Design Technology Long Term Planning

'Achieve Excellence'

At William Stockton, to 'get better at 'Design and Technology' means that children learn to think creatively to solve problems and develop a natural curiosity alongside extending their understanding and skills base. We encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts

Substantive - I know that…

Disciplinary - I know how…

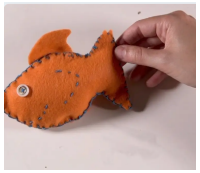
	Autumn	Spring	Summer

Nursery	Construction/ Structure Stack blocks Make enclosures and spaces with construction/small world (small & large scale) Blocks can be put on top of each other to make different shapes. Joins Join construction pieces together - button joins, magnetic joins, screw blocks, push joins eg stickle bricks/ duplo Use glue to join paper (stick/ PVA) We can join different parts together using glue. We can screw blocks together. Using Tools Use a glue spreader. Use palm scissors to make snips Use a knife to spread With support use tools safely Sometimes we need something to help us to do a job Food Technology With support, practise spreading, stirring and mixing. Decorate a gingerbread man. Develop snack preparation skills daily: chopping, spreading, pouring Most food needs to be made or prepared.	Construction/Structure Make imaginative 'small world' with blocks and construction (small & large scale) Explore materials freely eg boxes to develop ideas about what to make and build models eg castle Boxes can be put on top of each other to make different shapes. Joins Use different tape to join We can join different parts together using tape Using Tools Use three finger scissors to cut a snips/straight line. Use one handed tools and equipment with increasing control eg knives, spoons, hammers Explore hole punches and paper clips With support use tools safely Sometimes we need something to help us to do a job Food Technology Melt chocolate to make Easter nests Observe changes in food when heating Develop snack preparation skills daily: chopping, spreading, pouring You need to wash your hands when making food. Most food needs to be made or prepared.	Construction/ Structure Make simple models by choosing the materials they want to use. (small & large scale) Models can be made from different materials Joins Select how to join their models/ product together by independently choosing from the making trolley. We can join different parts together Using Tools Continue to develop a comfortable scissor grip Explore how a blender works. With support use tools safely and with increasing control eg knife for chopping Tools can help us to do a job. Food Technology Chop and blend fruit to make a summer smoothie. Observe change in food when blended. Develop snack preparation skills daily: chopping, spreading, pouring Food can be prepared by chopping, spreading and pouring
Vocabulary	**Blocks** **Join** **Spread** **Snip**	**Melt** **Tools**	**Model** **Change** **Chop** **Pour**

Reception	Construction/Structure Begin to talk about construction model designs. Build with a purpose using large and small construction eg crates, planks, small join construction eg lego Discuss how they they can build stronger models Models need to be strong so that they don't break Joins Use paper fasteners to create a simple lever mechanism eg clock face hands Use hole punch to effect changes to materials Some joins can make a moving part. Using Tools Use a vegetable peeler and masher when preparing vegetables for soup. Some vegetables need to be peeled. A masher mashes vegetables up Food Technology Make a harvest vegetable soup following simple instructions Observe changes in food when heated and mashed Washing hands before preparing and making food is important	Wheels & Movement A vehicle has wheels, and somewhere to sit Identify wheels and axle on a toy vehicle Make junk model vehicle with moving wheels Draw a picture of their model. Joins Use a hole puncher to make holes in wheels for the axle. Use a variety of joining materials - tape, string, glue, paper clips To make a moving part the join needs to be bigger. Using Tools Use a knife to spread/cut/chop Use a grater to grate cheese Tools need to be used carefully. Screwdrivers can be used on screws. A knife is used to spread/cut and chop food. A grater makes food go into small pieces. Food Technology Prepare and make simple food Eating healthily is important Washing hands before preparing and making food is important	Textiles Make a weaved basket Joins Make slits in paper using scissors. Staple together 2 pieces of paper eg book Different joins are needed to join two or more parts together. Using Tools Use a masher to mash fruit and vegetables Use a blender to blend fruits Use a stapler safely Food Technology Design and make a summer fruit drink Talk about about what they like/ dislike about their drink(Evaluate) Washing hands before preparing and making food is important
Vocabulary	**Peel** **Mash** **Fasten**	**Wheels** **Joins** **Grater** **Spread** **Cut**	**Staple** **Blend** **Chop**

