com/watch?v=JOfcZohKHrw>



<https://www.bbc.co.uk/bitesize/guides/zbtz6yc/revision/4>

Home work - use Tinkercad to create your design in 3d modelling.

Frank Getlry
Memphis movement
Zaha Hadid

biscuit to sell.
Link to designer/ Design movement:
Heston
Blumenthal

				Link to designer/ Design movement: Henry Ford – production line, used CAD/CAM technology			
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Intended Impact –

At the end of the Early Years Foundation Stage: As measured by the children’s progress towards the Early Learning Goal for Expressive Art and Design.

Children who have achieved the expected level of development in the early learning goal, can be assumed to be on-track to make sustained or accelerated progress when assessed against the curriculum in Key Stage 1.

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.

At the end of Key Stage 1: As measured by the children’s progress towards the National Curriculum.

Children who have followed the National Curriculum for Key Stage 1 and who have achieved the expected level of development in the Key Stage 1 learning objects, can be assumed to make sustained or accelerated progress against the Key Stage 2.

At the end of Key Stage 2: As measured by the children’s progress towards the National Curriculum.

Children who have followed the National Curriculum for Key Stage 2 and who have achieved the expected level of development in the Key Stage 2 learning objects, will have acquired the necessary skills to prepare them for the transition into the Key Stage 3 curriculum.