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Design & Technology Curriculum

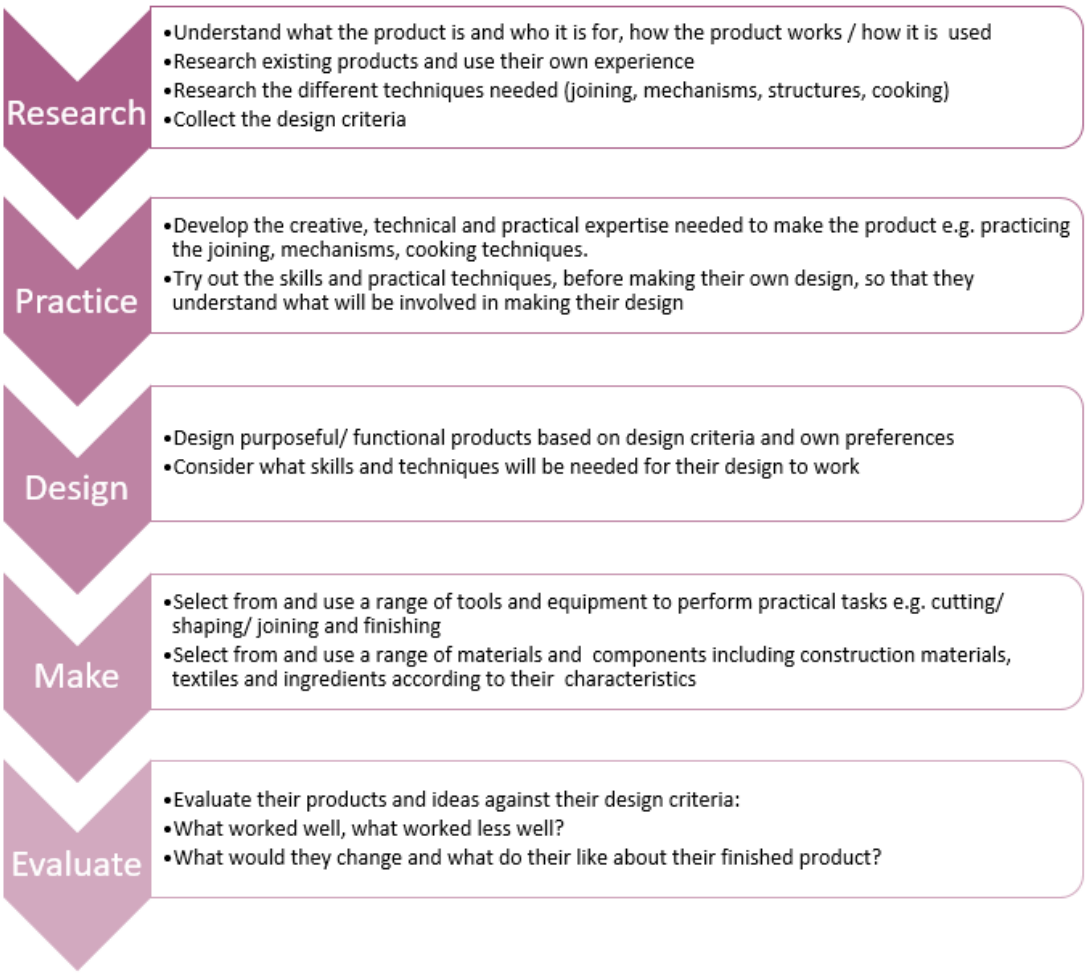
Intent

At Shenley, we aspire to enable the children to become designers, craft makers, digital programmers, engineers and architects, who have an ever-changing effect on our future world. Our Design and Technology curriculum facilitates the use of the creativity and imagination, real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Our aim is to provide children with experiences to develop their skills through this inspiring, rigorous and practical subject.

