



# Design and Technology

What are the Key Concepts and Ideas that we want children to learn about in this subject through their education?

1. Children will research a range of real life products and evaluate their purpose and function so that they can solve problems and innovate for themselves.
2. Children will use their creativity and imagination to become interdependent designers and creators with a desire to enhance or adapt existing products.
3. Children will develop and use a range of materials and embed and apply a range of practical skills in order to create an end product.
4. Children will show resilience when continuously critiquing their own and others designs and products.
5. Each year, children will have an opportunity to learn about food preparation, hygiene and cooking techniques. Children will apply the principles of nutrition and healthy eating, instilling a love of cooking.
6. Children will combine and apply skills and knowledge of Design and Technology through the exploration of STEM learning.

How do these concepts progress throughout the school?

EYFS	KS1	KS2
<ul style="list-style-type: none"> <li>• Children to develop creativity and imagination when creating complex 'own worlds' using experiences and stories to help encourage design ideas. (1, 2, 3)</li> <li>• Children will begin to develop fine motor skills to explore and use a range of different materials. (3, 7)</li> <li>• Children will begin to share their creations, explaining the process they have used. (2,4)</li> </ul>	<ul style="list-style-type: none"> <li>• Children's designs will include more technical aspects, where they will choose the appropriate materials to create effective joins for a range of products. (1, 2, 3)</li> <li>• A broader range of stimulus including designers and existing products are used to help influence the design ideas, process and help children reflect on their own ideas. (1, 2, 4)</li> </ul>	<ul style="list-style-type: none"> <li>• Children are given the opportunity for the full design cycle to be more independent, and also to develop more technical skills that would be necessary to have when creating a certain type of product and fulfil a design purpose / brief. (1, 2, 3)</li> <li>• Children will evaluate their work continuously throughout the whole process and be expected to make adaptations if designs are not effective. They will understand that sometimes initial designs change and consider how they would improve a product if their designed / made again. (1, 2, 4)</li> </ul>
<p>Each year, children will build on knowledge and embed further skills surrounding food hygiene. They will grow throughout school, promoting a love for cooking. (5)</p>		

	Autumn	Spring	Summer
Nursery	<p>Children will begin to make imaginative and complex 'small worlds'.</p> <p>Children will begin to become familiar with softer materials and look at how to join them together. This will be through sewing stockings.</p>	<p>Children will begin to understand the importance of food hygiene by baking.</p> <p>Children will understand how different foods are healthy for our bodies and how fruit is important for us.</p>	<p>Children will begin to use a range of materials in their provision. They will build structures of their homes using the different materials.</p>
Reception	<p>Children will begin to make imaginative and complex 'small worlds'.</p> <p>Children will begin to progress their understanding of food hygiene through learning how to make pumpkin soup.</p>	<p>Children explore different materials freely in order to develop ideas and make choices.</p> <p>Children will develop their small motor skills in order to use a range of tools competently, safely and confidently.</p> <p>Children will be using a range of different materials with the outcome of building a castle.</p>	<p>Children will safely use and explore a variety of materials, tools and techniques experimenting with texture, form and function.</p> <p>Children will use trial and error to determine how materials have different functions. They will decide which material will be most suited to make a boat.</p>
Year 1	<p>Children will learn the importance of a clear design criteria.</p> <p>Children will reflect on their end products and begin the evaluation stage by explaining their likes and dislikes.</p> <p>Children will create a moving picture and begin to adapt mechanisms. Children will test their end products.</p> <p>Children will use testing to identify which parts make their moving product stop and start and begin to identify simple mechanisms.</p>	<p>Children will continue to follow clear designs and begin to use a template when creating their own designs.</p> <p>Children will build on prior knowledge of materials to follow instructions when cutting and assembling materials/structures.</p> <p>Children will describe their product and begin explain why they used particular materials they did.</p>	<p>Children will continue their understanding of how different foods are healthy for us.</p> <p>Children will begin to use a range of cutting methods to create their own super salad.</p> <p>Children will be able to discuss which vegetables they used in their salad and how they will help their bodies.</p>

