



Learning Together, Success Forever

Long Term Planning

Design and Technology

Design and Technology Long Term Plans

Topic Overview

Cycle A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	People Who Help Us		Traditional Stories		Explorers	
	The Great Fire of London		The British Isles Calverton and the Isle of Struay		Explorers	
Year 1		Mechanisms <i>Moving pictures</i>		Structures/mechanisms <i>Making a boat/ferry</i>		Food <i>Making a healthy sandwich for an Explorer</i>
Year 2		Mechanisms <i>Winding mechanisms</i>		Structures/mechanisms <i>Making a boat/ferry</i>		Food <i>Making a healthy sandwich for an Explorer</i>

Cycle B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	People Who Help Us		Traditional Stories		Explorers	
	The Victorians		Calverton and India		Explorers	
Year 1		Structures <i>Bridges</i>		Mechanisms <i>Making a tuk tuk</i>		Textiles <i>Making a pouch for a compass</i>
Year 2		Structures <i>Bridges</i>		Mechanisms <i>Making a tuk tuk</i>		Textiles <i>Making a pouch for a compass</i>

EYFS Development Matters	Autumn	Spring	Summer
	People Who Help Us	Traditional Tales	Explorers

Characteristics of Effective Teaching and Learning	<ul style="list-style-type: none"> • playing and exploring – children investigate and experience things, and ‘have a go’ • active learning – children concentrate and keep on trying if they encounter difficulties, and enjoy achievements • creating and thinking critically – children have and develop their own ideas, make links between ideas, and develop strategies for doing things
Physical Development	<p>3 and 4 year olds will be learning to: Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel. Collaborate with others to manage large items, such as moving a long plank safely, carrying large hollow blocks. Use one-handed tools and equipment, for example making snips in paper with scissors. Use a comfortable grip with good control when holding pens and pencils. Show a preference for a dominant hand.</p> <p>Children in reception will be learning to: Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons. <i>Fine Motor Skills ELG Children at the expected level of development will:</i> - Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases; - Use a range of small tools, including scissors, paint brushes and cutlery; - Begin to show accuracy and care when drawing.</p>
Expressive Arts and Design	<p>3 and 4 year olds will be learning to: Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. Create closed shapes with continuous lines and begin to use these shapes to represent objects. Draw with increasing complexity and detail, such as representing a face with a circle and including details. Use drawing to represent ideas like movement or loud noises.</p> <p>Children in reception will be learning to: Return and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills. <i>Creating with Materials ELG Children at the expected level of development will:</i> - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function; - Share their creations, explaining the process they have used; - Make use of props and materials when role playing characters in narratives and stories.</p>
Understanding the World (also see science)	<p>3 and 4 year olds will be learning to: Explore how things work. Explore and talk about different forces they can feel.</p> <p>Children in reception will be learning to: <i>No related statements. *children will continue to develop previous skills and prior learning through planned opportunities relating to each theme.</i></p>

