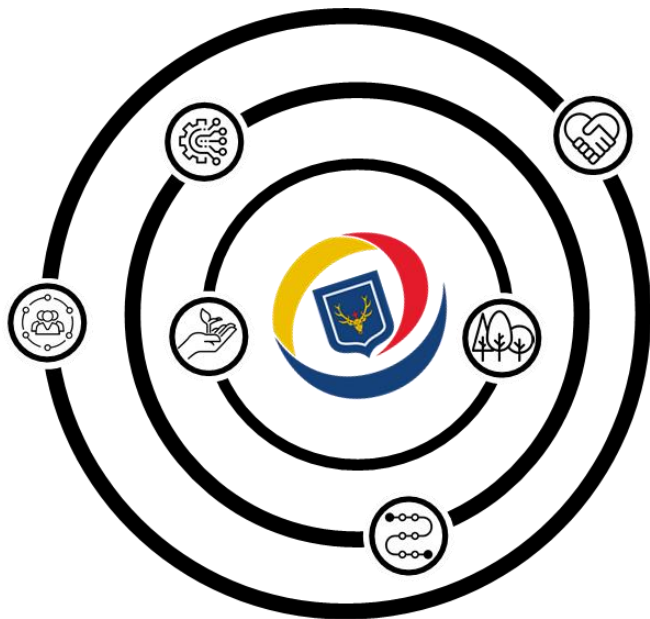


# OUR LADY AND ST. HUBERT'S PRIMARY

## Design and Technology Knowledge and Skills Progression



At Our Lady and St. Hubert's, home, school and parish work together, knowing that God is with us in all we do.

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# Design and Technology Curriculum Intent

The D&T curriculum is one which will allow students to become self-motivated and confident learners, who can work independently and as part of a team. The main aim is to ensure that learners develop technical and practical competencies as well as build upon our 6Cs curriculum. Our priority is for our students to become responsible citizens who see that they can make a positive contribution to society. At OLSH we aim to promote a love of learning and create opportunities for children in the wider world. Our DT curriculum, allows children to be inspired by engineers, designers, chefs and architects to enable them to create a range of structures, mechanisms, textiles, electrical systems and food products with a real life purpose. In line with the school aims, we believe that technology should develop lively and enquiring minds through the ability to question, argue rationally, investigate and process information.

## Implementation of the Design and Technology Curriculum

We believe that students learn best by 'doing' and by allowing them to experiment and take risks, in a safe and positive learning environment. This is achieved through imaginative teaching that will embrace and engage new technologies and link to the children's world. At the heart of this, is the desire to deliver a curriculum in which children express creativity through their designs and produce high quality outcomes. We approach all of our learning using Rosenshine's principles to support our pupils to know more and remember more of their curriculum and ensure that learning is secure before they move on to new information or skills. Students will have the opportunities to learn about designers/architects and their work, especially British designers. This will be implemented through teaching children about the 3 main processes of successful design; design, make and evaluate. In technology, the children will be given the skills to plan, carry out and evaluate a design project. Design and technology are essentially about providing opportunities for pupils to develop their capability, through combining their designing and making skills with knowledge and understanding, in order to create high quality products. It will stimulate both intellectual and creative abilities and develop personal qualities needed to complete a design project from initial ideas to finished products.

## Impact of the Design and Technology Curriculum

Students are able to improvise, adapt and overcome problems. Students develop an entrepreneurial eye and welcome a problem to be solved. Students feel supported and secure in making mistakes and do not aim for perfection. To enable students to combine their designing and making skills with knowledge and understanding, in order to design, make, analyse and evaluate products of high quality. Children express their own creativity through their designs and are more socially confident to give their opinions. Collaborative skills are honed so they can work successfully with a group, as well as on their own.

