Kingsthorne Primary School

Design & Technology

Intent:
Design and Technology is an inspiring, rigorous and practical subject. It encourages children to learn, think and intervene creatively to solve problems both as individuals and as part of a team. At Kingsthorne, we encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems, considering their own and others' needs, wants and values. We aim to, where possible, link work to other topic areas and show the children how important Design is in our local area. For example we link our Y4 Science Electricity topic with our Dt topic of making a torch. In Y2 we link our transport topic to learning about axles and wheels in DT and make it 'real' by introducing them to factories and manufacturers located close by (such as Jaguar Landrover). The children are also given opportunities to reflect upon and evaluate past and present design. At Kingsthorne we encourage every child to become innovators and risk-takers.

Implementation:

Through a variety of practical and creative activities, we teach the knowledge, understanding and skills needed to engage in an interactive process of designing and making. The children are taught a process which is repeated across all Design and Technology lessons, so that it is embedded (Design, Make, Evaluate). Key skills and knowledge are mapped across the school to ensure coverage of the National Curriculum and progression across the year groups. This also ensures that there is a context for the children's work; that they learn about real life design as well as developing their own skills. The school's high quality of DT curriculum is supported by the availability of a wide range of resources, which have been specifically linked to the topics taught.

Cooking and Nutrition is something that we feel is essential for our children to learn about frequently. As a school we have decided to ensure it is taught in every year group at Kingsthorne.

Impact:
Children learn to take risks, become resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world.

Year Group	**What we teach and why** Highlight repeats / skills building up	**Adaptations and experiences that are specifically chosen for our community and make links to the wider world. What do we hang the learning on to make it exciting?** Include a variety of:

				charity work, cultural links, career opportunities, house competitions, trips, cross curricular links, intervention work, displays, focus on local area, link with external agencies, visitors, themed days etc..
	Autumn	**Spring**	**Summer**	
Nursery	**Topic Title** All About Me Nursery Rhymes and Celebrations **Links to DM** **Birth to Three** Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials. Make simple models which express their ideas. Join different materials and explore different textures. **Three and Four Year Olds** Explore different materials freely, to develop their ideas about how to use them what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. **Key Knowledge & Vocabulary** The children will learn how to use a variety of tools and techniques to make models. Vocab - they children will learn the names of tools: blocks, Lego, mobilo, scissors, tape, glue, paint, pencils	**Topic Title** People Who Help Us Colours and Patterns **Links to DM** **Three and Four Year Olds** Explore different materials freely, to develop their ideas about how to use them what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. **Key Knowledge & Vocabulary.** They will create Easter craft using a variety of materials and tools. Vocab – they will learn the names of tools; blocks, lego, mobilo, scissors, tape, glue, paint, pencils **Sequence of Lessons** During the People who help us topic, the children will design and make emergency vehicles using junk modelling equipment and a variety of tools. Children will make Easter crafts including cards and Easter nest cakes. Children will select different printed patterns to design clothes.	**Topic Title** Bears Seaside **Links to DM** **Three and Four Year Olds** Explore different materials freely, to develop their ideas about how to use them what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. **Key Knowledge & Vocabulary** Using their knowledge of material and media the children will be able to create models, design and constructions. They will be able to select and the name the tools the use and explain what they need them for. **Sequence of Lessons** During the Bears topic children will create habitats for the bears using junk modelling and a variety of materials and tools. Children will make a Bear Hunt map out of real materials such as grass, mud and water. Children will make rockets out of junk modelling.	The children have free access to a variety of materials in the painting, playdough, small construction, block play, outdoor and junk modelling areas. There is cookery area in the EYFS creative room where the children get to make a variety of things throughout the year. The children choose what they want to make, help write shopping lists, weigh and mix the ingredients and then eat it once it has been made. They make wide variety of things from pizzas, cake, biscuits, bread, fruit kebabs, soups, wedges, etc. There is a vegetable patch in the EYFS garden where the children help to grow- carrots, beetroot, potatoes, strawberries, apples, pumpkins, etc. They then taste these when they are grown and cook using them. The children are set Homework challenges where they can make their favourite room in their house, design and make vehicles, musical instruments, maps for a bear hunt and seaside inspired food. **Threads:** Design Make Evaluate

