



## Design Technology Curriculum Overview (LTP)

### EYFS

#### Personal, Social and Emotional Development

3-4: Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.

#### Physical Development

3-4: Use large-muscle movements to wave flags and streamers, paint and make marks.

3-4: Choose the right resources to carry out their own plan.

3-4: Use one-handed tools and equipment, for example, making snips in paper with scissors.

R: Progress towards a more fluent style of moving, with developing control and grace.

R: Develop their small motor skills so that they can use a range of tools competently, safely and confidently.

R: Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.

#### Understanding the World

3-4: Explore how things work.

#### Expressive Arts and Design

3-4: Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.

3-4: Explore different materials freely, in order to develop their ideas about how to use them and what to make.

3-4: Develop their own ideas and then decide which materials to use to express them.

3-4: Create closed shapes with continuous lines, and begin to use these shapes to represent objects.

R: Explore, use and refine a variety of artistic effects to express their ideas and feelings.

R: Return to and build on their previous learning, refining ideas and developing their ability to represent them.

R: Create collaboratively, sharing ideas, resources and skills.

#### Fine Motor Skills

ELG: Use a range of small tools, including scissors, paintbrushes and cutlery.

#### Creating with Materials

ELG: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

ELG: Share their creations, explaining the process they have used.

EYFS	Autumn		Spring		Summer	
Nursery	<b>I Wonder What Makes Me Special</b>	<b>Special Times</b>	<b>Once Upon a Time</b>	<b>People Who Help Us</b>	<b>All Creatures Great and Small</b>	<b>Out and About</b>
	Begin to use construction kits to build for a purpose and explore how things work.	Explore a range of different materials including clay to make and mould clay lamps.	Choose the correct resources to design and make houses similar to those in familiar stories.	Become more confident with using a range of tools and understand their purpose when making healthy smoothies/ fruit kebabs.	Explore different materials freely, to design and make minibeast clay models and explore weaving to create spider webs/ nests.	Become increasingly confident with small world activities to represent the school/ local area and use a range of construction kits to build and explain why certain shapes have been chosen.
Reception	<b>Me and My School</b>	<b>Celebrations</b>	<b>Traditional Tales</b>	<b>'Out of this World'</b>	<b>Come Outside</b>	<b>The World Around Us</b>
	Use a range of construction materials (large and small) to represent building in the local area using balancing and joining skills.	Develop fine motor skills to use a range of tool to make patterns in clay lamps.	Select materials and experiment with joining and balancing to create a bridge for the troll. Use different equipment safely to make a Gingerbread Man.	Design and make structures using small and large construction materials including recycled materials to make a space rocket collaboratively.	Use prior learning to build on, refine ideas and create own musical instruments using natural materials.	Design and make a boat using construction and natural materials; selecting materials for a purpose – will it float? Is it waterproof?

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. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. [Links to wider curriculum to provide relevant contexts \(where appropriate\)](#)

**Key Stage 1 – Pupils should be taught:**

- Design** ✦ 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, ICT
- Make** ✦ select from and use a range of tools and equipment to perform practical tasks [E.g. 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
- Evaluate** ✦ explore and evaluate a range of existing products ✦ evaluate their ideas and products against design criteria
- Technical knowledge** ✦ build structures, exploring how they can be made stronger, stiffer and more stable ✦ explore and use mechanisms [E.g. levers, sliders, wheels and axles], in their products.
- Cooking and Nutrition** ✦ use the basic principles of a healthy and varied diet to prepare dishes ✦ understand where food comes from.

