



Design and Technology Long Term Plan -Enquiry Questions



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year One	How can we make our photo frames stable?		How can we make a picture move?		Which fruit make the best fruit kebabs?	
Year Two	How do wheels and axles make a vehicle move smoothly?		How can we join fabric together?		What makes a healthy snack?	
Year Three	How are Christmas stockings made?		What levers and linkages would make the best mechanical poster?		How do you make a healthy lunch?	
Year Four	What materials would be used to build a mini greenhouse?		Can you make an alarm system to guard a treasure?		Can you plan and make a Mexican dish?	
Year Five	Can you alter the ingredients when making bread?		What features do I need to make a motorised vehicle?		How many different ways can I stitch fabric together?	
Year Six	Can burgers be a healthy option?		How are strong bridges built and how can they be built to move?			



Design and Technology Long Term Plan -Early Years / National Curriculum Content



Nursery	Autumn Term 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<p>Me, My Family & My School EAD Creating with Materials</p> <ul style="list-style-type: none"> -Explore different materials freely, in order 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. 	<p>Seasons, celebrations, colour and light. Let's Celebrate EAD Creating with Materials</p> <ul style="list-style-type: none"> -Explore different materials freely, in order 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. 	<p>Nursery Rhyme-time (Julia Donaldson) EAD Creating with Materials</p> <ul style="list-style-type: none"> -Explore different materials freely, in order 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. - 	<p>Superheroes EAD Creating with Materials</p> <ul style="list-style-type: none"> -Explore different materials freely, in order 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. 	<p>Nursery On the farm (Jack and the beanstalk) EAD Creating with Materials</p> <ul style="list-style-type: none"> -Explore different materials freely, in order 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. 	<p>Nursery Wild animals – around the world EAD Creating with Materials</p> <ul style="list-style-type: none"> -Explore different materials freely, in order 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.

Reception	Autumn Term		Spring Term		Summer Term	
	Provide a range of materials and tools and teach children to use them with care and precision.	Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue.	Explore a variety of artistic effects to express their feelings	<p>Provide opportunities to work together to develop and realise creative ideas.</p> <p>Provide children with a range of materials for children to construct with. Encourage them to think about and discuss what they want to make. Discuss problems and how they might be solved as they arise. Reflect with children on how they have achieved their aims.</p> <p>Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue.</p>	Encourage children to notice features in the natural world. Help them to define colours, shapes, texture and smells in their own words. Discuss children's responses to what they see.	Create collaboratively sharing ideas, resources and skills.
	Return to and build on their previous learning, refining ideas and developing their ability to represent them. (Continuous throughout year)					

Year One	Autumn Term	Spring Term	Summer Term
	<p>How can we make our photo frames stable? Plan Bee</p> <ul style="list-style-type: none"> -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. -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 	<p>How can we make a picture move? Plan Bee</p> <ul style="list-style-type: none"> -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 -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 -Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 	<p>Which fruit make the best fruit kebabs? Plan Bee</p> <ul style="list-style-type: none"> -Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from -Begin to understand that all food comes from plants or animals. -Understand that everyone should eat at least five portions of fruit and vegetables every day. -Know how to prepare simple dishes safely and hygienically, without using a heat source. -Know how to use techniques such as cutting, peeling and grating.

Year Two	Autumn Term	Spring Term	Summer Term
	<p>How do wheels and axles make a vehicle move smoothly? Plan Bee</p> <ul style="list-style-type: none"> -Design purposeful, functional, appealing products for themselves and others 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. -Explore and use mechanisms (for example levers, sliders, wheels and axles) in their products. 	<p>How can we join fabric together? Plan Bee</p> <ul style="list-style-type: none"> -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. 	<p>What makes a healthy snack? Twinkl</p> <ul style="list-style-type: none"> -Explore and evaluate a range of existing products -To understand where foods comes from. Explore a range of existing products. -Use the basic principles of a healthy and varied diet to prepare vegetables. -Design purposeful, functional, appealing products for themselves and other users based on design criteria -Generate, develop, model and communicate their ideas through talking and drawings. -Evaluate their ideas and products against design criteria.

Year Three	Autumn Term	Spring Term	Summer Term
	<p>How are Christmas stockings made? Plan Bee</p> <ul style="list-style-type: none"> -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 	<p>What levers and linkages would make the best mechanical poster? Twinkl</p> <ul style="list-style-type: none"> -Investigate and analyse a range of existing products -Understand and use mechanical systems in their products (for example levers and linkages) -Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at individuals or groups -Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes -Select from and use a wider range of tools and equipment to perform practical tasks 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 their ideas and products against their own design criteria and consider the views of others to improve their work 	<p>How do you make a healthy lunch? Plan Bee</p> <ul style="list-style-type: none"> -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 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 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

Year Four	Autumn Term	Spring Term	Summer Term
	<p>What materials would be used to build a mini greenhouse?</p> <ul style="list-style-type: none"> -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 -Apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	<p>Can you make an alarm system to guard a treasure?</p> <p>Design:generate, develop, model and communicate their ideas through discussion, annotated sketches</p> <p>Make:select from and use a wider range of tools and equipment to perform practical tasks[for example, cutting, shaping, joining and finishing], accurately</p> <p>Evaluate:evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Technical understanding:understand and use electrical systems in their products [for example, series circuits</p> <p>incorporating switches, bulbs, buzzers and motors]</p> <p>apply their understanding of computing to program, monitor and control their products.</p>	<p>Can you plan and make a Mexican dish?</p> <p>Understand and apply the principles of a healthy and varied diet</p> <ul style="list-style-type: none"> -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

Year Five	Autumn Term	Spring Term	Summer Term
	<p>Can I create a model that has an electronic system incorporated? Plan Bee</p> <ul style="list-style-type: none"> -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 -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 -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 	<p>Can you alter the ingredients for a recipe? Plan Bee</p> <ul style="list-style-type: none"> -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 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 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 	<p>How many different ways can I stitch fabric together? Twinkl</p> <ul style="list-style-type: none"> -To 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 -To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams and pattern pieces -To select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities -To evaluate their ideas and products against their own design criteria

Year Six	Autumn Term	Spring Term	Summer Term
	<p>Can burgers be a healthy option? Plan Bee</p> <ul style="list-style-type: none"> -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 -Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work -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 	<p>How long can we keep a marble running? How can we move a marble upwards? Twinkl</p> <ul style="list-style-type: none"> -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 -Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	