# The National Curriculum for Design and Technology

Main strands of learning- National Curriculum					
	Design	Make	Evaluate	Technical knowledge	Cooking and nutrition
Key Stage 1	<p>-design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <ul style="list-style-type: none"> <li>-generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul>	<p>-select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <ul style="list-style-type: none"> <li>-select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul>	<p>-explore and evaluate a range of existing products</p> <ul style="list-style-type: none"> <li>-evaluate their ideas and products against design criteria</li> </ul>	<p>-build structures, exploring how they can be made stronger, stiffer and more stable</p> <ul style="list-style-type: none"> <li>-explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul>	<p>-use the basic principles of a healthy and varied diet to prepare dishes</p> <ul style="list-style-type: none"> <li>-understand where food comes from.</li> </ul>
Key Stage 2	<p>-use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups</p> <ul style="list-style-type: none"> <li>-generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul>	<p>-select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <ul style="list-style-type: none"> <li>-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</li> </ul>	<p>-investigate and analyse a range of existing products</p> <ul style="list-style-type: none"> <li>-evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>-understand how key events and individuals in design and technology have helped shape the world</li> </ul>	<p>-apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <ul style="list-style-type: none"> <li>-understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>-understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>-apply their understanding of computing to program, monitor and control their products.</li> </ul>	<p>-understand and apply the principles of a healthy and varied diet</p> <ul style="list-style-type: none"> <li>-prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>-understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</li> </ul>

Whole School Progression							
Design (incl research)							
At EYFS:	At Key Stage 1		At Lower Key Stage 2:		At Upper Key Stage 2:		
	Year 1	Year 2	Year 3	Year 4			
<ul style="list-style-type: none"> <li>Children safely explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>Children represent their own ideas, thoughts and feelings orally or through drawings.</li> </ul>	<p><b>R1-</b> Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design and texture.</p> <p><b>R2-</b> Children learn about media and materials thinking about uses/purposes and properties.</p> <p><b>R3-</b> Children represent their own ideas, thoughts and feelings through discussion and drawings.</p> <p><b>D1-</b> Talk about what they want to make, in relation to their designs</p> <p><b>D2-</b> Draw a labelled picture of their product,</p> <p><b>D3-</b> Choose the materials/ingredients/tools they will use, from a selection.</p> <p><b>D4-</b> With support, write a list of the materials/ ingredients/tools they will need.</p>	<p><b>R1-</b> Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</p> <p><b>R2-</b> Children use what they have learnt about media and materials thinking about uses/purposes and properties.</p> <p><b>R3-</b> Children represent their own ideas, thoughts and feelings through discussion and drawings.</p> <p><b>D1-</b> Talk about what they want to make, in relation to the design brief.</p> <p><b>D2-</b> Draw a labelled picture of their product, which may include parts, components, materials.</p> <p><b>D3-</b> Choose the materials/ingredients/tools they will use, from a selection.</p> <p><b>D4-</b> Write a list of the materials/ ingredients/tools they will need.</p>	<p><b>R2-</b> Children use what they have learnt about media and materials in original ways, thinking about uses and purposes.</p> <p><b>R3-</b> Children represent their own ideas, thoughts and feelings through design and technology.</p> <p><b>D1-</b> Use their research to develop some of their own design criteria.</p> <p><b>D2-</b> Draw a fully labelled sketch/diagram of their product, including some measurements.</p> <p><b>D3-</b> Choose the materials/ ingredients /tools they will use, based on their suitability for the task.</p> <p><b>D4-</b> Write a detailed list of the materials/ ingredients/tools they will need.</p> <p><b>D5-</b> Indicate where components will go (Pneumatics)</p> <p><b>D6-</b> Order the main stages of their making process</p>	<p><b>R2-</b> Children use what they have learnt about media and materials in original ways, thinking about uses and purposes</p> <p><b>R3-</b> Children represent their own ideas, thoughts and feelings through design and technology.</p> <p><b>D1-</b> Use their research to develop some of their own design criteria.</p> <p><b>D2-</b> Draw a fully labelled sketch/diagram of their product, including some measurements- some may use computer aided design.</p> <p><b>D3-</b> Choose the materials/ ingredients /tools they will use, based on their suitability for the task.</p> <p><b>D5-</b> Indicate where electrical components will go and briefly explain how they will function.</p> <p><b>D6-</b> Order the main stages of their making process</p>	<p><b>R1-</b> Children safely use and critically explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p><b>R2-</b> Children use what they have learnt about media and materials in original ways, thinking about uses and purposes to benefit their design.</p> <p><b>R3-</b> Children represent their own ideas, thoughts and feelings through design and technology in a variety of ways.</p> <p><b>D1-</b> Use their research to develop their own design criteria.</p> <p><b>D2-</b> Draw a fully labelled/annotated sketch/diagram of their product.</p> <p><b>D3-</b> Choose the materials/ ingredients /tools they will use, based on their suitability for the task. Indicate where materials will be joined in order to create a stable structure.</p> <p><b>D4-</b> Write a detailed list of the materials/ ingredients/tools they will need- including sourcing their own materials where appropriate.</p> <p><b>D5-</b> Indicate where electrical components will go and briefly explain how they will function.</p> <p><b>D6-</b> Write (brief) instructions for how they intend to make their product.</p>	<p><b>R1-</b> Children safely use and critically explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p><b>R2-</b> Children use what they have learnt about media and materials in original ways, thinking about uses and purposes to benefit their design.</p> <p><b>R3-</b> Children represent their own ideas, thoughts and feelings through design and technology in a variety of ways using different forms of communication.</p> <p><b>D1-</b> Use their research to develop their own design criteria.</p> <p><b>D2-</b> Draw a fully labelled/annotated sketch/diagram of their product, including measurements and cross-sections- some may use computer aided design.</p> <p><b>D3-</b> Choose the materials/ ingredients /tools they will use, based on their suitability for the task. Indicate where/how materials will be joined in order to create a stable structure.</p> <p><b>D4-</b> Write a detailed list of the materials/ ingredients/tools they will need- including sourcing their own materials where appropriate. Indicate where mechanisms will go and explain how they will function</p> <p><b>D5-</b> Indicate where electrical components will go and briefly explain how they will function.</p> <p><b>D6-</b> Write (brief) instructions for how they intend to make their product.</p>	

