	Designing
	Evaluating
	Technical Knowledge
	Cooking and Nutrition

DT Summer MTP 2021-2022

EYFS		**Theme**	**Key Concepts**	
	Unit of work: Bug Hotel	**Bears and beasts**	**Designing** **Technical knowledge** **Evaluating**	
	Key Content	I can represent and communicate my ideas through design		
		I can safely use tools and materials		
		I can choose materials which would be good to make things with		
		I can say what I like or don't like about what I have made		
	Second order concepts	**Responsibility:** I can work responsibly and safely		
		Written and oral expression: I can use terminology, evaluating, creating accurate designs, labelling and annotating, explaining processes, presenting		

YEAR 1	**Summer 1**	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**	**5 Key Questions**
	Unit of work: Castles	**Designing** **Technical knowledge** **Evaluating**	To explain their ideas to others and their reasons for their ideas. To construct and building from simple objects Can discuss what they have created and why.	To develop and communicate ideas by talking and drawing. .Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. About the movement of simple mechanisms such as levers, sliders, wheels and axles Suggest how their products could be improved.	 Name some different features of a castle  Explain how a hinge works  What materials are suitable to create a stable castle structure?  Define mechanism How are castles different to a house?
	Suggested lessons	**Lesson 1:** Children are introduced to different features of a castle	**Lesson 2:** Children explore hinge mechanism. How do they work? What materials are needed? Children create basic hinge mechanisms	**Lesson 3:** Children design their own castles based on a design brief. They draw and label their designs and consider what materials are appropriate for the task. They produce 2 designs but choose one, providing a reason for their choice	**Lesson 4:** Children make their castle based on their design. Children decorate their castles.	**Lesson 5:** Children evaluate their final product. What worked well, what could be improved?

	Key Content	I am beginning to design products using pictures and words based on a design criteria. I can evaluate my designs and products by saying how well they do the job they were designed for. I can explore and use simple mechanisms in my products.					
	Second order concepts	Make: I can choose appropriate resources and tools to make a product. Make: I can use a range of materials to make a product, including construction materials, textiles and ingredients. **Cause and consequence:** I can identify how things work and how an action can cause change/movement **Written and oral expression:** I can use terminology, evaluating, creating accurate designs, labelling and annotating, explaining processes, presenting					
	Summer 2	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**		**5 Key Questions**	
	Unit of work: Cooking and nutrition	**Designing** **Evaluating** **Cooking and nutrition**	To name food and discuss what is healthy and what is not healthy. Generating ideas drawing on their own experiences or experiences of others.	Use knowledge of existing products to help come up with ideas. Follows procedures for safety and hygiene. Suggest how their products could be improved. Suggest how their products could be improved. How to prepare simple dishes safely and hygienically, without using a heat source. How to use techniques such as cutting, peeling and grating.		 What is an ingredient?  What skills are used when making a sandwich  How can you keep safe when making a sandwich  Define hygiene Discuss similarities and differences between different sandiwhces	
	Suggested lessons	**Lesson 1:** Children explore a range of sandwiches from around the world. Discuss different ingredients used in them. What do they like/ dislike	**Lesson 2:** Children taste a variety of different fillings that are used in sandwiches. Children evaluate these fillings	**Lesson 3:** Children practise their chopping and spreading skills using a variety of ingredients.	**Lesson 4:** Children design their sandwich. They consider the different ingredients for their sandwich and think about their choices. They produce two designs and select one, providing reasons for their choices.	**Lesson 5:** Children make their sandwiches using the chopping and spreading skills previously practised. They then enjoy their sandwiches at a picnic.	**Lesson 6:** Children evaluate their sandwiches. What did they like about the fillings that they chose. What would they do to improve their sandwich next time.
	Key Content	I am beginning to design products using pictures and words based on a design criteria. I can use a range of materials to make a product, including construction materials, textiles and ingredients. I am beginning to explore and evaluate a range of existing products by evaluating the product against the purpose I can tell you where my food comes from					