Key Stage 1 Cycle A

Autumn - Mechanisms

<p>Year 1 <i>Moving pictures</i></p>	<p>Design:</p> <ul style="list-style-type: none"> Design purposeful, functional, appealing moving picture 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. <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks eg cutting, shaping, joining, finishing. Select from and use a wide range of materials and components, including construction materials according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate a range of sliders. Evaluate their ideas and moving picture against design criteria. <p>Technical knowledge:</p> <ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms eg levers, sliders, pivots in their products. 	<p>All children will be able to:</p> <ul style="list-style-type: none"> identify the direction of movement in a sliding mechanism. understand the terms 'lever' and 'pivot'. describe what a pivot is. discuss ideas for how they could incorporate moving mechanisms into pictures. follow a design to create a picture with a moving mechanism. <p>evaluate their own moving pictures and say what they think and feel about them.</p> <p>Most children will be able to:</p> <ul style="list-style-type: none"> investigate different ways of making sliders. combine and join materials to make lever mechanisms. cut out and join components to create a wheel mechanism. design a picture with a moving mechanism. work safely with a variety of tools and materials to create a moving mechanism. <p>identify what they have done well and suggest how they could make improvements.</p> <p>Some children will be able to:</p> <ul style="list-style-type: none"> evaluate their work and identify areas for future development. generate ideas for different ways of using lever mechanisms in moving pictures. evaluate their work and identify areas for future development. convey in pictures and words how they will create their moving picture. identify ways in which they can improve their finished products. <p>give their opinion about the work of other children and give positive feedback.</p>
<p>Year 2 <i>Winding Mechanisms</i></p>	<p>Design:</p> <ul style="list-style-type: none"> Design a winch to lift a bucket to help extinguish the fire based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate, information and communication technology. <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks eg cutting, shaping, joining, finishing. Select from and use a wide range of materials and components, including construction materials according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate winches and winding mechanisms eg hosepipe, fishing rod reel. Evaluate their ideas against design criteria. <p>Technical knowledge:</p> <ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms eg a winding mechanism to enable the bucket to move to the top of the fire. 	<p>All children will be able to:</p> <ul style="list-style-type: none"> explain what a winding mechanism is and what they are used for. use materials to construct a base and a winding mechanism. understand that some materials are better to use than others than others. design a winding mechanism that follows a theme. follow a design to create a winding mechanism describe the design and construction process clearly. <p>Most children will be able to:</p> <ul style="list-style-type: none"> describe the features of a winding mechanism understand that some materials are stronger than others. choose appropriate materials to create a mechanism explain what materials to use to construct a mechanism choose appropriate materials to make a winding mechanism understand how to evaluate a process <p>Some children will be able to:</p> <ul style="list-style-type: none"> know how to join materials together successfully. explain how to make a structure spin on an axis. make predictions about the construction process. construct a winding mechanism that represents a particular theme share their experience with other class members.

Spring – Structures/Mechanisms

<p>Year 1 <i>Design and make a boat/ferry</i></p>	<p>Design:</p> <ul style="list-style-type: none"> Design a boat based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate, information and communication technology. <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks eg cutting, shaping, joining, finishing. Select from and use a wide range of materials and components, including construction materials according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate a variety of different boats including the power source. Evaluate their ideas and boats against design criteria. <p>Technical knowledge:</p> <ul style="list-style-type: none"> Explore and use mechanisms such as a propeller to make the boat move as well as sails. 	<p>All children will be able to:</p> <ul style="list-style-type: none"> identify a variety of different types of boats. choose materials to use as the body of the boat. design a boat to include appropriate features suitable to carry passengers. follow a design to create a boat. evaluate a finished product by identifying what they did well.
		<p>Most children will be able to:</p> <ul style="list-style-type: none"> identify the main features of a variety of boats. know that there are two different power sources. identify different ways of combining materials to create the body of the boat. describe which materials and tools they will need to make their boat. use a variety of materials and tools safely and effectively to create a boat. evaluate a finished product by identifying what could be improved.
		<p>Some children will be able to:</p> <ul style="list-style-type: none"> identify the uses for a variety of boats. experiment with a range of materials and techniques to combine power sources identify different ways of decorating the body of a boat. discuss their designs and say what they think and feel about them. identify ways in which they could improve their products and amend accordingly. identify ways in which they could improve their work with DT in the future.
<p>Year 2 <i>Design and make a boat/ferry</i></p>	<p>Design:</p> <ul style="list-style-type: none"> Design a boat based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate, information and communication technology. <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks eg cutting, shaping, joining, finishing. Select from and use a wide range of materials and components, including construction materials according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate a variety of different boats including the power source. Evaluate their ideas and boats against design criteria. <p>Technical knowledge: Explore and use mechanisms such as a propeller to make the boat move as well as sails.</p>	<p>All children will be able to:</p> <ul style="list-style-type: none"> identify a variety of different types of boats. choose materials to use as the body of the boat. design a boat to include appropriate features suitable to carry passengers. follow a design to create a boat. <p>evaluate a finished product by identifying what they did well.</p>
		<p>Most children will be able to:</p> <ul style="list-style-type: none"> identify the main features of a variety of boats. know that there are two different power sources. identify different ways of combining materials to create the body of the boat. describe which materials and tools they will need to make their boat. use a variety of materials and tools safely and effectively to create a boat. <p>evaluate a finished product by identifying what could be improved.</p>
		<p>Some children will be able to:</p> <ul style="list-style-type: none"> identify the uses for a variety of boats. experiment with a range of materials and techniques to combine power sources identify different ways of decorating the body of a boat. discuss their designs and say what they think and feel about them. identify ways in which they could improve their products and amend accordingly. <p>identify ways in which they could improve their work with DT in the future.</p>