Make- construction							
		<p><b>MC1-</b> Cutting- Mark materials before cutting. Cut paper and other materials safely and with increasing accuracy.</p> <p><b>MC2-</b> Joining- Begin to choose the most effective joining methods for the task/materials. Use simple components, such as split pins.</p> <p><b>MC3-</b> Testing- Test their product as they work.</p> <p><b>MC4-</b> Improving- Apply their knowledge of materials to make a structure more stable as they work.</p> <p><b>MC5-</b> Extra component- explore and use a simple mechanism (drawbridges)</p>	<p><b>MC1-</b> Cutting- Mark and measure materials before cutting. Cut paper and other materials safely and with increasing accuracy.</p> <p><b>MC2-</b> Joining- Begin to choose the most effective joining methods for the task/materials.</p> <p><b>MC3-</b> Testing- Test their product as they work, to see if it meets the requirements of the intended user.</p> <p><b>MC4-</b> Improving- Apply their knowledge of materials to make a structure stiffer/ more stable as they work.</p> <p><b>MC5-</b> Extra component- explore and use a simple mechanism (axels)</p>	<p><b>MC1-</b> Cutting - Measure and mark materials before cutting. Cut materials accurately. Score and fold paper/card accurately.</p> <p><b>MC2-</b> Joining- Join a range of materials using a variety of methods, usually choosing the method most suited to the task.</p> <p><b>MC3-</b> Testing- Test their product as they work, making informed adjustments to ensure their product meets the design criteria.</p> <p><b>MC4-</b> Improving- Apply their prior knowledge and understanding to make structures stiffer/ more stable as they work. Check design criteria as they work.</p> <p><b>MC5-</b> Combine a number of components together in different ways (Pneumatics)</p> <p><b>MC6-</b> Finishing- Pay attention to the finishing of their product.</p>	<p><b>MC1-</b> Cutting - Measure and mark materials before cutting. Cut materials accurately, using appropriate tools. Score and fold paper/card accurately.</p> <p><b>MC2-</b> Joining- Join a range of materials using a variety of methods, usually choosing the method most suited to the task.</p> <p><b>MC3-</b> Testing- Test their product as they work, making informed adjustments to ensure their product meets the design criteria.</p> <p><b>MC5-</b> Extra component- Create a basic electrical circuit/simple mechanical component (Solar/wind powered mechanisms and Night Lights) and incorporate it into their product.</p> <p><b>MC6-</b> Finishing- Pay attention to the finishing of their product.</p>	<p><b>MC2-</b> Joining- Join a range of materials using a variety of suitable methods.</p> <p><b>MC3-</b> Testing- Test their product as they work, making informed adjustments and striving to address any anticipated problems.</p> <p><b>MC4-</b> Improving- Apply their prior knowledge and understanding to make structures stiffer/ more stable as they work.</p> <p><b>MC5-</b> Extra component- Create a working mechanism (pulleys and gears) and incorporate it into their product.</p> <p><b>MC6-</b> Finishing- Create a polished and well-finished product.</p>	<p><b>MC2-</b> Joining- Join a range of materials using a variety of suitable methods.</p> <p><b>MC3-</b> Testing- Test their product as they work, making informed adjustments..</p> <p><b>MC4-</b> Improving- Apply their prior knowledge and understanding to make structures stiffer/ more stable as they work. Does it meet the design criteria? Who is the audience?</p> <p><b>MC5-</b> Extra component- Create a basic electrical circuit and incorporate it into their product. Programme a computer to control their product.</p> <p><b>MC6-</b> Finishing- Create a polished and well-finished product.</p>
Make- textiles (see also Art progression)							
		<p><b>MT4-</b> Design- Creating a design on fabric using fabric pens/paint.</p>	<p><b>MT1-</b> Technique- threading a needle.</p> <p><b>MT2-</b> Skills- Sewing using running stitch.</p> <p><b>MT3-</b> Cutting- Cutting fabric carefully</p> <p><b>MT4-</b> Design- Creating a design on fabric using applique or</p>	<p><b>MT4-</b> Design- Use a paper pattern. Creating a design on fabric using applique.</p>	<p><b>MT1-</b> Technique- threading a needle, knotting your thread.</p> <p><b>MT2-</b> Skills- Sewing using running stitch, attempting to produce neat, equal stitches. Sewing on simple components using buttons.</p> <p><b>MT3-</b> Cutting- Cutting fabric carefully</p> <p><b>MT4-</b> Design- Use a paper pattern. Creating a design on fabric using applique. Ch could include a fastening component – button/press stud.</p>	<p><b>MT4-</b> Design- Making/using a paper pattern - more than one piece.</p>	<p><b>MT1-</b> Technique- threading a needle, knotting your thread, finishing off. Show awareness of seam allowance- turning out so stitching is hidden.</p> <p><b>MT2-</b> Skills- Sewing neatly using running stitch/back stitch. Sewing on simple components, e.g buttons/sequins/ribbons.</p> <p><b>MT3-</b> Cutting- Cutting fabric carefully</p> <p><b>MT4-</b> Design- Making/using a paper pattern- more than one piece. Create a design on fabric or using fabric pens/paint.</p>