	Sequence of Lessons Children will make houses from junk modelling. Children will make beds using junk modelling and suitable materials based on a comfortable bed for Ten in a Bed. Children will build walls for Humpty Dumpty to sit on and fall from. Children will make diva lamps as part of our work on Diwali. Children will make Christmas crafts including decorations, cards, and calendars for the new year.		The children will help to make sandwiches and cakes for the teddy bear picnic. **The children will use play food to decide what the teddy bears may like to eat at the picnic and discuss healthy choices.** Children will make a hat to keep teddy dry, discussing which materials keep teddy dry and which materials were best for the hat at the end of the shared experiment. Children will make pirate ships and boats to sail on the water during the Seaside topic. Children will build sandcastles and explore different structures they can build in wet sand.	Cooking and Nutrition
Reception	**Topic Title** Aut 1- Local Environment Aut 2- Up in the Air **Links to DM** **Children in Reception** • Create collaboratively, sharing ideas, resources and skills. •Explore, use and refine a variety of artistic effects to express their ideas and feelings. **Key Knowledge & Vocabulary** The children will learn how to use a variety of tools and techniques to make models. these skills will be then used during child-led learning.	**Topic Title** Spr 1- Changes Spr 2- Tea Party **Links to DM** **Children in Reception** • Create collaboratively, sharing ideas, resources and skills. •Explore, use and refine a variety of artistic effects to express their ideas and feelings. **Key Knowledge & Vocabulary** The children will explore joining materials when making Easter hats. **Sequence of Lessons**	**Topic Title** Sum 1- Water and Under the Sea Sum 2- Cooking and Growing **Links to ELG** • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used; • Make use of props and materials when role playing characters in narratives and stories. •PSED (DM)- Know and talk about the different factors that support their overall health and wellbeing:- healthy eating **Key Knowledge & Vocabulary** The children will be able to show what they have learnt of how to use media and material	The children have free access to a variety of materials in the painting, playdough, small construction, block play, outdoor and junk modelling areas. There is cookery area in the EYFS creative room where the children get to make a variety of things throughout the year. the children choose what they want to make, help write shopping lists, weigh and mix the ingredients and then eat it once it has been made. They make wide variety of things from pizzas, cake, biscuits, bread, fruit kebabs, soups, wedges, etc. There is a vegetable patch in the EYFS garden where the children help to grow- carrots, beetroot, potatoes, strawberries, apples,

