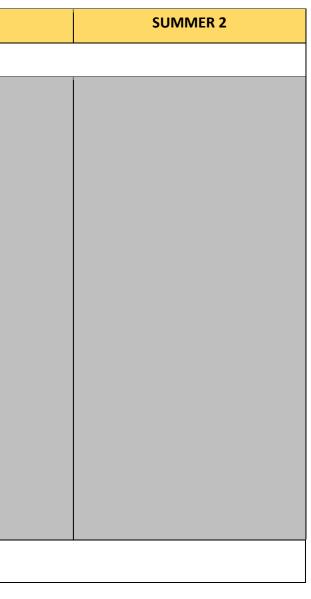
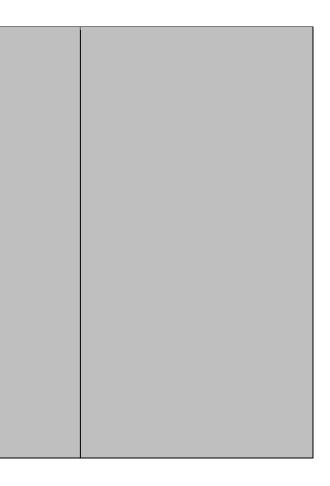
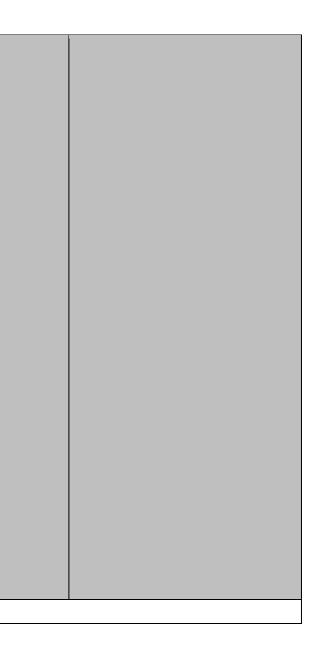
	Design and Technology Long Term Plan					
AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1		
		YE	AR 1/2 Cycle A			
	 Mechanical Components Designing To use their knowledge of a wheel, chassis and axle to design a vehicle to carry a toy. Making To know how objects move by experimenting with construction kits. To know how to make an effective chassis with wheels using an axle with cotton reels and dowels. Evaluating To know and explain why a wheel and axle wobbles based on hole position. To be able to evaluate why their vehicle moves. To be able to make comparisons between their vehicle and another. To know the purpose of a wheel. To know the difference between fixed and freely moving axles. To know what a wheel, chassis and axle is. 		 Food and Nutrition To know that food comes from plants and animals. To know which familiar foods come from plants and which come from animals. To know that it is healthy for people to eat at least five portions of fruit and vegetables every day. To know what texture means. To be able to describe the texture and taste of food when eating it. To use knowledge of colour, texture and taste to sort fruits and vegetables. To know which types of food make a healthy meal. To know that hands and utensils need to be washed before cooking. To know how to hold fruit and vegetables so that they can be cut safely with a knife. To know how to mix with a spoon. 			
			YEAR 1/2			
			Cycle B			



 ✓ Design ✓ Design ✓ To know that Sir Christopher Wren was an architect who designed buildings. ✓ To use knowledge of construction and joining materials to select the most suitable to design a model house. ✓ To know that a mock-up is used by designers and architects to 	 ✓ Design ✓ [To know that a mock-up is used by designers to test how well a design will work.] ✓ To use appropriate vocabulary when planning and designing a textile product. ✓ Making ✓ To know the purpose of a template and how to draw around it on a textile.
 test how well a design will work. Making To use knowledge of 3D shapes to build simple freestanding structures. To use knowledge of 2D shapes and simple nets to build free- standing structures using Polydron. To know how to use scissors to cut card and paper accurately and safely. 	 To know how to use pins to secure material and templates. To know how to use scissors to cut templates and fabric accurately and safely. Evaluating To use their knowledge of joining materials and aesthetic qualities to evaluate their product. To use their knowledge of different materials to evaluate which are best to print on.



