

Design & Technology Curriculum Road Map EYFS

2-3 Year Olds – Building Blocks

Children in the 2-3 year old rooms will have the opportunity to explore different materials, using all their senses to investigate them. Children will be provided the resources to manipulate and play with different materials using their imagination to consider what they can do with the different materials. Children will begin to make simple models which express their ideas and children will be encouraged to build using materials aimed at stimulating their interest in modelling i.e. junk modelling.

Why do we follow on with this unit?
To allow children to continue to develop their curiosity around materials

What skills will we continue to build upon?
Understanding of how to stack objects together

3-4 Year Olds – Building Blocks

Children in the 3-4 year old rooms will continue to explore materials freely and will begin to develop their own ideas about to use them and what to make. Through this the children will decide which materials to use to express their ideas. Children will begin to explore how to join different materials together and investigate different textures.

Year R – Building blocks

Children in Reception will be provided with a range of materials to construct with. Children will be encouraged to discuss what they want to make and discuss problems and how they may be resolved as they arise. Children will be taught different techniques for joining materials such as how to use tape and different types of glue. Children will be taught how to use a range of tools and how to use them with care and precision.

Why do we follow this unit?
To build upon children confidence when exploring and creating.

What skills do we continue to build upon?
To provide children the opportunity to build upon their knowledge of how to join materials together.

Design Technology Curriculum Road Map Year 1



Autumn

Frame Structures

Children will learn the importance of building structures. They will examine a range of examples, identifying shapes, their purpose, how the parts have been joined together and how have they been made strong enough. They will design and build a chair fit for a purpose and a target audience. They will then evaluate their developing ideas and final products against their original design criteria.

Why do we follow on with this unit?
To develop the children's understanding of construction materials.

What skills will we continue to build upon?
Understanding of how to use a range of tools to perform practical tasks.

Spring

Slider Mechanisms

Children will use their early experiences of working with paper and card to make simple flaps and hinges. They will experience cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape. Ideas will be generated based on simple design criteria and their own experiences, as well as exploring a range of existing books and everyday products that use simple slider mechanisms.

Summer

Cooking: Portable Snacks

Children will examine a range of food items, understanding their name, where it is grown, its appearance, taste and smell. They will understand how to use simple utensils and practice food-processing skills such as washing, peeling, slicing, squeezing. Children will explore variety of portable snacks and understand the process that has gone into making it. They will select a range of ingredients to create their final product. They will also evaluate their decisions and modify the recipe applying their technical and practical knowledge of cooking and nutrition.

Why do we follow on with this unit?
To develop the children's ability to communicate their ideas.

What skills will we continue to build upon?
Understanding of how to select resources and ingredients according to their characteristics.



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Curriculum Road Map Year 2

Autumn

Wheels and Axle Mechanisms - wind-powered vehicle

Children will further develop their understanding of materials, components and techniques used to create a product. They will explore the use of wheels, axles and axle holders, distinguishing between fixed and freely moving axles to create a wind-powered vehicle. They will understand the product they are designing and why they are designing it, with the intended user in mind. They will use a range of materials and techniques to do so, generating ideas which draws on their own experiences.

What skills will we continue to build upon?
Understanding of utensils and their function and the characteristics of fruit and veg to create an aesthetically pleasing dish

Spring

Cooking: Couscous Salad

Children will use their understanding of the characteristics of different ingredients to group familiar food groups and understand their purpose. They will understand the use of different utensils in the kitchen and their purpose. They will assemble ingredients of their choice based on their knowledge and understanding of fruits and vegetables and create a well-balanced, aesthetically pleasing, healthy dish.

Summer

Textiles: Animal Hand Puppets

Children will understand how simple 3D textile products are made and use templates to create identical 3D shapes. They will understand how fabrics are joined using a range of stitching techniques with support. They will create a design criteria fit for purpose and they will be able to describe the process and materials used to make their product and, with aid, demonstrate finishing techniques and the purpose of doing so.