## Evaluate

		<p><b>E1-</b> Positive- Describe what went well.</p> <p><b>E2-</b> Critique- Describe anything that didn't work as well and any changes they had to make.</p> <p><b>E4-</b> Improve- Suggest how their product could be improved.</p>	<p><b>E1-</b> Positive- Describe what went well and which aspects of their product they are pleased with.</p> <p><b>E2-</b> Critique- Describe anything that didn't work as well and any changes they had to make.</p> <p><b>E3-</b> Audience- Discuss what the intended user might think about the product.</p> <p><b>E4-</b> Improve- Suggest how their product could be improved.</p>	<p><b>E1-</b> Positive- Identify and discuss the strengths of their product.</p> <p><b>E2-</b> Critique- Identify any areas for development/ improvements that could be made.</p> <p><b>E4-</b> Improve- Suggest how their product could be improved.</p>	<p><b>E1-</b> Positive- Identify and discuss the strengths of their product.</p> <p><b>E2-</b> Critique- Identify any areas for development/ improvements that could be made.</p> <p><b>E3-</b> Audience- Discuss whether the product meets the requirements of the brief/the needs of the user – is it fit for purpose?</p> <p><b>E4-</b> Improve- Suggest how their product could be improved. Take part in peer evaluation, giving and receiving feedback from fellow pupils.</p>	<p><b>E1-</b> Positive- Identify and discuss the strengths of their product.</p> <p><b>E2-</b> Critique- Identify any areas for development/ improvements that could be made.</p> <p><b>E3-</b> Audience- Discuss whether the product meets the requirements of the brief/the needs of the user – is it fit for purpose?</p> <p><b>E4-</b> Improve- Suggest how their product could be improved. Take part in peer evaluation, giving and receiving feedback from fellow pupils.</p>	<p><b>E1-</b> Positive- Identify and discuss the strengths of their product.</p> <p><b>E2-</b> Critique- Identify any areas for development/ improvements that could be made.</p> <p><b>E3-</b> Audience- Discuss whether the product meets the requirements of the brief/the needs of the user – is it fit for purpose?</p> <p><b>E4-</b> Improve- Suggest how their product could be improved. Take part in peer evaluation, giving and receiving feedback from fellow pupils.</p>
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## OLSH 'Cooking in the Curriculum' whole school overview