	YEAR 3/4 Cycle A
	 To know how to use a knife safely to peel fruit and vegetables and to discard pips/ seeds. To know how to use a grater safely. To know how to use a measuring spoon to measure quantities. To know the steps to take to make sure that food is prepared hygienically.
 templates to create a net. To know how to use a straight edge to mark lines for cutting. Evaluating To evaluate their model using knowledge of stability, effectiveness of construction and joining materials and finishing techniques. 	
 To use knowledge of materials to explain how easy or difficult they are to cut. To use knowledge of joining materials to select the most 	 ✓ Technical Knowledge ✓ To know what a textile is. ✓ To know the purpose of a lining and which materials and ioining can be used



Construction	Elect
Designing	Desig

- ✓ To use research and previous learning to inform designs for a free-standing structure.
- To know that Ludwig Mies Van Der Rohe was an architect and furniture designer who created simple, but stable frames for furniture.
- To use knowledge of structures, buttresses, joins and materials to design a freestanding replica of an iron age house.
- Apply DT knowledge to add labels and instructions to their work.

Making

- To know how to create a mock-up to test a structure support.
- ✓ To use knowledge of structures, buttresses, joins and materials to create a

Electrical Components Design

- ✓ To know how some key
 designs of engineers in design and technology have helped shape the world.
- To use scientific knowledge of circuits to design a motorised product including a labelled diagram and instructions.
- To know how safety features need to be considered in the design of electrical products.
- To know that advancements in technology influence design over time. Making
- ✓ To use scientific knowledge to make simple electrical systems.
- To use scientific knowledge of circuits to design a working model mining helmet

Mechanical Comp

- DesigningTo know that William
- Armstrong was an eng who designed the mo crane.
- To be able to identify differences and simila
 Egyptian Shadufs and designs that use puller levers.
- To use research and h knowledge to inform for a Shaduf, including sketches and instructi Making
- To know how to adaption
 and a pulley based on weight.
- To know that varying position of the fulcrun how a lever lifts a load
- To know the difference between a lever and a and how they are use create movement.
- To know how levers a pulleys can be adapte weight.
 Evaluating

ponents gineer odern-day arities in modern eys and historical designs g labelled ions. ot a lever h load the m affects d. ce a pulley ed to		can affect the taste, appearance, texture and colour of bread. To understand the need for covering dough to maintain hygiene during benching and proofing. To know how to effectively disinfect surfaces. To know how to knead and why a floured surface is required. To know how to weigh dry ingredients using scales. To know how to use a measuring jug. To know how the bread recipe can be altered by adding
ce a pulley	~	To know how the bread recipe

 freestanding replica of an iron age house. To know when it is appropriate to use hidden joins in a structure. Y To know when it is appropriate to use scoring in a structure. Evaluating To use knowledge of supporting structures to evaluate their mock-ups. To use knowledge of properties of materials to evaluate their suitability for a buttress. To know how to evaluate if a design meets needs or requires altering. To use their knowledge of structure to evaluate how effective their replica is in supporting weight. Technical Knowledge To know how to create a hidden join. To know how to score using scissors. 	s differences and similarities in Egyptian Shadufs and their own design. To use their knowledge of pulleys, levers, wheel movement and fulcrum to evaluate how well their design lifts varying loads. To know how to improve efficiency of their product. Technical Knowledge To know what a puleys and levers are used to lift, move and carry. To know what a fulcrum is. ss
YEAF	R 3/4 Cycle B

<u>xtiles</u>
signing
know that Ozwald B
British designer wh
igns tailored clothin
-
use their knowledge
ck stitch and running
annotate sketches to
ferences in techniqu
know how to apply
owledge of techniqu
sign brief.
use knowledge of se
hniques to create
notated sketches for
sign brief.
know what a mock
d create one.]
know how to creat
ototype] and apply t
ating prototypes for
ats and gathers.
-