Design & Technology

Research → practice → design → make → evaluate process

Within most sequences of learning in D&T, the following process will be used:



Whole school topic overview

Textiles Food Structures Mechanisms

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	Textiles: puppets Sewing and joining techniques – running stitch	Structures: Playground Hook: Great Fire of London	Textiles: money containers: running stitch and back stitch	Mechanisms: light up boxes	Structures: chocolate boxes - card and paper	Programming
Spring	Mechanisms: moving animal pictures Levers and sliders – paper and card	Mechanisms: cars Wheels, axles and chassis – wood	Mechanisms: Pop up Books	Textiles: Pouches running stitch, back stitch and over stitch	Food: bread making	Mechanisms: Moving Toys Cams and Leavers
Summer	Food: fruit salad Healthy Eating Cooking techniques - preparing, chopping and mixing	Food: picnic Rainbow omelettes and kebabs	Food: sandwiches	Food: pizza	Textiles: slippers running stitch, back stitch, over stitch and Blanket stitch	Food: World war 2 Rationing

Vocabulary Overview

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
General DT vocabulary			design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join
EYFS	make choose use paper plastic cardboard glue sellotape lego blocks model decorate cut link join	idea design make choose link join paper fabric cardboard plastic glue sellotape lego blocks model decorate stapler hole punch glue stick glue spreader cut stick join						
Year 1				fabric, template, pattern, finish, decorate,	slider, lever, pivot, slot, masking tape, paper fastener	chop, cut, knife, grate, peel, ingredients, fruit and veg names, juicy, crunchy, sweet etc…		
Year 2			parts, construction kits, join, fix framework, movement, structure, weak, strong, on top of, underneath, side, edge, surface,		Wheels, axles and chassis making, joining, combining, connecting, testing, punching, vehicle, wheels, chassis, axles,	Diet, healthy diet, healthy, balanced, slice, blend, smooth, chunky, firm, texture		

			thinner, thicker, corner, point, metal, wood, plastic, shapes, circle, triangle, square, rectangle and 3D shapes e.g. cuboid, cube		doweling, hole punch, logo, distance			
Year 3				Running stitch, overlap stitch, (backstitch) zip, button, clasp, pattern	Model, aesthetics, purpose, strong, sturdy, leavers, pivot, bridge, slot	Carbohydrate, protein, names of different bread types, texture, sweet, savoury, method process, spread, flavours, filling,		
Year 4			Circuit, switch, component, prototype, appealing. Link with science vocab.	Brief, sustainability, reuse, recycle, material, fabric, seam, seam allowance, hidden seam, stitch names: running, backstitch, overlap, pattern. Synthetic, man-made, natural fibres/fabrics		Nutrition, pre-cooked, processed, fresh, , balanced, hygiene, protein		
Year 5				Seam, seam allowance, pattern, reverse, stitch names- running stitch, overlap, back stitch and blanket stitch, prototype, aesthetic	Aesthetics, appealing, 3D nets, exploded diagrams. Client, expensive, luxury, budget, market, font, consumer	Method, recipe, additions, substitutes, nutrition, sweet, savoury, knead, combine		
Year 6					fa Cams, axis, follower, linear motion, rotary motion, 3D structure, motion, movement	Texture, taste, product, hygiene rationing savoury quantity, health and safety, balanced diet, food groups, alternatives	Domestic, input/output, obstacle, end user, industrial, robots, instructions	

Early Years

In Early Years…

Nursery		
Use one-handed tools and equipment, for example, making snips in paper with scissors. Use all their senses in hands on exploration of natural materials. 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. Create collaboratively sharing ideas, resources and skills. Talk about the differences between materials and changes they notice.	Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park (explored in Art curriculum too). Join different materials and explore different textures (explored in Art curriculum too). 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.
Reception		
Explore different materials freely, in order to develop their ideas about how to use them and what to make. 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.	Develop their own ideas and then decide which materials to use to express them. Create collaboratively sharing ideas, resources and skills.	Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park (explored in Art curriculum too). Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Join different materials and explore different textures (explored in Art curriculum too).