Year 1	**Textiles** **Sock puppets** 	**Food and Nutrition** **Preparing Fruit kebabs** 	**Moving Mechanisms-** **Wheels and Axles** **Design and make a toy car** 
	Design, plan, make, evaluate a sock puppet for a younger child to be used for entertainment Use tools, eg scissors safely Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape You can add different objects to materials to make them into a puppet.	**Design, plan, make and evaluate a fruit kebab for my parents to be used for desert ideas.** Trying different foods is important. Use a knife safely to cut fruit using the bridge method Select ingredients to make a healthy and tasty snack	**Design, plan, make and evaluate a toy that moves on wheels for children in reception to play with.** Draw a simple diagram to show my design Build a moving toy using wheels and axles. Choose materials to make a toy car. A toy car rolls because it has wheels and axles. A piece of dowling needs to connect the wheels so that they can move and the wheels need to be secure If my design doesn't work, I need to find out why and what I can do different to make it better.
Vocabulary	**Design** **Tools** **Glue** **Decoration**	**Bridge method** **Healthy** **Knife** **Skewer**	**Wheels** **Axle** **Build** **Dowling**
Year 2	**Textiles** **Seasonal stockting**	**Structures** **Making houses**	**Food and Nutrition** **Portable Snacks** 

			
	Design, plan, make, evaluate a Christmas stocking for a sibling to be used as a stocking To begin to thread a needle with adult support. Use a running stitch to stitch together two pieces of material. Add further decoration by glueing the design on to the stocking. Materials can be joined in different ways - some are more secure than others.	**Design, plan, make, evaluate a house for teachers to be used as a classroom resource for the Great Fire of London** Investigate how to make structures strong using jenga bricks Houses today are made of bricks which are hard. In the past they were made of wood. Bricks are bonded together with cement. The wood was bonded together with glue. Build a freestanding house with a roof using lollipop sticks securing them with glue. Evaluate what has worked well and what needs to change.	**Design, plan, make, evaluate a healthy wrap for a child to be used as a packed lunch in school.** Hygiene is important when preparing and cooking food - you must wash your hands Use techniques such as cutting, peeling and grating with greater confidence and independence Use the bridge method and be introduced to the claw technique to chop vegetables safely. Begin to use the bridge and claw technique, under close supervision, to cut vegetables and make crudites.
Vocabulary	**Needle** **Thread** **Running stitch** **Glue**	**Freestanding** **Investigate** **Structures**	**Hygiene** **Cutting** **Peeling** **Grating** **Claw technique**
Year 3/4 Cycle 1	**Structures** **Christmas gift box for Christmas chocolates**	**Food and Nutrition** **Pizza** 	**Textiles** **Toy**

			
	Design, plan, make, evaluate a Christmas gift box for our parents/carers to be used as a Christmas gift for chocolates Investigate different structures for holding chocolates and deconstruct them. Remake the structure from the net. Make prototypes of different structures. Use CAD (Tinkercad to design the box) Use templates to support. Use rulers to fold card precisely. Decorate with Christmas wrapping paper and ribbon. Christmas gifts should be pleasing to look at and lovingly made.	**Design, plan, make, evaluate pizzas for ourselves to be used as a healthy lunch** Knives, peelers and graters are sharp and you need to be careful when you use them. Some food needs to be kept in the fridge to ensure that it is safe to eat. Food should not be eaten past the Use by date. Investigate different bases: naan, pitta, tortilla Use a range of chopping and dicing techniques: slicing, dicing, julienning and grating using a knife and grater Decide on the toppings of the pizza and the ingredients needed and how they will be chopped. Build own pizzas with your own toppings.	**Design, make, plan and evaluate a soft toy for a younger sibling/child to be used for comfort.** Create an appropriate template for their stuffed toy. Join two pieces of fabric using a blanket stitch. Neatly cut out their fabric. Use appliqué or decorative stitching to decorate the front of their stuffed toy. Different stitches are used for different purposes
Vocabulary	**Construct** **Deconstruct** **Prototypes** **CAD - Computer aided design**	**Pizza bases** **Chopped** **Diced** **Julienne**	**Blanket stitch** **Decorative stitching** **Cross stitch** **Template**
Year 3/4 Cycle 2	**Mechanisms** **Pneumatics**	**Electronic systems** **Lightbox** 	**Food and Nutrition** **Pasta salad**