<p>Year 1 <i>Design and make a sandwich</i></p>	<p>Design:</p> <ul style="list-style-type: none"> • Design a healthy sandwich. • Generate, develop, model and communicate their ideas through talking, using drawings to record ideas as they are developed and adding notes to drawings to help explanations. <p>Make:</p> <ul style="list-style-type: none"> • Select from and use a range of tools and equipment to make the sandwich. • Select ingredients explain the ingredients they are using and why • Discuss their work as it progresses. <p>Evaluate:</p> <ul style="list-style-type: none"> • Explore a range of different sandwiches. • Say what they think and feel about the sandwiches they have made and why <p>Cooking and nutrition:</p> <ul style="list-style-type: none"> • Explain where food comes from • Cut, peel, grate chop a range of ingredients • Work safely and hygienically. • Understand the need for a variety of foods in a diet. • Group familiar food products. • Eatwell Guide 	<p>All children will be able to:</p> <ul style="list-style-type: none"> • talk about a range of different sandwiches • recognise the different food in sandwiches • recall the Eatwell Guide. • tell you different sandwiches and explorer will like. • talk about the health and safety steps. • recall the products they have made. <p>Most children will be able to:</p> <ul style="list-style-type: none"> • talk about where food originally comes from. • describe the different food they have tasted. • Make a sandwich following instructions. • design a sandwich using the design sheet. • follow their design sheet to create their product. • say which was their favourite sandwich <p>Some children will be able to:</p> <ul style="list-style-type: none"> • evaluate the sandwiches they have made. • explain what an Eatwell guide is. • evaluate their final product. • write a shopping list using their design sheets. • say why they have chosen this as their favourite food.
<p>Year 2 <i>Design and make a sandwich</i></p>	<p>Design:</p> <ul style="list-style-type: none"> • Design a healthy sandwich. • Generate, develop, model and communicate their ideas through talking, using drawings to record ideas as they are developed and adding notes to drawings to help explanations. <p>Make:</p> <ul style="list-style-type: none"> • Select from and use a range of tools and equipment to make the sandwich. • Select ingredients explain the ingredients they are using and why • Discuss their work as it progresses. <p>Evaluate:</p> <ul style="list-style-type: none"> • Explore a range of different sandwiches. • Say what they think and feel about the sandwiches they have made and why <p>Cooking and nutrition:</p> <ul style="list-style-type: none"> • Explain where food comes from • Cut, peel, grate chop a range of ingredients • Work safely and hygienically. • Understand the need for a variety of foods in a diet. • Group familiar food products. • Eatwell Guide 	<p>All children will be able to:</p> <ul style="list-style-type: none"> • talk about a range of different sandwiches • recognise the different food in sandwiches • recall the Eatwell Guide. • tell you different sandwiches and explorer will like. • talk about the health and safety steps. <p>recall the products they have made.</p> <p>Most children will be able to:</p> <ul style="list-style-type: none"> • talk about where food originally comes from. • describe the different food they have tasted. • Make a sandwich following instructions. • design a sandwich using the design sheet. • follow their design sheet to create their product. <p>say which was their favourite sandwich</p> <p>Some children will be able to:</p> <ul style="list-style-type: none"> • evaluate the sandwiches they have made. • explain what an Eatwell guide is. • evaluate their final product. • write a shopping list using their design sheets. • say why they have chosen this as their favourite food.