Long Term DT curriculum

Year 1			
	Autumn	**Spring**	**Summer**
	Structures: textiles – templates and joining techniques (sewing) Puppets	Mechanisms Levers and Sliders Moving animal pictures	Food Preparing fruit and Vegetables
Knowledge **Key area of focus**	To make a textile puppet by marking out, cutting and joining fabric. To look at a selection of hand puppets and base their design on their investigations into how the puppets have been made and who they have been designed for.	To develop an understanding of simple mechanisms through designing and making moving animal pictures. Develop their understanding of how movement can be created by investigating everyday products making simple levers, pivots and sliders	To prepare simple dishes (fruit salad) hygienically and safely without a heat source. Use cooking techniques (cutting, peeling and grating) to design and make a fruit salad.
DT general vocabulary	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, mix
DT topic vocabulary	fabric, template, pattern, finish, decorate, sew, join	slider, lever, pivot, slot masking tape, paper fastener	chop/cut, knife grate, peel, ingredients fruit and vegetable names, juicy, crunchy, sweet…
Lesson sequence			
Lesson 1	**Research** Enquiry questions *What is it? Who is it for? How is it used*? *Where would you find this?* Look at a selection of hand puppets and talk about how they are made Use knowledge of existing products and experiences to generate their ideas	**Research** Enquiry questions *What is it? Who is it for? How is it used?* *Where would you find this?* Talk about how simple moving products work Explore and evaluate existing products	**Research** Tasting fruit salads Gain an understanding of a range of fruit and vegetables, including taste, texture and appearance Explore and evaluate existing products: discuss the taste and combinations of fruits
Lesson 2	**Practice** To learn basic sewing technique using pre made templates - sewing in a straight line using running stitch	**Practice** To research different techniques and skills, practise and apply - make a slider Use tools safely to make a moving simple slider e.g. hole punch, masking tape, cut, join, paper fastener, cut carefully	**Research** Researching food and where it comes from Understand that food comes from plants or animals

			Understand that food has to be farmed, caught, or grown
Lesson 3	**Design** Design a puppet based on design criteria Plan and test ideas using templates and mock-ups Explain how their idea will look and work through talking and simple labelled drawings	**Practice** To research different techniques and skills, practise and apply - make a lever Use tools safely to make a moving simple lever. e.g. hole punch, masking tape, cut, join, paper fastener, cut carefully	**Practice** With support, follow a recipe: Use basic tools safely to cut/chop, peel and grate ingredients Mix ingredients
Lesson 4	**Make** Measure and mark out Join and combine fabric - running stitch	**Design** Design purposeful/ functional products based on design criteria - moving pictures	**Design** Design purposeful/ functional products based on design criteria - fruit salad Begin to justify their choices as they design their product
Lesson 5	**Make** Measure and mark out Join and combine fabric - running stitch	**Make** Use tools safely to make a moving picture that incorporates a simple lever, pivot or sliders, e.g. hole punch, masking tape, cut, join, paper fastener, cut carefully	**Make** Select from and use a range of ingredients according to their design Use basic tools safely to cut/chop, peel and grate ingredients Prepare simple dishes hygienically and safely without a heat source Mix ingredients
Lesson 6	**Evaluate** To use simple vocabulary associated with textiles to evaluate their puppet, e.g. Is my stitch strong enough? Does it look like a character?	**Evaluate** Make simple judgements about their work, e.g. The lever Is a bit floppy, but I could stiffen it with a lolly stick', 'I am pleased with the way the boat moves but sometimes it gets stuck'. Be able to explain how the lever, pivot or slider works and record this through drawing/labelling.	**Evaluate** Evaluate their products and ideas against their simple design criteria.