	Second order concepts	**Responsibility:** I can work responsibly and safely				
		Similarity and difference: I can make comparisons, note differences and draw conclusions				
		Written and oral expression: I can use terminology, create and annotate designs and explain processes				
YEAR 2	**Summer 1**	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**		**5 Key Questions**
	Unit of work: Structures	**Designing** **Technical knowledge** **Making** **Evaluating**	Develop and communicate ideas by talking and drawing. Select from a range of tools and equipment, explaining their choices. Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. Can discuss what they have created and why.	Make simple judgements about their products and ideas against a given design criteria. Measure, mark out, cut and shape materials and components. Assemble, join and combine materials and components. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Use simple design criteria to help develop their ideas		 What is a kite?  Describe the materials and equipment needed to make a kite  Why do some kites fly better than others?  Define instructions How does a kite work?
	Suggested lessons	**<u>Lesson 1:</u>** Children will explore different types of kites and why people make them Children will use colours, shapes and	**<u>Lesson 2:</u>** Children will explore materials that could be used to make different kites. They will carry out tests to see which materials are more suitable for	**<u>Lesson 3:</u>** Children will explore one of the easiest kites to make, a diamond kite. Children will look at images of different diamond kites and describe the colours and	**<u>Lesson 4:</u>** Children will use a range of materials to follow their plan and make a diamond kite. Children will follow instructions and solve problems to make a successful diamond kite.		**<u>Lesson 5:</u>** Children will evaluate the kite-making process with a partner and using written methods. They will answer questions to explain their successes and failures during the kite-making process.

		patterns to decorate a kite template.	kite making. Children will make observations and write notes about the tests they do.	features they have. They will design their own diamond kite on provided templates		
	Key Content	I use simple drawings and labels to record my ideas I use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the materials have been selected. I can select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] I can build structures, exploring how they can be made stronger, stiffer and more stable. I can evaluate my ideas and products against set design criteria.				
	Second order concepts	**Written and oral expression**: I can use terminology, create and annotate designs and explain processes **Cause and consequence:** I can identify how things work, how an action can cause change/movement **Significance:** I can identify significant designers and designs, real world examples of effective and successful products				
	Summer 2	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**		**5 Key Questions**
	Unit of work: Cooking and nutrition	**Designing** **Evaluating** **Cooking and nutrition**	To name food and discuss what is healthy and what is not healthy. Can discuss what they have created and why Begin to explain their ideas to others and their reasons for their ideas.	How to prepare simple dishes safely and hygienically, without using a heat source. How to use techniques such as cutting, peeling and grating. Use simple design criteria to help develop their ideas That food ingredients should be combined according to their sensory characteristics		 What ingredients might you use in a fruit salad?  What tools would you need to prepare a fruit salad?  What skills did you use when making your fruit salad? Define balanced diet  How can you work responsibly and safely when making a fruit salad?
	Suggested lessons	**<u>Lesson 1:</u>** Children to discuss and make lists of as many fruits as they can. They will pick their favourite and then find out the most popular in class, presenting	**<u>Lesson 2:</u>** Children to look closely at a variety of different fruits. They will use their senses to describe the different features of the fruits and vegetables as well as their sense of taste.	**<u>Lesson 3:</u>** Children to discuss and think about food preparation. They will be practising using different tools safely, and using the appropriate language associated with food preparation.	**<u>Lesson 4:</u>** Children design their own fruit salads. They consider what ingredients they will use and how they can make them healthy.	**<u>Lesson 5:</u>** Children will create their fruit salad based on their design. They will think about their safety and hygiene when	**<u>Lesson 6:</u>** Children evaluate their finished fruit salad. They consider what worked well, what could they improve next time.