KS1	Autumn	Spring	Summer		
Year 1	<b>Structures: Constructing Windmills</b> Science/ Geography: Weather	<b>Textiles: Puppets</b> History: Childhood (Autumn) English: Traditional Tales	<b>Mechanisms: Wheels and Axles</b>	<b>Mechanisms: Making a Moving Story Book</b> English: Instructions	<b>Food: Fruit and Vegetables</b> PSHE: Health Week
	Designing, decorating and building a windmill for their mouse client to live in, developing an understanding of different types of windmill, how they work and their key features.	Explore different ways of joining fabrics before creating hand puppets based upon characters from a well-known fairytale. Develop technical skills of cutting, glueing, stapling and pinning.	Learn about the main components of a wheeled vehicle. Develop understanding of how wheels, axles and axle holders work; problem-solve why wheels won't rotate; to design and build their own vehicle designs.	Experiment with sliders before planning and making three pages of a moving story book, based on a familiar story, drawing the page backgrounds, creating the moving parts and assembling it.	Handle and explore fruits and vegetables and learn how to identify which category they fall into, before undertaking taste testing to establish chosen ingredients for a smoothie they will make, with accompanying packaging.
Year 2	<b>Structures: Baby Bears Chair</b> English: Traditional Tales Science: Everyday Materials	<b>Textiles: Pouches</b> Mother's Day	<b>Mechanisms: Fairground Wheel</b> History: Great Fire of London (London Eye) – Autumn	<b>Mechanisms: Making a Moving Monster</b> Geography: Continents & Oceans (Spring) Geography: Australia	<b>Food: Balanced Diet</b> PSHE: Health Week
	Using the tale of Goldilocks and the Three Bears as inspiration, pupils help Baby Bear by making him a brand new chair, exploring different shapes and materials. When designing the chair, they consider his needs and what he likes.	Introduction to sewing. Pupils make their own template, accurately cut their fabric and sew a basic running stitch	Design and create a functional Ferris wheels, consider how the different components fit together so that the wheels rotate and the structure stands freely. Select appropriate materials and develop their cutting and joining skills.	After learning the terms: pivot, lever and linkage, pupils design a monster that will move using a linkage mechanism. Pupils practise making linkages and experiment with various materials to bring their monsters to life.	Explore and learn what forms a balanced diet, pupils will taste test ingredient combinations from different food groups that will inform a wrap design of their choice which will include a healthy mix of protein, vegetables and dairy.

**Key Stage 2- Pupils should be taught:**

- Design** ✦ 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
- Make** ✦ select from and use a wider range of tools and equipment to perform practical tasks [E.g. 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
- Evaluate** ✦ 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
- Technical knowledge** ✦ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ✦ understand and use mechanical systems in their products [E.g. gears, pulleys, cams, levers and linkages] ✦ understand and use electrical systems in their products [E.g. series circuits incorporating switches, bulbs, buzzers and motors] ✦ apply their understanding of computing to program, monitor and control their products.
- Cooking and Nutrition** ✦ 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, and know where and how a variety of ingredients are grown, reared, caught and processed.

KS2	Autumn	Spring	Summer		
Year 3	<b>Structure: Constructing a Castle</b> Science: Rocks History: Stone Age to Iron Age	<b>Textiles: Egyptian Collars</b> History: Ancient Egypt	<b>Mechanical Systems: Pneumatic Toys</b> Science: Forces and Magnets	<b>Electrical Systems: Electric Poster</b> History: Roman Britain	<b>Food: Eating Seasonally</b> PSHE: Health Week
	Learning about the features of a castle, pupils design and make one of their own. They will also be using configurations of handmade nets and recycled materials to make towers and turrets before constructing a stable base.	Having learnt the basics of sewing and decorating fabric in key stage one, this unit builds on the children's repertoire by introducing two new skills: cross-stitch and appliqué. After learning these techniques, the children apply their knowledge to the design, decoration and assembly of their very own Egyptian Usekh /Wesekh collars to represent their unique personalities.	Design and create a toy with a pneumatic system, learning how trapped air can be used to create a product with moving parts. Pupil are introduced to thumbnail sketches and exploded diagrams.	An introduction to information design and electrical systems, pupils create an electric poster using a basic circuit to develop a museum display about The Romans.	Pupils discover when and where fruits and vegetables are grown and learn about seasonality in the UK. They look at the relationship between the colour of fruits and vegetables and their health benefits by making three dishes
Year 4	<b>Electrical Systems: Torches</b> Science: Electricity (Y3 – Light)	<b>Textiles: Fastenings</b> Mother's Day	<b>Structure: Pavillions</b> Science: Living Things and Their Habitats	<b>Mechanical Systems: Making a Slingshot Car</b> History: World War Two	<b>Food: Adapting a Recipe</b> PSHE: Health Week
	Pupils apply their scientific understanding of electrical circuits to create a torch made from recycled and reclaimed materials and objects. They design and evaluate their product against set design criteria.	Building upon their sewing skills from previous years, pupils design and create a book sleeve; exploring a variety of fastenings and selecting the most appropriate for their design based on strength and appropriate use.	Explore pavilion structures, learn about what they are used for and investigate how to create strong and stable structures before designing and creating their own pavillions, complete with cladding.	Transform lollipop sticks, wheels, dowel and straws into a moving car. Pupils use a glue gun to construct, make the launch mechanism, design and create the chassis of a vehicle using nets.	Work in groups to adapt a simple biscuit recipe, to create the tastiest biscuit ensuring that their creation comes within the given budget of overheads and costs of ingredients.