<p>Year 2</p>	<p>Children will begin to generate and communicate their ideas by sketching and modelling.</p> <p>Building on their prior learning, pupils will design their products based on a clear design criteria and create a free standing structure of St Paul's Cathedral.</p> <p>Children will begin to evaluate their own work based on a design criteria and opinions from their peers.</p>	<p>Children will design a healthy fruit salad based on foods that work well together to match a design brief, focusing on a balanced diet. Children will begin to use equipment to slice ingredients safely.</p> <p>Children will evaluate through appearance and then taste their final product to discuss texture, taste and smell.</p>	<p>When designing a puppet, children will use a template to support them when cutting and stitching fabrics that they have selected as their own choice.</p> <p>Children will begin to thread a needle to stitch more neatly.</p> <p>Progressing within evaluation skills, children will discuss as a class as well as in peers surrounding the quality of their stitching.</p>
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<p>Year 3</p>	<p>Children will build on their prior knowledge of structures. They will begin to understand and work with net templates to support them when building a biscuit box.</p> <p>Children will be evaluating the effectiveness of their biscuit box by investigating whether it supports the biscuits inside and whether the design is appealing to their choice of user.</p> <p>Children will incorporate their mathematical skills by learning how 2d shells can make 3d shapes.</p>	<p>Children will build on prior knowledge of their stitching from Year 2. They will be designing and creating their own Bronze Age axe holder.</p> <p>Children will be reinforcing the knowledge of joining a range of different materials together using needles and thread.</p> <p>Children will be working to a design brief, supporting them with their understanding of life from the Bronze Age.</p>	<p>Children will be learning how foods from other countries and cultures can influence the foods that we eat today.</p> <p>Children will be encouraged to sample and evaluate foods from Egypt including a range of dips.</p> <p>Children will be designing their own Egyptian dip based on the ones that they have tried. They will then be creating their own using a range of ingredients.</p> <p>Children will evaluate their final product by sampling it and discussing how similar or different it is from the dips from the Egyptian culture.</p>
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<p>Year 4</p>	<p>Building on prior learning of structures, children will build a stable structure to support weight by selecting and using a range of materials to meet a design criteria.</p> <p>Children will create their designs in accordance with a plan and when evaluating will describe what characteristics of the construction was most effective, linking to current learning of Romans.</p> <p>Children will work in groups to develop their collaboration skills to support them when building a Roman Aqueduct.</p>	<p>Children in Year 4 will begin to understand how electrical systems are important.</p> <p>Children will use their knowledge of electrical systems to design a night light for a user of their choice.</p> <p>Children's products will include a working electrical circuit and appropriate materials.</p> <p>Children will adapt and assemble their product embedding their knowledge when following a design criteria.</p> <p>By the end of this topic, children will identify and understand electrical components and how they work and articulate the positives and negatives about different torches.</p>	<p>Children will be continuing their understanding of food hygiene by creating a roman sandwich.</p> <p>Children will be building their learning from the Viking topic to understand what the Vikings ate. They will be then creating their own Viking Sandwich Snacks.</p> <p>Children will build on their prior learning and factor budget into their design, drawing upon their previous tasting and testing. Children will consider hygiene and know how to avoid contamination.</p> <p>Children will also consider the budget and the design when evaluating their end product.</p>
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<p>Year 5</p>	<p>Children will continue developing their understanding of mechanical systems by working with wheels and axles.</p> <p>Children will evaluate the design of everyday products using wheels and axles and will create an adaptation of their own.</p> <p>Children will begin to consider different issues that can happen in society and think of products that can be created to erase these. Children will be creating a product using wheels and axles to fix an issue that we have.</p> <p>Children will evaluate their product, reflecting on the purpose and whether the product meets the intended purpose for creation.</p>	<p>Children will identify and use seasonal ingredients to create a recipe, using their previous learning to consider the appearance, taste, smell and texture of the dish.</p> <p>Children will follow instructions from a recipe and prepare food safely.</p> <p>While evaluating, children will consider the benefits of seasonal food on the environment.</p> <p>Progressing from earlier years, children will now consider packaging to reflect a recipe. Children will cut and prepare safely using a range of equipment independently, remembering the importance of cross contamination and food hygiene. Linking to previous year groups, children will identify and describe the benefits of healthy foods groups.</p>	<p>Children will design and create a designer bag, choosing shapes to meet a criteria.</p> <p>Linking to previous knowledge of textiles, children will consider proportions of individual components when making their product.</p> <p>Children will create their 3D product based on a 2D design, measuring, marking and cutting fabric.</p> <p>Building on evaluation skills, children will test and evaluate their products and suggest further improvements.</p>
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<p>Year 6</p>	<p>Building on their knowledge of structures to support weight, children will create a frame structure with a focus on triangulation. Children will use a range of different shaped beams, measuring and assembling independently.</p> <p>Children will give careful consideration to the materials, design and how the structures are used, using their knowledge of effective and ineffective designs.</p> <p>Children will adapt and improve their own structures by identifying points of weakness and reinforcing them as necessary.</p> <p>Children will then progress within their peer evaluation and identify what makes a successful structure.</p>	<p>Linking to previous years within KS2, children will now use their knowledge of electrical components and name these within their designs.</p> <p>Children will generate their ideas to create an alarmed vehicle through both sketches and discussion, whilst modelling their ideas through prototypes.</p> <p>Children will tweak motors to improve their function and construct an alarm of their choice.</p> <p>Children will make and test their circuit throughout, before testing their own and others at the end, identifying what went well and make suggestions for improvements.</p>	<p>Building on from Year five, where children adapt a recipe, children will now write their own recipe and explain the key steps, method and ingredients including facts and drawings from research.</p> <p>Children will then follow this recipe, including the correct quantities of ingredients and work to a given timescale.</p> <p>Children will have the knowledge, understanding and skills to work safely and hygienically with independence.</p> <p>Children will evaluate their recipe against their end products and link this to their prior skills of evaluation surrounding appearance, taste, texture and smell.</p> <p>Children will also evaluate the health and safety during the production of the product and consider improvements in productions.</p>
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