		this data in a pictogram.	The children will also discuss safety and hygiene in relation to food.			creating their products.	
	Key Content	I use simple drawings and labels to record my ideas I use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the materials have been selected. I can evaluate my ideas and products against set design criteria. I can use a range of ingredients to prepare a healthy dish					
	Second order concepts	**Responsibility**: I can work responsibly and safely Similarity and difference: I can make comparisons, note differences and draw conclusions **Written and oral expression**: I can use terminology, create and annotate designs and explain processes					
YEAR 3	**Summer 1**	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**		**5 Key Questions**	
	Unit of work: Textiles Pencil cases	**Designing** **Technical knowledge** **Making** **Evaluating**	Describe what their products are for and say how their products will work. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Assemble, join and combine materials and components. Suggest how their products could be improved.	Give a description of the purpose of their products, indicating the design features and appeal to intended users. Explain their choice of tools and equipment in relation to the skills and techniques they will be. Produce appropriate lists of tools, equipment and materials that they need. Measure, mark out, cut and shape materials and components with some accuracy. Use their design criteria to evaluate their completed products. Consider the views of others, including intended users, to improve their work.		 What are the features of a pencil case?   Name some different types of stitches you have learned about  Describe different ways you can add embellishments to fabric Define fastening Describe similarities and differences of your pencil case and another one that you have looked at
	Suggested lessons	**<u>Lesson 1:</u>** Children will study and describe a variety of pencil cases, identifying their fastenings	**<u>Lesson 2:</u>** Children will learn how zips, buttons, poppers and toggles may be used to fasten pencil cases. They	**<u>Lesson 3:</u>** Children will draw and annotate a design for a pencil case, taking into consideration some given limitations, and	**<u>Lesson 4:</u>** Referring to previously created designs, children will make and decorate their pencil case	**<u>Lesson 5:</u>** Children evaluate their pencil cases	

		and how materials have been joined. Children will learn about a variety of hand-sewing stitches, then either practise joining pieces of scrap material using different hand-sewing stitches, or practise stitches using a template.	may then either practise sewing buttons and button holes, or sewing and attaching toggles and loops.	thinking about how it may be decorated.		
	Key Content	I can research similar products to develop my own design ideas. I can choose a material for both its suitability and its appearance and explain why it has been selected.				
	Second order concepts	I can prove that my design meets some set criteria and evaluate how well it works. Similarity and difference: I can make comparisons, note differences and draw conclusions **Written and oral expression**: I can use terminology, create and annotate designs and explain processes **Significance:** I can identify significant designers and designs, real world examples of effective and successful products				
	Summer 2	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**	**5 Key Questions**	
	Unit of work: Cooking and nutrition	**Designing** **Evaluating** **Cooking and nutrition**	Use simple design criteria to help develop their ideas Suggest how their products could be improved. How to prepare simple dishes safely and hygienically, without using a heat source. How to use techniques such as cutting, peeling and grating.	Share and clarify ideas through discussion. Make design decisions that take account of the availability of resources. Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, and mechanical components. How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Use their design criteria to evaluate their completed products.	 What is the difference between fruits and vegetables?  What does the term balanced diet mean?  Describe why some fruits and vegetables are not available in the UK all year round. Define seasonal How can you work responsibly when preparing a smoothie?	

	Suggested lessons	**Lesson 1:** Children discuss different fruits and vegetables. How do we know the difference between them? Children will learn about a variety of fruit and vegetables grown in the UK, when they are in season and why they are important in a healthy diet. They then create a seasonal collage.	**Lesson 2:** Children discuss smoothies. What is a smoothie, why do people drink them? What are popular flavours of smoothie? They will research a range of different smoothie recipes discussing ones they like and dislike.	**Lesson 3:** Children will sample different fruits and vegetables that may be used as ingredients within their smoothies. They describe their appearance, taste, texture and smell. They consider which ingredients they would like to include in their smoothie. Discuss the importance of hygiene when handling and tasting fruit and vegetables.	**Lesson 4:** Children design their smoothie. Following the previous lesson they consider which ingredients they will include and why they are including those particular ingredients.	**Lesson 5:** Children prepare their smoothies based on their designs. They will discuss hygiene and why this is important when handling ingredients.	**Lesson 6:** Children evaluate their finished smoothies. Did the smoothie meet the design criteria? Did the selection of ingredients work well together? Would they have change or adapt their recipe next time?
	Key Content	I can research similar products to develop my own design ideas. I can prove that my design meets some set criteria and evaluate how well it works. I can think ahead about the order of my work, select tools needed for a given task and give reasons for my choices. I can make healthy eating choices from an understanding of a balanced diet I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading or kneading					
	Second order concepts	**Responsibility:** I can work safely, solve design problems, choose the right materials, responsibilities to customers to ensure quality / reliable products, healthy eating, quality ingredients) **Similarity and difference:** I can make comparisons, note differences and draw conclusions **Written and oral expression:** I can Use terminology, evaluate, create accurate designs, label and annotate explain processes					