			
	Design, make, plan and evaluate a moving toy with pneumatics for a child to be used as a toy Pneumatics-powered machines use compressed air or other gases to make something move Use syringes and tubing for pneumatic mechanisms. Choose appropriate materials for each part of a pneumatic system. Measure carefully and cut items to the right length Produce an appeasing toy for the audience.	**Design, plan, make, evaluate a lightbox for our classroom to be used for information about our school's ethos.** Lightboxes can be used as a decoration or for information Build a structure for a lightbox: using cardboard strengthened with cardboard triangles. Build an electric circuit using a light bulb and a switch and place this within the structure. Design a silhouette to share our school's values with a switch. Work as a team to design and make a product.	**Design, plan, make, evaluate a pasta salad for children and adults to be used for a healthy lunch** Use a range of chopping and dicing techniques: slicing, dicing, julienning and grating using a knife and grater Decide on the ingredients needed and how they will be chopped and prepared. Evaluate and add different proteins to the pasta salad Some food needs to be kept in the fridge to ensure that it is safe to eat. Food should not be eaten past the Use by date. Knives, peelers and graters are sharp and you need to be careful when you use them.
Vocabulary	**Pneumatics** **Syringes** **Tubing** **Appeasing**	**Electric circuit** **Structure** **Strengthen**	**Chopped** **Diced** **Julienne** **Proteins**
Year 5/6 Cycle 1	**Structures** **Truss Bridges** 	**Food and Nutrition** **Making Bread** 	**Textiles** **Make a pencil case**

	Design, make, plan and evaluate bridges for _____to be used _____. A bridge takes people from one area to another over something that would otherwise be difficult to cross. Investigate and evaluate different bridges. Investigate shapes that strengthen bridges. Design a bridge as a group that can successfully hold …… Identify the best materials to build a bridge. Evaluate the success of a bridge and make improvements for next time.	**Design, make, plan and evaluate bread for a bakery to be used for inspiration for supermarkets.** The dough needs kneading to make bread. Yeast is a rising agent that causes the bread to rise. The different stages of bread making are measuring, mixing, proving, shaping and baking. Investigate and evaluate bread products using senses. Score bread with a knife to form a design. Select from and use a wide range of tools and equipment - cutting, shaping, joining and finishing. (Knives, chopping board, garlic crusher).	**Design, make, plan and evaluate a pencil case to be used at home next year.** Sew a running stitch Sew a backstitch Sew a whip stitch Create a secure fastening eg. button, popper, toggle Use appropriate stitching to add buttons, ribbons, felt embellishments Different stitches are used for different things.
Vocabulary	**Truss bridges** **Strengthen** **Arch** **Load** **Structure** **Foundation**	**Prove** **Kneading** **Yeast** **Rising** **Scoring**	**Running stitch** **Back stitch** **Whip stitch** **Fastening** **Embellishments**
Year 5/6 Cycle 2	**Moving Mechanisms** **Cams** 	**Food and Nutrition** **Making Budget Meals** 	**Electronic systems, pulleys and structures** **Fairground Rides** 
	Design, make, plan and evaluate a toy for a younger child to be used for younger parents. Understand that a cam mechanism will change	**Design, make, plan and evaluate a healthy meal to feed a family on a budget** A budget meal is a meal that costs little but goes a long way.	**Design, make, plan and evaluate a fairground ride to be used as a prototype for the visiting fairground.** Create a detailed drawing of a fairground ride

	rotary motion into linear motion Explore how different shaped cams affect the movement of the follower Experiment with a variety of materials, tools and techniques Identify ways of strengthening a structure Evaluate a finished product fairly	Select from and use a wide range of tools and equipment - Knives, graters, chopping board, garlic crusher, pans), colander, hob Slice and dice vegetables using the bridge and claw grip. Grating vegetables into meat can make meals more healthy Design and make a budget meal for a healthy diet. Evaluate a finished design identifying strengths and weaknesses to suggest future improvements.	with labels Know how pulley and belt systems can be used to transfer movement Manipulate their pulleys to create different movements Suggest ways in which ideas for frameworks could be developed to ideas for their own fairground ride designs Design an appropriate electrical circuit for their ride Work accurately and safely with a variety of tools, materials and electrical components. Evaluate a finished product fairly
Vocabulary	**Cam** **Rotary** **Linear**	**Budget** **Colander** **Slice and dice**	**Pulley** **Belt** **Transfer** **Electrical circuits** **Electrical components**