Long Term DT curriculum

Year 2			
	Autumn	**Spring**	**Summer**
	Structures: Playgrounds	Mechanisms: cars Explore mechanisms and structures	Food: Preparing fruit and Vegetables
Knowledge **Key area of focus**	To use card and paper and other construction materials to build strengthened models of playground equipment. To explore stiffening materials and making stable structures through the context of free-standing playground equipment.	To introduce the concept of winding mechanisms, building on previous knowledge of wheels and axles. To explore how to make winding mechanisms using construction kits and discuss. To make their own toy using a winding mechanism out of reclaimed materials.	To prepare simple dishes (dip and dippers) hygienically and safely without a heat source. To choose and select appropriate tools and ingredients to make a dip
DT general vocabulary	design, draw, model, plan,	design, purpose, ideas, discuss, explore, predict,	design, idea, discuss, explore, use, choose, mix
DT topic vocabulary	parts, construction kits, join, fix framework, movement, structure, weak, strong, on top of, underneath, side, edge, surface, thinner, thicker, corner, point, metal, wood, plastic, shapes, circle, triangle, square, rectangle and 3D shapes e.g. cuboid, cube	Wheels, axles and chassis making, joining, combining, connecting, testing, punching, vehicle, wheels, chassis, axles, doweling, hole punch, logo, distance	Diet, healthy diet, healthy, balanced, slice, blend, smooth, chunky, firm, texture
Lesson sequence			
Lesson 1	**Research** To evaluate the works of others. Take children to the local park. Investigate what equipment they find. What materials have been used? How have the parts been joined together.	**Research** L I – To evaluate the work of others Look at existing toy cars How do they move? Introduce vocabulary; wheels, axles, chassis	**Research** Tasting shop available dips. Gain an understanding of different dips and how they can be eaten. Why choose these dippers? Does one dip go better with a particular dipper? Explore and evaluate a range of existing dips and what could be dipped into a dip. Where do different dips come from?

Lesson 2	**Research** To evaluate and research the work of others Draw equipment – materials – purpose – features etc	**Practice** To research, practice and apply skills. Carry out activity using sets of wheels and straws. Which wheels are best? Why?	**Research** To taste and explorea range of dippers Why choose these dippers? Does one dip go better with a particular dipper? What is it about the dippers which make them good? Healthy? Firm? Chunky?
Lesson 3	**Practice** To research and apply skills. Carousel of stations. Construct a square frame Lollipop sticks and blue tak	**Practice** To research, practice and apply skills. Choice of wheels, axles to use. Which are best?	**Practise** Look at healthy balanced diet. Why do we need a balanced diet? Compare ingredients Make a simple raita dip.
Lesson 4	**Design** To design my final product. Design slide/seesaw Label materials. How will they join parts together? Can the children name who their product is for? What is my theme? What materials and tools will I use?	**Design** To design my final product. Use design sheet to design car. Use language – wheels, axles, chassis and add materials Can the children give reasons for their choices	**Design** Plan for a party Design a purposeful/ functional products (new dip to share at a party) based on design criteria. Begin to justify their choices.
Lesson 5	**Make** To make my final product Use glue gun and materials identified to make design	**Make** To make my final product. Use cardboard wheels and choice of axle (dowel, skewers, straw etc).	**Make** Select from and use a range of ingredients according to their design Use basic tools safely to cut/chop, peel, slice, grate and blend ingredients Prepare simple dishes hygienically and safely without a heat source Mix ingredients.
Lesson 6	**Evaluate** To evaluate my final product	**Evaluate** To evaluate my final product.	**Evaluate** To evaluate ideas and end product against their simple design criteria

Long Term DT curriculum

Year 3			
	Autumn	**Spring**	**Summer**
	Textiles: Purses	Mechanisms: Pop-Up books	**Food:** Sandwich snacks
Knowledge **Key area of focus**	To develop an understanding of sewing, stitches and fastenings. To be able to design with consumer in mind. To develop their understanding of materials/fabrics. Through discussion and exploration investigate existing products and with a view to develop and design their own product.	To develop an understanding of simple mechanisms through designing and making pop up elements in a simple book. Develop their understanding of how movement can be created by investigating everyday products making simple levers, pivots, rotations and sliders	To know that sandwiches can form part of a healthy diet. To learn basic food preparation techniques and ways of combining components to create simple food products for a particular purpose. Through discussion, they develop criteria for their design proposals and suggest ways to proceed. To develop their making skills by learning to combine components according to taste, appearance or texture to create a product that contributes to a healthy diet.
DT general vocabulary	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join
DT topic vocabulary	Running stitch, overlap stitch, (backstitch) zip, button, clasp, pattern	Model, aesthetics, purpose, strong, sturdy, leavers, pivot, bridge, slot	Carbohydrate, protein, names of different bread types, texture, sweet, savoury, method process, spread, flavours, filling,
Lesson sequence			
Lesson 1	**Research:** To investigate money containers. Can the children identify the different purposes and users: cards, coins, notes, men, women, children? Draw diagrams from different perspectives- label features- material, joins,	**Research:** To research mechanisms in pop up books. Can the children identify which part moves? Can the children identify different types of mechanisms?	**Research:** To research the fillings of sandwich's and find the food groups Can the children identify the nutritional content of a variety of sandwiches and fillings and consider how grouping food can help us plan for a healthy diet? Can they conduct research on peoples favourite sandwich fillings. menus?