YEAR 4	Summer 1	Key Concepts	Prior Learning	At the end of this unit of work Children will know:	5 Key Questions
	Unit of work: Mechanical systems	**Designing** **Making** **Technical knowledge** **Evaluating**	Explain how particular parts of their products work. Share and clarify ideas through discussion. Select tools and equipment suitable for the task.	Model their ideas using prototypes and pattern pieces. Assemble, join and combine materials and components with some accuracy. How to make strong, stiff shell structures. That mechanical and electrical systems have an input, process and output. Refer to their design criteria as they design and make.	 What is a slingshot car?  What materials are suitable when making a slingshot car?  How can the shape of a car affect the speed that it travels?  Define chassis

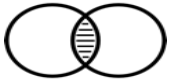
			Measure, mark out, cut and shape materials and components with some accuracy. Use their design criteria to evaluate their completed products.			Describe how a launch mechanism works
	Suggested lessons	**Lesson 1:** Using a range of materials, children follow instructions to make the chassis of their car and the slingshot launch mechanism, learning that their slingshot cars work by storing kinetic energy in the elastic band before it launches	**Lesson 2:** Understanding that the shape of a car body can either increase or decrease the speed it travels, children design car bodies to cover their chassis from Lesson 1	**Lesson 3:** Children make the nets for their car bodies based on their designs, adding the graphics and tabs that will attach to the chassis	**Lesson 4:** After attaching the nets that they made in Lesson 3, children carry out time trials and other competitions to test and compare their cars	**Lesson 5:** Children evaluate their products.
	Key Content	I generate and develop ideas using exploded diagrams and prototypes.				
		I can choose suitable materials from a wider range and explain its suitability.				
		I am able to understand and use mechanical systems in my products.				
		I can evaluate and suggest improvements for my design.				
	Second order concepts	**Written and oral expression:** I can Use terminology, evaluate, create accurate designs, label and annotate explain processes				
		Cause and consequence: I can identify how things work, how an action can cause change/movement				
		Significance: I can identify significant designers and designs, real world examples of effective and successful products				
	Summer 2	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**		**5 Key Questions**

	Unit of work: Cooking and nutrition	**Designing Evaluating Cooking and nutrition**	Use knowledge of existing products to help come up with ideas. Develop and communicate ideas by talking and drawing. Suggest how their products could be improved. How to prepare simple dishes safely and hygienically, without using a heat source. How to use techniques such as cutting, peeling and grating.	Develop their own design criteria and use these to inform their ideas. Refer to their design criteria as they design and make. Use their design criteria to evaluate their completed products. How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.		 Name some different types of bread  What are the main ingredients used in bread?  Describe the different techniques used in bread making  Define kneading How can you work responsibly when preparing bread?
	Suggested lessons	**Lesson 1:** Children will learn about different types of bread and the cultures and or regions from which they originate. They will then taste and describe a variety of breads.	**Lesson 2:** Children will learn about the ingredients of bread and how they may be used. Children then practise mixing ingredients together and practise their kneading technique following a simple recipe.	**Lesson 3:** Children will then create their own bread recipes and develop ideas about the ingredients they will include and how their bread will be turned out. They will provide reasons for their choices	**Lesson 4:** Children make their bread based on their recipes.	**Lesson 5:** Children will taste and evaluate their own bread recipes. They will suggest ways in which their recipe may be improved.
	Key Content	I use different ways to creatively record and present my designs to show they are fit for purpose. I can evaluate and suggest improvements for my design. I can use a range of ingredients to prepare a healthy dish, explain why the ingredients were chosen and the effects on the body I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading or kneading				
	Second order concepts	**Responsibility:** I can work safely, solve design problems, choose the right materials, responsibilities to customers to ensure quality / reliable products, healthy eating, quality ingredients) **Similarity and difference:** I can make comparisons, note differences and draw conclusions **Written and oral expression:** I can Use terminology, evaluate, create accurate designs, label and annotate explain processes				