Autumn – Structures

<p>Year 1 <i>Bridges</i></p>	<p>Design:</p> <ul style="list-style-type: none"> Design a bridge for a particular purpose based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing and writing. <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks eg cutting, shaping, joining, finishing. Select from and use a wide range of materials and components, including construction materials, textiles and according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate a range of bridges and their purposes. Evaluate their bridge against design criteria. <p>Technical knowledge:</p> <ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable. 	<p>All children will be able to:</p> <ul style="list-style-type: none"> recognise some different types of bridges and their features. make decisions about which materials to use for a particular purpose. make effective use of triangles design a bridge for a particular person or purpose. follow a design to create a bridge say what they think and feel about their finished bridges <p>Most children will be able to:</p> <ul style="list-style-type: none"> identify and name shapes within bridges select and use a variety of techniques for joining materials together successfully. choose materials and joining methods for creating bridges apply prior knowledge when designing a bridge choose appropriate materials, tools and techniques to create a model bridge evaluate the work of others and give their opinions in a constructive way. <p>Some children will be able to:</p> <ul style="list-style-type: none"> draw a bridge using a variety of shapes. suggest ways of improving their structures or making them stronger. gather and develop ideas for how to decorate their bridge select the materials and tools they will need to make their bridges use finishing techniques to improve the overall quality of their product. suggest ways in which they could improve their product if they were to make it again.
<p>Year 2 <i>Bridges</i></p>	<p>Design:</p> <ul style="list-style-type: none"> Design a bridge for a particular purpose based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing and writing. <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks eg cutting, shaping, joining, finishing. Select from and use a wide range of materials and components, including construction materials, textiles and according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate a range of bridges and their purposes. Evaluate their bridge against design criteria. <p>Technical knowledge:</p> <ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable. 	<p>All children will be able to:</p> <ul style="list-style-type: none"> recognise some different types of bridges and their features. make decisions about which materials to use for a particular purpose. make effective use of triangles design a bridge for a particular person or purpose. follow a design to create a bridge <p>say what they think and feel about their finished bridges</p> <p>Most children will be able to:</p> <ul style="list-style-type: none"> identify and name shapes within bridges select and use a variety of techniques for joining materials together successfully. choose materials and joining methods for creating bridges apply prior knowledge when designing a bridge choose appropriate materials, tools and techniques to create a model bridge <p>evaluate the work of others and give their opinions in a constructive way.</p> <p>Some children will be able to:</p> <ul style="list-style-type: none"> draw a bridge using a variety of shapes. suggest ways of improving their structures or making them stronger. gather and develop ideas for how to decorate their bridge select the materials and tools they will need to make their bridges use finishing techniques to improve the overall quality of their product. <p>suggest ways in which they could improve their product if they were to make it again.</p>

Spring –Mechanisms

<p>Year 1 <i>Design and make a tuk tuk</i></p>	<p>Design:</p> <ul style="list-style-type: none"> Design a vehicle based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate, information and communication technology. <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks eg cutting, shaping, joining, finishing. Select from and use a wide range of materials and components, including construction materials according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate a variety of different vehicles. Evaluate their ideas and vehicles against design criteria. <p>Technical knowledge:</p> <ul style="list-style-type: none"> Explore and use mechanisms, wheels and axles, in their vehicles. 	<p>All children will be able to:</p> <ul style="list-style-type: none"> identify a variety of different types of vehicles. choose materials to use as the body of a vehicle. design a vehicle to include wheels, axles, chassis and bodies. follow a design to create a vehicle. evaluate a finished product by identifying what they did well. <p>Most children will be able to:</p> <ul style="list-style-type: none"> identify the main features of a variety of vehicles. know that there are two different ways of attaching wheels to axles. identify different ways of combining materials to create the body of a vehicle. describe which materials and tools they will need to make their vehicles. use a variety of materials and tools safely and effectively to create a vehicle. evaluate a finished product by identifying what could be improved. <p>Some children will be able to:</p> <ul style="list-style-type: none"> identify the uses for a variety of vehicles. experiment with a range of materials and techniques to combine wheels, axles and chassis. identify different ways of decorating the body of a vehicle including ICT. discuss their designs and say what they think and feel about them. identify ways in which they could improve their products and amend accordingly. identify ways in which they could improve their work with DT in the future.
<p>Year 2 <i>Design and make a tuk tuk</i></p>	<p>Design:</p> <ul style="list-style-type: none"> Design a vehicle based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate, information and communication technology. <p>Make:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks eg cutting, shaping, joining, finishing. Select from and use a wide range of materials and components, including construction materials according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> Explore and evaluate a variety of different vehicles. Evaluate their ideas and vehicles against design criteria. <p>Technical knowledge: Explore and use mechanisms, wheels and axles, in their vehicles.</p>	<p>All children will be able to:</p> <ul style="list-style-type: none"> identify a variety of different types of vehicles. choose materials to use as the body of a vehicle. design a vehicle to include wheels, axles, chassis and bodies. follow a design to create a vehicle. <p>evaluate a finished product by identifying what they did well.</p> <p>Most children will be able to:</p> <ul style="list-style-type: none"> identify the main features of a variety of vehicles. know that there are two different ways of attaching wheels to axles. identify different ways of combining materials to create the body of a vehicle. describe which materials and tools they will need to make their vehicles. use a variety of materials and tools safely and effectively to create a vehicle. <p>evaluate a finished product by identifying what could be improved.</p> <p>Some children will be able to:</p> <ul style="list-style-type: none"> identify the uses for a variety of vehicles. experiment with a range of materials and techniques to combine wheels, axles and chassis. identify different ways of decorating the body of a vehicle including ICT. discuss their designs and say what they think and feel about them. identify ways in which they could improve their products and amend accordingly. identify ways in which they could improve their work with DT in the future.