			Possible trip to local shop to record sandwich filling options.
Lesson 2	**<u>Practise:</u>** To use a range of sewing stitches and understand their properties. To know materials have different properties To realise some joining technques are stronger/weaker To know some stitches are stronger and more suitable to different seams/joins	**<u>Research:</u>** To understand three basic pop-up techniques. **tinyurl.com/tp-PopupVid1** (Haunted House), **tinyurl.com/ tp-PopupVid2** (Popville) and **tinyurl. com/tp-PopupVid3**(Dinosaurs). https://www.youtube.com/watch?v=iU5QLeG4Rm https://www.youtube.com/watch?v=iw675Lesbbg Can the children see which is their favourite pop-up page? Why? Can they how do the pop-ups seem to work? Can you see any mechanisms that move but are NOT pop-ups? Can pupils articulate what they like or don't like about pop-ups? Can they identify the difference between pop-ups and paper mechanisms? Can the children offer simple suggestions about how pop-ups work?	**<u>Research/Practice:</u>** Children will identify, taste, describe and sort a variety of different breads and sandwich fillings. They will then discuss their personal preferences. To taste a variety of different breads and sandwiches and examine flavours and textures.
Lesson 3	**<u>Design:</u>** To design and plan a money container for a particular purpose. Can the children decide on function, form and aesthetics of their piece? Can the children decide on embellishments and stitch to use? Can the children produce annotated and labelled designs?	**<u>Practise:</u>** To create and test a prototype Box pop-up. Can children make appropriate adjustments to their work as they figure out challenges and solutions? Can pupils readily make connections between the size of their picture and how to hide it inside the paper fold?	**<u>Design:</u>** To design and plan a sandwich for a particular purpose. Can children choose a purpose for their sandwich design? Can children describe each step in the process of making their sandwich? Can children design a healthy sandwich? What makes a sandwich healthy?
Lesson 4	**<u>Make:</u>** To make a money container using the stiches and fabric identified. Are the children able to follow a simple pattern? Can they problem solve in the making? (Two lessons)	**<u>Design:</u>** To design simple pop-up techniques for a more complex product. Can children identify which pop-up techniques they are using? Have pop-ups been effectively designed to enhance text? Can the pupils readily identify potential problems in the planned construction of their designs? Encourage pupils to label the drawings they make with details about whether the techniques are V-fold, Box pop-up	**<u>Make:</u>** To be able to create a healthy sandwich. Do children know how to work safely and appropriately with food? Can children follow their designs to create a sandwich? Can children present their sandwich in an appealing way?
Lesson 5	**<u>Evaluate:</u>** To be able to evaluate a finished product. Can the children identify what went well and what they would change/do differently if they did it again? Can the children discuss how they overcame challenges and problem solve?	**<u>Make:</u>** To be able to make a moving picture book selecting tools, and materials. How consistently accurate are children's constructions of the different pop-ups, when left to their own design and making process? Do the pop-ups reflect the intent of the story? E.g. is there a surprise in the story that is enhanced by an equally surprising pop-up?	**<u>Evaluate:</u>** To be able to evaluate a finished product. Discuss the process of creating and following a recipe, evaluating their own process as well as their finished product. Can children evaluate their work fairly and constructively? Can children suggest improvements to their design?
Lesson 6		**<u>Evaluate</u>**: To be able to evaluate a finished product. Which pop-ups are your favourites? What would you do differently next time? How could you use these pop-up ideas in future (e.g. making birthday invitations/Christmas cards etc)?	