YEAR 5	Summer 1	Key Concepts	Prior Learning	At the end of this unit of work Children will know:		5 Key Questions
	Unit of work: Electrical systems	**Designing** **Technical knowledge** **Making** **Evaluating**	Explain how particular parts of their products work. Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Assemble, join and combine materials and components with some accuracy. Use their design criteria to evaluate their completed products.	Identify the needs, wants, preferences and values of particular individuals and groups Generate innovative ideas, drawing on research. Select from a range of tools and equipment, explaining their choices. Accurately assemble, join and combine materials and components. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make.		 What is the purpose of a steady hand game?  What type of circuit have you used in your product?  Describe the different elements of a steady hand game  Define function How does a circuit work?
	Suggested lessons	**<u>Lesson 1:</u>** Children explore what is meant by for purpose in design and apply this to their own research on children's toys to evaluate their form and function	**<u>Lesson 2:</u>** Children identify the components of a steady hand game, looking at the circuit in more detail. Children then focus their attention on the wire element of the game. They practise bending and shaping wired into a shape.	**<u>Lesson 3:</u>** Children design their moving hand game. They consider the design of the base and the shape of the wire that they will create. They think closely about the function and purpose of their game.	**<u>Lesson 4:</u>** Children begin making their steady hand game	**<u>Lesson 5:</u>** Children evaluate their finished product. Does their product meet the design criteria. What could be improved next time? Peers within the class can also evaluate their finished product
	Key Content	I can generate and develop ideas using pattern pieces and computer aided design. I use a range of appropriate tools competently.				

		I can understand and use electrical systems in my products. I can evaluate appearance and function against original criteria. I am able to justify decisions made during the design process.				
	Second order concepts	**Cause and consequence:** I can identify how things work, how an action can cause change/movement **Similarity and difference:** I can make comparisons, note differences and draw conclusions **Significance:** I can identify significant designers and designs, real world examples of effective and successful products				
	Summer 2	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**		**5 Key Questions**
	Unit of work: Cooking and nutrition	**Designing** **Evaluating** **Cooking and nutrition**	Develop their own design criteria and use these to inform their ideas. How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Identify the strengths and areas for development in their ideas and products.	Develop a simple design specification to guide their thinking. Make design decisions, taking account of constraints such as time, resources and cost. That recipes can be adapted to change the appearance, taste, texture and aroma. Evaluate their ideas and products against their original design specification.		 What is the method in a recipe?  What basic ingredients are used in a biscuit recipe?  Describe how you adapted your biscuit recipe Define quantity How can you ensure you are responsible when preparing biscuits?
	Suggested lessons	**Lesson 1:** Children sample and evaluate a range of different biscuits, thinking	**Lesson 2:** Children follow a recipe and bake a sample recipe, practising the skills	**Lesson 3:** . Children follow the same recipe used in the last lesson however	**Lesson 4:** . Children design their own biscuits. They will consider what ingredients they will use and how they are going to	**Lesson 5:** Children create their biscuits based on their designs	**Lesson 6:** Children evaluate their finished biscuits. What do they like? What would they improve?

		about the appearance, taste, texture and smell. They also consider the different ingredients used.	needed to prepare biscuits.	adapt it by adding in another ingredient.	adapt the recipe they have used previously		Could they do anything further to adapt the recipe?
		I can generate and develop ideas using pattern pieces and computer aided design.					
	Key Content	I use a range of appropriate tools competently.					
		I can evaluate appearance and function against original criteria.					
		I am able to justify decisions made during the design process.					
		I can measure out ingredients accurately and use ratios to scale up or scale down a recipe					
		I understand the importance of correct storage and handling of ingredients					
	Second order concepts	**Responsibility:** I can work safely, solve design problems, choose the right materials, responsibilities to customers to ensure quality / reliable products, healthy eating, quality ingredients)					
		Similarity and difference: I can make comparisons, note differences and draw conclusions					
		Written and oral expression: I can Use terminology, evaluate, create accurate designs, label and annotate explain processes					

	Summer 1	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**	**5 Key Questions**
	Unit of work 3D modelling CCL Computing	**Designing Technical knowledge Evaluating**	Model their ideas using prototypes and pattern pieces. Use computer-aided design to develop and communicate their ideas. Assemble, join and combine materials and components with some accuracy. Refer to their design criteria as they design and make. Use their design criteria to evaluate their completed products.	Develop a simple design specification to guide their thinking. Communicate their ideas using computer-aided design to develop and communicate their ideas. Accurately measure, mark out, cut and shape materials and components. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Evaluate their ideas and products against their original design specification.	 What are the similarities and differences between working digitally with 3D and 3D graphics?  2D/ 3D  Explain what the following symbols do on TinkerCad. How could you develop your skills further on TinkerCad?   Discuss the similarities and differences of working digitally with 2D and 3D graphics