		Construction
		Designing
Boateng	✓	To use knowledge of
ho mainly		reinforcing techniques to
ng.		annotate sketches for a frame
ge of		structure.
ng stitch	✓	To know what diagonal braces
to record		and butt joints are and use this
ue.		knowledge to create protypes.
y	✓	[To know how to apply
ues to a		knowledge of techniques to a
		design brief.]
sewing		Making
	✓	To use a saw to cut wood
or a		safely.
	✓	To measure wood accurately.
k up is	✓	To know how to, and explain,
		how a frame can be made
ite a		stable and supported.
this to		Evaluating
or knife	✓	[To use subject specific
		language to compare and

 To use subject specific language to compare and contrast their design with their peers. Technical Knowledge To know that a shell structure has a solid outer layer which is flat or curved and it is hollow on the inside. To know where flaps can be drawn onto nets to join them to create a shell structure. To know how to use CAD to model and explain ideas. To know how to strengthen a structure using corrugating, laminating and ribbing. 			 Making To know how fabric can be cut in different ways to prevent fraying and to create different aesthetic results. To know how to create a prototype and apply these to hems. To apply mathematical knowledge of measurement ratios to create a template that is to scale. [To know how to use pins to join materials before stitching.] Evaluating To use knowledge of back stitch, catch stitch and running stitch to identify strengths and limitations of these as joining techniques. To use subject specific language to compare and contrast their design with their peers. Technical Knowledge To know how to thread a needle. To sew using back stitch, running stitch and catch stitch. To know that a hem should be hidden. To know different ways of folding material (e.g., knife pleat and gathers). 	 contrast their design with their peers.] Technical Knowledge To know how a frame can be supported and made stable. To know which materials are suitable for reinforcing corners of wood. To know how to strengthen a frame using gussets and diagonal braces.
	YEAR 5	/6 Cycle A		
		Mechanical Components Design ✓ To know that James Dyson is a designer and engineer who designs household products. ✓ To know how to use a survey to research intended users' wants and needs to inform the design process. ✓ To know how exploded diagrams can demonstrate the separate parts of a design and how they fit together. ✓ To know how prototypes can be used to test mechanical components in an initial design. Making ✓ ✓ To know that changing the length of rope on a fixed pulley affects		

 the number of turns of the wheel needed to lift a load. To know how meshing gears at right angles can alter movement. To use knowledge of gears to create a functional product with mechanical components for an intended user. Evaluating To use knowledge of gears to analyse and evaluate mechanical components in everyday objects. To use their knowledge of gears to to evaluate their own and their peers' designs. Technical Knowledge To know that fixed pulleys lift a load using a wheel, axle and rope. To know the mechanical differences between fixed, moveable and compound pulleys. To know that a gear is a rotating part of a machine that creates movement. To know that gear ratio affects the rotational speed and direction of gears in a gear train. To know that caxial gears are gears on the same axle.
YEAR 5/6 Cycle B
Electrical Components Designing To know how to draw diagrams to scale. Evaluating To know that Tim Berners-Lee changed everyday life with the invention of the World Wide Web. To know that developments in D&T have helped shape the world. To use knowledge of electrical systems to evaluate and improve the design and functionality of electrical circuits. Technical Knowledge To know how to use a computer control program to enable an electrical product to work automatically in response to changes in the environment. To apply knowledge of electrical systems to design a circuit within a product for a purpose and intended user.

✓ Food and Nutrition

\checkmark	To know that food is
	grown, reared and
	caught in the UK,
	Europe and the wider
	world. To know that the
	seasons affect food
	availability, and this is
	called seasonality.
\checkmark	To know that Rachel
	Green is a farmer and
	chef focussed on
	seasonality.
\checkmark	To use knowledge of a
	healthy and varied diet
	to plan and evaluate
	meals for different
	lifestyles. To know that
	different varieties of the
	same type of food can
	vary in terms of cost,