Long Term DT curriculum

Year 4			
	Autumn	**Spring**	**Summer**
	Electrical Systems: Light up sign. Link to science.	Textiles: Wallets/small fabric containers- Functions of Fabric	Food: Pizza
Knowledge **Key area of focus**	To develop an understanding of circuits, imbedding in a structure, enclosed or on the surface. To create a cut and joined structure using a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue and add a circuit.	To develop an understanding of sustainability in the clothing industry and how to create a functional wallet using recycled materials. To create a template/ pattern, decide on the stitch used, seams, hidden seams using a specific design brief and criteria.	To be able to make and select ingredients to create a pizza following a design brief.
DT general vocabulary	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join
DT topic vocabulary	Circuit, switch, component, prototype, appealing. Link with science vocab.	Brief, sustainability, reuse, recycle, material, fabric, seam, seam allowance, hidden seam, stitch names: running, backstitch, overlap, pattern. Synthetic, man-made, natural fibres/fabrics	Nutrition, pre-cooked, processed, fresh, , balanced, hygiene, protein
Lesson sequence			
Lesson 1	**Research**: To investigate and analyse illuminated signs. Do the children know why we have illuminated signs? Can they identify illuminated features? Can children suggest reasons why it is helpful to illuminate signs?	**Research**: Look at common fabrics we use for clothing and soft furnishings. Can children define what a fabric is? Can children name a variety of different fabrics? Can children discuss and answer questions about fabrics in terms of their properties and uses?	**Research:** To research pizza, and balances, healthy options. Can children identify the main food groups? Can children identify the main food groups? Can children identify food groups of pizza toppings?
Lesson 2	**Research:** To explore types of circuits and LEDs May be used instead of sense circuitry Can children suggest some problems with using traditional, incandescent bulbs in products? Can children suggest some aesthetic and practical reasons for using LEDs instead?	**Research:** investigate natural and synthetic fabrics To understand the importance of recycling and reusing fabric. Can children name some synthetic fabrics and the advantages they have over natural fabrics? Do children understand the impact that the invention of synthetic fabrics had on the world? Do children understand why it is important to try to recycle/ reuse unwanted clothing? Can children name and discuss some sustainable fabrics?	**Research/ Practise:** To explore, describe and categorise a varieties of bread and pizza toppings. To evaluate different types and develop preferences. Can they name and describe a varieties of toppings Do they understand healthy means balanced?
Lesson 3	**Practice/Design:** To develop ideas for decorative design. Can the children make a prototype and explore bulb circuits Design a box and its make practical considerations Can children identify potential audiences and purposes for a product design? Can children make practical considerations about how to fit essential components in/on a product? Can children consider tools and techniques they may need to use when constructing a product of their own design?	**Practise:** To practise sewing stitches and complete simple 'repairs" Can children identify and name some different sewing stitches? Can children use one or more of these stitches when sewing fabric together? Can children discuss the use/effectiveness of these different sewing stitches? Can children practise their skills in order to repair a piece of clothing, sew on a button?	**Design:** To design a balanced, healthy pizza. Can the children use a brief: healthy – at least 2 types of fruit or veg. A source of protein, carbohydrate base, colourful and tasty. Can the children make decisions re balanced and healthy. Can the children design their pizza following a particular brief?
Lesson 4	**Make:** To select and use tools, materials, components to make an enclosure of a decorative light up sign. Can children identify ways in which their existing designs could be adapted for the materials available? Can children select appropriate tools and materials for construction of their design? Can children identify ways in which they can work safely while constructing their design?	**Design:** Design a small fabric bag using specific criteria. Can children design a bag or pouch to meet specific design criteria? Can children plan the making process, understanding what they will need to do and the order in which they will need to do it?	**Make:** To make a food product based on a design and follow a recipe. Can the children understand wht there is an order to a recipe? Can the children make decision re problems they may face?

Lesson 5	**Make:** To construct a working circuit with one or more lights. Can children decide on an appropriate way to fit electrical components inside their designs?	**Make:** Select material and sewing stitch and the fastening they wish to use, using their pattern.	**Evaluate:** To evaluate a finished product. Can they evaluate a finished product and say what they think of them.
Lesson 6	**Evaluate:** To evaluate finalised product.	**Evaluate:** To evaluate their finished product against the design criteria.	