Why do we follow on with this unit?
To develop the children's ability to select from and use a range of tools and equipment to perform practical

What skills will we continue to build upon?
Understanding of how to evaluate their ideas and outcomes against design criteria.

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Curriculum Road Map Year 3

Autumn

Paper Circuits - Paper Circuit Greetings Card

Children will develop their understanding of circuits, components and the process used to create a product. They will improve their understanding of materials and how they can be best used. They will apply their knowledge of techniques to decide which will be most appropriate for this task and decide which materials and components they will need to include. Finally, they will test their design ideas and evaluate their work by applying their technical and practical knowledge of paper circuits to further develop their product.

What skills will we continue to build upon?
Understanding of utensils and their function and the characteristics of fruit and veg to create an aesthetically pleasing dish

Spring

Shell Structures - Cardboard Chair

Children will develop and use their knowledge of how to construct strong, stiff structures to create a cardboard chair that can hold some weight. They will plan their design and select the appropriate tools and equipment to create their 3D product, fit for an intended purpose. They will seek inspiration for their product and be able to explain their choice of materials and techniques against their design brief.

Summer

Cooking: Vegetable soup

Children will understand how a simple vegetable soup is made and the nutritional value and ingredients used. They will have the opportunity to taste a range of ingredients, commenting on the appearance, taste, texture. They will use different cooking techniques, building upon previous knowledge, and will use a range of utensils to create a step-by-step recipe for their own vegetable soup, understanding what ingredients would work well in a soup and thinking about the consistency and texture it will have once it is made. They will make their product using their chosen ingredients and then evaluate its appearance and taste in order to make improvements.

Why do we follow on with this unit?
To develop the children's ability to select from and use a range of tools and equipment to perform practical

What skills will we continue to build upon?
Understanding of how to evaluate their ideas and outcomes against design criteria.

Design Technology Curriculum Road Map Year 4

Autumn

Cooking - Hummus dip

Children will understand and apply the principles of a healthy and varied diet. They will learn how ingredients are grown/sourced and understand elements of dishes and the ingredients that are required to create a finished dish that is nutritious and aesthetically pleasing. The children will follow a recipe to make a tasty hummus dip, adapting a range of recipes where necessary to change the appearance and taste to suit the consumers needs.

Why do we follow on with this unit?

To develop the children's understanding of creating aesthetically pleasing products intended for a specific user and purpose

What skills will we continue to build upon?

Understanding of how to analyze products that already exist in order to replicate the skills used to create their own product

Spring

App Control - Lifestyle Helper

Children will explore some of the many everyday devices that are controlled by apps. They will investigate the difference between internal and external devices and will understand key terminology such as app-enabled, Bluetooth or WiFi. They will use LEGO® Education SPIKE™ Prime to create a lifestyle helper and coding systems to control the product remotely. They will then apply their knowledge of components and programming to decide which instructions will be most appropriate for the product. Finally, they will evaluate their decisions and modify their product by applying their technical and practical knowledge.

Summer

Linked Levers - Fold-away Safety Barrier and Pneumatics - Pneumatic lifting device

Children will investigate and analyze products that have a range of lever and linkage mechanisms and develop their understanding of their purpose, how they move and how the mechanisms work. They will develop a design brief and generate a range of ideas in a meaningful context. Once agreed on the design criteria, they will be guided towards making their product using the mechanisms and skills modelled to them, and then evaluate their final product against their design criteria and modify it if appropriate.

Children will also observe familiar objects that use air to make them work in order for them to construct a simple pneumatic system. They will be demonstrated a range of pneumatic mechanisms using prepared teaching aids, different-sized syringes and connectors and how to assemble the systems using accuracy to measure, mark out, cut and join. The children will then use these skills to develop a design brief and assemble their pneumatic lifting device and evaluate their product based on their design brief.

Why do we follow on with this unit?
To develop the children's understanding that products need to be appealing and functional.

What skills will we continue to build upon?
Understanding of how to evaluate against design criteria.

