



Design & Technology

Lytchett Matravers Primary School's D&T Curriculum Intent

At LMPS we aim to inspire children in Design and Technology using creativity and imagination. Pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.

Children learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world, they explore this further through their mathematics, science, geography, history and art topics to develop a broad range of subject knowledge.

In KS1, our designers and technicians will...

- Design purposeful, functional, appealing products for themselves and other users based on design criteria.

- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

- Explore and evaluate a range of existing products & evaluate their ideas and products against design criteria.

- Build structures, exploring how they can be made stronger, stiffer and more stable.

- Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

In KS2, our designers and technicians will...

- 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

- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

- 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.

- Investigate and analyse a range of existing products.

- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

- Understand how key events and individuals in design and technology have helped shape the world.

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].

- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].

- Apply their understanding of computing to program, monitor and control their products.

**Design and technology CURRICULUM –****EYFS****Year 1****Year 2****Intent**

Our designers and technicians in the Early Years Foundation Stage are curious and can talk about what they are making.

Our designers and technicians in Year 1 are curious and excited to explore how things are made and which materials are fit for purpose.

Our designers and technicians in Year 2 are curious and excited to explore how materials are selected for a specific purpose and joined together to make a product.

Planning Considerations

Continuous provision in construction zones to allow to develop their creativity and building skills.

Do they understand the method for making the product?
Do they know how to be safe and hygienic?
Do they understand what materials and components are and what their uses are?

Can they measure accurately?
Do they understand basic shapes?
Demonstrate how to assemble and combine materials.
Do they understand how the product is made?

Skills

- Selects from a range of tools, materials and components available through continuous provision.
- Uses junk modelling to create a product based on their own ideas or a supplied stimulus.

- Selects from a range of tools, materials and components.
- Uses a range of materials, components, construction kits and mechanical products.
- Measures, marks out, shapes and cuts out most materials.
- Talk about likes and dislikes of existing products.
- Talk and write about how to make their products better.
- To identify skills they have used to make each product.
- Explain what the purpose of what they have made it.
- To discuss how they have made each product and how it works.

Measures, marks out, shapes and cuts out most materials.

- Assembles, joins and combines materials and components.
- Talks about likes and dislikes of existing products and gives reasons.
- Talk about their design ideas and what they are making.
- Able to identify skills that they have used and they that was the appropriate skill.
- Explain the purpose of products and the requirements of the user.

Knowledge

Our designers and technicians...
Can discuss what they are making and how.

- Our designers and technicians
- Plans by suggesting what to do next.
 - Explore products, what they are made from, who they are for and how they are used .
 - They know how to operate simple equipment and show interest in toys with flaps, buttons, and mechanism and can operate them successfully.

Our designers and technicians...

- Explains their choices.
- Use a success criteria to make choices and judgements about their products.
- Write a plan for making.

Our Pupil Promise... key opportunities and experiences for all of our pupils

To be given the opportunity to explore tools and materials.
To be given opportunities to invent and explore their own ideas.
Construction zone.

To make a moving picture.

To design and make a moving vehicle.



Design and technology CURRICULUM –

Year 3	Year 4	Year 5
Intent		
Our designers and technicians in year 3 are curious and can talk about how materials are selected for a specific purpose and joined together to make a product that is practical and appealing to the eye.	Our designers and technicians in Year 4 are curious and can talk about how materials are selected for a specific purpose and joined together to make a product that is practical and appealing to the eye.	Our designers and technicians in Year 5 are curious and can talk about which materials are best for specific purposes and what is the most efficient way to join them together to make them fit for purpose and visually appealing.
Planning Considerations		
Do they understand how the product is made? Demonstrate finishing techniques appropriate for each of the products, discussing their purpose. Model how children should fully explain what material choices etc they have made and why?	Do they understand how the products are made? Model how children should fully explain what material choices etc they have made and why?	Do they understand how the products are made? Model how children should fully explain what material choices etc they have made and why? Problem solving how can they repair/ fix something during the making process?
Skills		
<ul style="list-style-type: none"> Select tools and equipment suitable to the tasks. Selects materials and components suitable to the task. Measures, marks out, cuts and shapes materials and components with some accuracy. Able to apply several finishing techniques. Investigate and analyse how well the products worked, have they achieved their purpose. Use their design criteria to critically evaluate what they have made. Recognise that materials can be combined and mixed to combine more useful characteristics. 	<ul style="list-style-type: none"> Select tools and equipment suitable to the tasks. Use a wide range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients. Measures, marks out, cuts and shapes materials and components with some accuracy. Using a range of materials and components. Able to apply several finishing techniques Refer to design criteria whilst designing and making and use to evaluate and improve what they have made. 	<ul style="list-style-type: none"> Able to accurately apply several finishing techniques including those from art and design sessions. Use techniques that involve resourcefulness when trying to solve a problem during the process of making. Evaluate their ideas and products against their original design specification. Use learning from science, mathematics and other subjects and sources to design and make products.
Knowledge		
Our designers and technicians... <ul style="list-style-type: none"> Explain their choices, giving evidence. Order the main stages of making logically Follow procedures for safety and hygiene. Understand that materials have functional and aesthetic qualities. Know how mechanical systems such as levers and linkages create functional products. 	Our designers and technicians... <ul style="list-style-type: none"> Explain their choices, giving evidence Understand that materials have functional and aesthetic qualities and apply this to their design and making process. To know that simple electrical circuits and components can be used to create functional products. 	Our designers and technicians... <ul style="list-style-type: none"> Formulate a step by step plan for the designing and making process. Produce a list of tools, materials and components suitable for completing. Know that mechanical systems e.g. cams, pulleys or gears create movement. Adapt recipes by adding or substituting one or more ingredients.
Our Pupil Promise... key opportunities and experiences for all of our pupils		
To make a stone age round house ?	To make and design a light box.	To design and make a cam toy.

**Design and technology CURRICULUM –****Year 6****Intent**

Our designers and technicians in the Year 6 are curious and can talk about which materials are best for specific purposes and what is the most efficient way to join them together to make them fit for purpose and visually appealing.

Planning Considerations

Do they understand how the products are made?
 Model how children should fully explain- what material choices etc they have made and why?
 Problem solving how can they repair/ fix something during the making process?
 Costings? Do they understand how much the product costs to make?

Skills

- Use a wide range of materials and components e.g. mechanical, construction kits, electrical.
- Measures, marks out, cuts and shapes materials and components with some accuracy. .
- Able to accurately apply several finishing techniques including those from art and design sessions.
- Use techniques that involve resourcefulness, resilience and innovation when trying to solve a problem during the process of making.
- Critically evaluate the quality of the design, manufacture and fit for purpose of product.

Knowledge

- Formulate a step by step plan for the designing and making process.
- Explain next steps in their learning drawing on their prior experience.
- Produce a list of tools, materials and components suitable for completing.
- Begin to plan costings using a spread sheet. .
- Investigate who designed the products, where were they made , when products were designed and made; whether products can be re-used or recycled.
- Know that mechanical and electrical systems have input, process and output.

Our Pupil Promise... key opportunities and experiences for all of our pupils

To design and make a suspension bridge.