Long Term DT curriculum

Year 5			
	Autumn	**Spring**	**Summer**
	Structures: Chocolate Boxes Hook: Hola Mexico!	Food: Bread Hook: Traders and Raiders	Textiles: Slippers Hook: Shackleton/Frozen Planet
Knowledge **Key area of focus**	To make design choices about shape, size, colour and font. To research Use a range of skills and techniques to create for a purpose according to a brief.	To make choices of flavours, shape and overall appearance. To gain knowledge and understanding from investigating existing products and exploring the functions and properties of ingredients. Use this knowledge when designing and making their own bread products. Use a range of skills and techniques using basic food tools and equipment and use appropriate safety and hygiene routines.	To learn how slippers are designed for different purposes and different users. Design patterns/templates, and join and reinforce fabrics. Develop designing skills when evaluating products and use this information to generate their own ideas and identify design criteria. Communicate their early ideas prototype with paper and use decorative techniques e.g embroidery.
DT general vocabulary	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join	design, idea, discuss, explore, use, choose, join
DT topic vocabulary	Aesthetics, appealing, 3D nets, exploded diagrams. Client, expensive, luxury, budget, market, font, consumer	Method, recipe, additions, substitutes, nutrition, sweet, savoury, knead, combine	Seam, seam allowance, pattern, reverse, stitch names- running stitch, overlap, back stitch and blanket stitch, prototype, aesthetic
Lesson sequence			
Lesson 1	**Research:** To investigate and evaluate chocolate packaging. Can the children identify what makes a brand luxury or budget? What are the fonts like? What colour schemes are used? Can the children investigating, comparing and contrasting different types of packaging for chocolate, and their effectiveness on the consumer?	**Research:** To investigate and evaluate bread products according to their characteristics.	**Research:** Look at existing slipper types and explore the stitching, material and who the end user is.
Lesson 2	**Research** To explore fonts for a chocolate box. Can the children explore the range of font and colours to show the brand and consumer? Can the children identify the elements needed to design packaging for a new chocolate product from a chosen brief.	**Research** To learn how bread products are an important part of a balanced diet and can be eaten in different ways.	**Practice:** To make a prototype/ template for a slipper design. What different parts will they need? Where will you join your seams? How much of a seam allowance will you leave?
Lesson 3	**Practice:** To test a design using 3D net. Can the children make a protoype of a net for a chocolate box? Can the children explore the different types o shaped boxes- exploded diagram of net and joining flaps.	**Practice** To find out which different ingredients are needed to make bread and how ingredients can be altered and mixed to create different effect	**Practise:** To explore/investigate and practise sewing stiches and attaching pieces together and on top for aesthetics.
Lours Lesson 4	**Design:** To design a chocolate packaging.	**Design:** To be able to design a new bread product for a particular person or event.	**Design:** To design slippers for a specific user.

	Children to use a ruler to take specific measurements. What brief/ consumer are the children going to design for? What criteria must they follow?	Children will create their own bread recipes and develop ideas regarding how it may be turned out, e.g. flat, plaited, as a large 'bun'. Can children use the results of investigations when developing design ideas? Can children explain how they will make their product? Can children explain what purpose they are designing and creating their product for?	What purpose will your slippers be used for? Who are you designing your slippers for? Measurements. Use the design criteria to create a design making choices of stitches, embellishments.
Lesson 5	**Make:** To make a chocolate box packaging for a purpose. Can children use the results of investigations when developing design ideas? Can children explain how they will make their product? Can children explain what purpose they are designing and creating their product for?	**Make:** To be able to make bread based on a plan and design Referring to previously created designs, children will make and bake their own bread. Can children apply what they have learnt when making their product? Can children follow a design accurately? Can children work safely, hygienically and accurately?	**Make:** Use a template/pattern to create chosen design. To make good decisions regarding fabric and material choices. Record any changes to design as it happens in the making.
Lesson 6	**Evaluate:** Evaluate their own chocolate box packaging. Suggest improvements	**Evaluate:** Evaluate their own bread recipes. Some children may suggest ways in which their recipe/design may be improved.	**Make and Evaluate:** Complete slipper and evaluate effectiveness against design criteria.