YEAR 6	**Suggested lessons**	**<u>Lesson 1:</u>** This lesson introduces learners to the concept of 3D modelling by creating a range of 3D shapes that they select and move. They also examine the shapes from a variety of views within the 3D space.	**<u>Lesson 2:</u>** This lesson examines the similarities and differences between working digitally with 2D and 3D graphics. Learners initially discuss the similarities and differences they have identified so far, then move on to combine 3D shapes, including lifting the 3D object, to produce a house. Learners then colour their 3D shapes, followed by adding further shapes and undertaking further reflection on the similarities and differences between working digitally with 2D and 3D graphics.	**<u>Lesson 3:</u>** During this lesson, learners will produce a 3D model of a physical object, which will contain a number of different 3D objects. 3D objects will need to be rotated and placed into position in relation to other 3D objects.	**<u>Lesson 4:</u>** During this lesson, learners will produce a 3D model of a pencil holder desk tidy. The 3D model will contain a number of 3D objects that are of specific dimensions and use other 3D objects as placeholders to create holes with them.	**<u>Lesson 5:</u>** During this lesson, learners will resize and enhance their 3D model of a pencil holder desk tidy. Learners will also plan their own 3D model of a photo frame, which will be developed during the next lesson.	**<u>Lesson 6:</u>** During this lesson, learners will produce their own 3D model based on their planning during the previous lesson. They will evaluate their work and make improvements based on feedback from their peers.
	Key Content	I generate and develop ideas using a variety of design techniques.					
		I select and use specialist tools and equipment to perform practical tasks accurately.					
		I am able control and model using an ICT control programme.					
		I can critically evaluate the quality of the design, manufacture and fitness for purpose by comparing existing products					
		I can evaluate my ideas and products against my own design criteria and consider the views of others to improve my work.					
	Second order concepts	**Cause and consequence:** I can identify how things work, how an action can cause change/movement					
		Significance: I can identify significant designers and designs, real world examples of effective and successful products					
		Written and oral expression: I can Use terminology, evaluate, create accurate designs, label and annotate explain processes					
	Summer 2	**Key Concepts**	**Prior Learning**	**At the end of this unit of work Children will know:**		**5 Key Questions**	

	Unit of work: Electrical systems	**Designing** **Technical knowledge** **Evaluating**	Develop their own design criteria and use these to inform their ideas. Assemble, join and combine materials and components with some accuracy. Identify the strengths and areas for development in their ideas and products. How simple electrical circuits and components can be used to create functional products.	Make design decisions, taking account of constraints such as time, resources and cost. Accurately measure, mark out, cut and shape materials and components. Accurately assemble, join and combine materials and components. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make. How more complex electrical circuits and components can be used to create functional products.		 List some different types of alarms  What are the main uses of alarm systems?  What is the function of a switch?  Define component Describe how to be safe when using electricity
	Suggested lessons	**<u>Lesson 1:</u>** Children will look at a variety of alarm systems and consider their uses. They may then either discuss and agree upon appropriate alarms for a range of scenarios, or answer questions about a variety of alarm systems.	**<u>Lesson 2:</u>** Children will consider ways in which different switches may be used to control an electrical circuit. They may then either investigate creating working circuits with a variety of switches, or try to create circuits according to given diagrams.	**<u>Lesson 3:</u>** Children will draw and annotate an alarm system design for an air raid shelter	**<u>Lesson 4:</u>** Referring to previously created designs, children will make model alarm systems for an air raid shelter	**<u>Lesson 5:</u>** Children will evaluate their own design process and finished product according to a number of given, and agreed upon, criteria. They may either do this individually or in small groups

	Key Content	I use research and develop design criteria to design innovative functional and appealing products aimed at a specific group.
		I can select from and use a wider range of materials and components according to their functional qualities and aesthetic qualities.
		I can evaluate my ideas and products against my own design criteria and consider the views of others to improve my work.
		I can critically evaluate the quality of the design, manufacture and fitness for purpose by comparing existing products
	Second order concepts	**Cause and consequence:** I can identify how things work, how an action can cause change/movement
		Significance: I can identify significant designers and designs, real world examples of effective and successful products
		Written and oral expression: I can Use terminology, evaluate, create accurate designs, label and annotate explain processes