<p>Year 1 <i>Design and make a pouch to protect a compass</i></p>	<p>Design:</p> <ul style="list-style-type: none"> • Design a pouch based on design criteria. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate, information and communication technology. <p>Make:</p> <ul style="list-style-type: none"> • Select from and use a range of tools and equipment to perform practical tasks eg scissors to cut, needles to sew. • Select from and use a wide range of materials and components, including textiles, thread/cotton, buttons and decorative materials according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> • Explore and evaluate a range of pouches/purses. • Evaluate their ideas and pouches against design criteria. 	<p>All children will be able to:</p> <ul style="list-style-type: none"> • describe what pouches/map pockets are and how they are used. • use a template to cut out appropriate sizes of fabric • use running stitch and/or over stitch to join two pieces of fabric together. • design a pouch for a particular purpose. • describe the steps they will need to take to create their pouch • evaluate their own finished products and say what they think and feel about them. <p>Most children will be able to:</p> <ul style="list-style-type: none"> • recognise and describe a variety of different types of pouches/map pockets • develop ideas by putting components together. • use a needle and thread to attach buttons and other features to material. • describe what materials and tools they will need to make their pouch • follow their designs to create their pouch • comment on the work of others and offer their opinions. <p>Some children will be able to:</p> <ul style="list-style-type: none"> • identify the features of a variety of pouches • discuss their finished work and evaluate what went well and what could be improved. • work safely and sensibly with a variety of materials and sharp tools, such as needles and scissors. • identify ways in which they could improve their work in the future.
<p>Year 2 <i>Design and make a pouch to protect a compass</i></p>	<p>Design:</p> <ul style="list-style-type: none"> • Design a pouch based on design criteria. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and where appropriate, information and communication technology. <p>Make:</p> <ul style="list-style-type: none"> • Select from and use a range of tools and equipment to perform practical tasks eg scissors to cut, needles to sew. • Select from and use a wide range of materials and components, including textiles, thread/cotton, buttons and decorative materials according to their characteristics. <p>Evaluate:</p> <ul style="list-style-type: none"> • Explore and evaluate a range of pouches/purses. • Evaluate their ideas and pouches against design criteria. 	<p>All children will be able to:</p> <ul style="list-style-type: none"> • describe what pouches/map pockets are and how they are used. • use a template to cut out appropriate sizes of fabric • use running stitch and/or over stitch to join two pieces of fabric together. • design a pouch for a particular purpose. • describe the steps they will need to take to create their pouch <p>evaluate their own finished products and say what they think and feel about them.</p> <p>Most children will be able to:</p> <ul style="list-style-type: none"> • recognise and describe a variety of different types of pouches/map pockets • develop ideas by putting components together. • use a needle and thread to attach buttons and other features to material. • describe what materials and tools they will need to make their pouch • follow their designs to create their pouch <p>comment on the work of others and offer their opinions.</p> <p>Some children will be able to:</p> <ul style="list-style-type: none"> • identify the features of a variety of pouches • discuss their finished work and evaluate what went well and what could be improved. • work safely and sensibly with a variety of materials and sharp tools, such as needles and scissors. <p>identify ways in which they could improve their work in the future.</p>