Long Term DT curriculum

Year 6			
	Autumn	**Spring**	**Summer**
		Mechanisms: Moving Toy.	Food: Rationing and World War 2 Menu.
Knowledge **Key area of focus**	To use computer aided design to create a model with embedded systems. To communicate ideas regarding programming and system. Children to be introduced to computer control.	To create a moving toy using cams and followers following a specific design brief and criteria. To explore and design a toy with moving parts using learning of cams and followers.	To know how to create a balanced menu with limited resources. To know what a balanced diet/ meal is and needs. Research limitations on food accessibility and abundance (vegetables home grown to supplement recipes), design and make a cake or dish.
DT general vocabulary	Design, idea, discuss, explore, use, choose, join, purpose, predict, audience, evaluate	Design, idea, discuss, explore, use, choose, join, purpose, predict, audience, evaluate	Design, idea, discuss, explore, use, choose, join, purpose, predict, audience, evaluate
DT topic vocabulary	Domestic, input/output, obstacle, end user, industrial, robots, instructions	Cams, axis, follower, linear motion, rotary motion, 3D structure, motion, movement	Texture, taste, product, hygiene rationing savoury quantity, health and safety, balanced diet, food groups, alternatives
Lesson sequence			
Lesson 1	**Research:** To research examples of robots in everyday life. https://www.orientsoftware.com/blog/robots-in-everyday-life/ Can the children identify reasons why they are helpful? Can the children identify domestic (In the home) Medical, Industrial, Entertainment, Educational?	**Research:** To investigate toys with moving cam mechanisms Look at the different types of moving cam mechanisms. Look at the different types of moving toys. Consider the audience and the purpose. Evaluate the toys and compare similarities and differences.	**Research:** To research rationed ingredients during WW2. To understand that not all foods were rationed. Knowing alternatives that would be needed if certain ingredients were rationed. They will look at the types of food and how much was rationed to individuals Share a typical; weekly menu from the 40's and allow time to discuss. Look at Marguerite Patten/ Lord Woolton was the Minister of Food (1939–1958Create a weekly menu for a family of 4 using only rationed ingredients as well as home grown ingredients
Lesson 2	**Practise:** To explore floor robots, understanding what they are and how they are programmed and controlled.	**Research:** To investigate types of cam mechanisms. Test different shaped cams, create a prototype structure.	https://www.youtube.com/watch?v=flxmB8NKMzE https://www.youtube.com/watch?v=7e5oygzUrs4 **Research:** To understand the importance of food hygiene To know the different aspects of hygiene.

	Are the children able to identify input and output on the devices?		When working with food what do you think the most important piece of hygiene information is. Explain why. Compare and contrast method for food storage in WW2 and now.
Lesson 3	**Research/Design:** To generate and develop ideas. Can the children use exploded diagrams and annotated sketches for an adventure map. Can the children design a map to include criteria to include eg: obstacle?	**Design** To design a moving toy with cam mechanism. Think about the audience purpose for their toy. Think about the structure, decoration materials and mechanisms	**Research/Design:** Certain foods were unavailable, and others were restricted during rationing To know the ingredients which were rationed To learn different recipes which were used during WW2 To design and create a wartime cake or dish using ingredients available during rationing. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Select from and use a wider range of tools and equipment to perform practical tasks
Lesson 4	**Research/Design:** To research and design to create an innovative, functional appealing product suitable for the end user	**Make:** To be able to follow a design to create a moving toy with a cam mechanism.	**Make:** Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Children to add 2-3 additional ingredients and write out their recipes using a range of instructional writing features. They will write the method they intend to using a variety of sentences structures and vocabulary appropriate to the task
Lesson 5	**Make:** To use appropriate materials Can the children select from and use a wider range of materials and components, including construction materials? Can the children identify their functional properties and aesthetic qualities by creating an adventure map using materials selected for their properties.	**Evaluate :** To evaluate final product against design criteria. Peer evaluation – year 2 our audience feedback. Self-evaluation - children evaluate their toy.	**Evaluate:** To evaluate final product against design criteria. Summarise and explain the more advanced skills needed to design and create a wartime cake or savoury dish using key vocabulary taught
Lesson 6	**Evaluate:** To evaluate the finished product and test using a floor robot.		