Design Technology Curriculum Road Map Year 5

Autumn

Arch Structures - Building with an Arch Roof

Children will be using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials along with their basic understanding of what structures are and how they can be made stronger, stiffer and more stable to design and create a building with an arch roof. They will experiment with different materials to build a range of arch structures and develop their understanding of how to add strength to a structure. They will develop their skills and techniques to construct frames and join framework materials together.

Why do we follow on with this unit?

To develop the children's understanding of a healthy, varied diet and what constitutes this

What skills will we continue to build upon?

Understanding and building upon skills and techniques and experimenting with more advanced methods

Spring

Cooking - Bread Rolls

Children will understand how bread is made and how the ingredients are sourced, understanding the nutritional value and the ingredients needed to make different types of bread. They will have the opportunity to taste a range of sweet and savory breads, commenting on the appearance, taste, texture. They will use a range of cooking techniques, building upon previous knowledge of this as well as the use of a range of utensils to create a step-by-step recipe for their own sweet or savory bread, understanding what ingredients would work well in a bread and thinking about the consistency and texture it will have once it is baked. They will make their product using their chosen ingredients and then evaluate its appearance and taste, taking peers views into account to make improvements.

Summer

CAMS: Automaton Toy

Children will apply their knowledge and their experience of axles, axle holders and wheels, as well as their basic understanding of different types of movement to understand cams and how cams can be used to produce different types of movement and change the direction of movement. They will experience using equipment and materials to create their finished product and they will demonstrate how they can be used to make an off-center cam and position it accurately. They will use this knowledge to make a moving automaton toy and evaluate it based on the design specification.

Why do we follow on with this unit?
To develop the children's understanding of building prototypes

What skills will we continue to build upon?
Understanding of how to apply computing knowledge

Design Technology Curriculum Road Map Year 6



Autumn

Pulleys/gears: Aerial Cable Car

Children will use their experiences of axles, axle holders and wheels that are fixed or free moving along with their basic understanding of electrical circuits and cutting and joining techniques to investigate gears and the direction and speed of rotation. They will build a working circuit that incorporates a battery, motor and a switch and they will demonstrate the use of tools and equipment accurately, drawing the circuit out and representing symbols accurately.

The children will then produce a step-by-step plan and a list of tools and equipment needed and then create their own aerial cable car using the skills learnt, focusing on finishing techniques and evaluating against the design specification and functionality of the product.

Why do we follow on with this unit?

To develop the children's understanding of how to disassemble a product and evaluate its qualities to create own products

What skills will we continue to build upon?

Evaluating products based on design brief

Spring

Textiles: T-shirt with embroidered letters

Children will build upon their previous textile knowledge and skills to analyze and investigate a range of embroidered letters and patterns, evaluating their fabric shapes, how they have been joined, strengthened and stiffened and fastenings that have been used. They will create a mock-up, building upon previous basic stitching techniques, using more advanced stitching, improving appearance of stitching and consistency. They will develop their skill of sewing by joining together and making seams, learning how to attach wadding and how to start and finish off a row of stitches. They will understand how to leave seam allowances and practice different cutting techniques. They will use these skills and skills previously learnt to create their own embroidered lettering for a T-shirt and evaluate their product based on its functionality and visual appeal.

Summer

Cooking: A Meal for a Hero

In this unit, children will develop their knowledge and understanding of food hygiene, nutrition, healthy eating and a varied diet. They will be able to use appropriate utensils and equipment and apply a range of techniques for combining ingredients. They will use this knowledge to understand the elements required to make a tasty, nutritious and inexpensive meal for under £10. They will also write a step-by-step recipe, including a list of ingredients, equipment and utensils needed. Children will follow this recipe to make a starter, a main and a dessert and evaluate their product with reference back to the design specification/recipe taking the views of others when identifying improvements in terms of taste, nutritional value and aesthetics of the dishes.

Why do we follow on with this unit?
To develop the children's understanding of artistic creativity

What skills will we continue to build upon?
Understanding of how to plan for a project brief.