Each year group has a carefully designed recipe to follow every half term, learning the basics of food preparation and cooking. Skills are consolidated each year as well as new skills identified for each year group.

Children will then build up their own recipe book at home and are encouraged to share each recipe with their families.

See table below for progression of technical skills

	Autumn Term		Spring Term		Summer Term	
	Half term 1	Half term 2	Half term 1	Half term 2	Half term 1	Half term 2
Reception	Toast	Fruit salad / fruit kebab	Pancakes	Berry mess	Pasta Salad	Fruit smoothie
Year 1	Dips and dunkers	Festive Muffins	Pancakes	Pasta bake	Toasted pitta pockets	Apricot whip
Year 2	Pitta pizzas	Blueberry muffins	Chunky pasta soup	Carrot cookies	Cous Cous Salad	Ice lollies
Year 3	Tomato pasta sauce	Chocolate and courgette cakes	Carrot and coriander soup	Tinned fruit crumble	Pizza	Fruit flap jack
Year 4	Bread	Cranberry and cinnamon tray back	Cheese and potato pie	Fruit fool	Quesadillas	Summer pudding
Year 5	Apple and parsnip soup	Christmas cake	Sausage and bean hot pot	Scones	Chickpea and mushroom curry	Fruit crumble
Year 6	Cottage pie	Mince pies	Salmon/tuna fish cakes	Mini Victoria sponges	Vegetable lasagne	Marble cake

### Cooking and nutrition

#### Technical skills progression







EYFS	Year 1	Year 2	Year 3 and 4	Year 5 and 6
Cut Blend Rolling Mixing Spreading Weighing	<u>As EYFS, plus:</u> Chop Break an egg Grate Grill Bake Sieve	<u>As Year 1, plus:</u> Peel Boil Mash Follow a recipe Open a tin	<u>As KS1, plus:</u> Rub Fry Fold	<u>As LKS2, plus:</u> Whisk Knead





## The 6Cs and Design and Technology

How our 6Cs will be evident through our computing curriculum

 <p>Character</p>	 <p>Citizenship</p>	 <p>Communication</p>
<p>The children's character skills will be showcased in DT, where they will regularly be challenged to design and make a product- learning from each attempt, failure or set back. Children will learn to embrace these 'failures' as opportunities to learn and improve.</p>	<p>Through various projects, children will be faced with problems that affect themselves, and/or others around the world. They will use design briefs along with the 'design, make, evaluate' process, to plan ways to solve or support these issues.</p>	<p>Through DT lessons, children will have various opportunities to present and explain their work to a range of audiences. They will also be given opportunities to tailor their products to a design brief- for a specific age range or audience</p>
 <p>Collaboration</p>	 <p>Creativity</p>	 <p>Critical thinking</p>
<p>Through the design, make, evaluate process there are lots of opportunities for children to work collaboratively. Assessing each person's strengths in a team, making group decisions and working together to achieve one outcome.</p>	<p>Children will be given lots of opportunities to identify problems, and then have chance to design and make products that solve them, incorporating various DT skills and elements. This will develop their 'entrepreneurial eye' and encourage them to take action.</p>	<p>DT lessons will involve children thinking critically throughout the process, about a variety of decisions that they will need to make. This could be regarding choices of materials, use of images to fit a design brief in the best way, decisions regarding packaging or cost etc... Children will be taught how to make these decisions in an informed way, using other curriculum knowledge to help them.</p>