	Sequence of Lessons When learning about People Who Help us the children will work together to build different emergency vehicles using the large cardboard boxes. When learning about Autumn the children will learn about hedgehogs hibernating and will make a home for the hedgehog to go to sleep in, using a variety of junk modelling/ construction toys. When learning about Harvest, the children make hedgehog bread. **How does this link /build on previous learning?** Children are able to junk model in Nursery during the teddy bears picnic and seaside topics	When making Easter crafts and party hats the children will explore different methods of joining materials such as- cellotape, glue, split pins. During the topic- Tea Party the children make a variety of food. They learn how to make a simple sandwich, make cupcakes and jelly. Extra- Making pizza when learning about sharing in maths. **How does this link /build on previous learning?** The children will have done Easter crafts in Nursery and this is being developed with the children being asked to join parts together.	and how to join and assemble them. They will be able to show their own ideas using a variety of techniques. **Sequence of Lessons** When reading the story Commotion in the Ocean, the children will make 3D sea boxes. They will use what they have learnt about media and materials, and how to join them to make their own sea scene. Make pirate hats (The Night Pirates). Join the 2 pieces together using different materials During the topic cooking and growing the children learn how to cook and make a variety of dishes. They use the potatoes from the garden to make wedges and taste the strawberries they have grown. When we go to the fruit and vegetable farm, they pick some produce to bring back to school and make dishes with these such as vegetable soup and fruit smoothies.	pumpkins, etc. They then taste these when they are grown and cook using them. **Adaptations and Experiences** During Autumn 2 we go to Legoland and explore using Lego to build models. During the visit we tell the children about different careers and explain how great the different jobs are at Legoland and different construction jobs. **Homework challenges-** Children to make a model of a vehicle they see on their way to school during the Local Environment topic. Cooking and Growing topic challenge- to make a recipe card or take photos and write about what they have cooked/made at home. **Threads:** Design Make Evaluate Key Vocabulary Cooking and Nutrition
Year 1	**Topic Title** All About Me (Strengthening Structures and Cooking and Nutrition) **Links to NC** Cut food safely Make a simple plan before making Explain how they want to make their product Choose appropriate resources and tools	**Topic Title** Animals (Free Standing Structures) **Links to NC** Choose appropriate resources and tools Use own ideas to make something Make a model stronger Use templates and select from a range of tools Explore and evaluate existing products	**Topic Title** Holidays & Seasides (Sliders and Levers) **Links to NC** Design purposeful, functional and appealing products Choose an idea which they like themselves Develop and communicate their ideas through talking Develop and communicate their ideas through talking	**Adaptations and Experiences** At Kingsthorne we teach Nutrition and Cooking in every year group to show the importance of a healthy diet and the need to cook fresh, healthy food. In Y1 the children are able to visit the farm and learn all about farm animals, jobs of farmers. In the Summer Term we create our own beach day on our quad and the children get to experience seaside games, an ice cream van visits and they even splash around in

	Use own ideas to make something Make a model stronger **Key Knowledge & Vocabulary** **Cooking** cut, chop, mix, slice, spread, grate, roll, weigh, pour, skewer **D&T** mold, model, shape, roll, texture, edit, improve, paint **Sequence of Lessons** **Cooking (Autumn 1)** L.O. I am learning to spread to make a sandwich. L.O. I am learning to slice to make fruit kebabs. **D & T (Autumn 2)** L.O. I am learning to design a house for the three little pigs. L.O. I can choose the resources and tools I need for my house. L.O. I can share my plan with an adult. I can explain verbally how I want to make my house.	Evaluate their own ideas against a success criteria **Key Knowledge & Vocabulary** Client, design criteria, evaluation, net, stable, strong, weak, structure, windmill **Sequence of Lessons** FREE STANDING STRUCTURE- (Link to a windmill- Kapow Y1) L.O. I am learning to identify what freestanding structure are already made (children take photographs of school playgrounds, walls, garden furniture, windmill) L.O. I am learning different ways that a structure can be assembled (teacher demonstration of straws and plasticines, matchsticks and bricks etc) L.O. I know what a windmill is L.O. I am learning to generate simple design criteria L.O. I am learning to plan the order which my structure will be made L.O. I am learning to select appropriate tools	Use templates and select from a range of tools Construct materials Explore and evaluate existing products Evaluate their own ideas against a success criteria **Key Knowledge & Vocabulary** Assemble, design, design criteria, mechanism, weak, structure, strong, table, net, model, template, sliders **Sequence of lessons** Design, make and evaluate a class information book which uses leavers and sliders (Link to Humpty Dumpty moving picture- Kapow Y1) L.O. I am learning to identify sliders and levers within books with moving parts. L.O. I can think of my own idea of a moving picture and sketch it out. L.O. I can select tools and cut levers and sliders which will move. L.O. I can follow procedures safely when creating my moving picture. L.O. I can say what I like and dislike about my moving picture. L.O. I can use words to describe movement (up, down, left, right, verticle, horizontal)	paddling pools. This really brings the topic to life. **Autumn – All About Me** Practical literacy weekly – cooking and creating story props. e.g. The Gingerbread Man (making gingerbread men and story masks) **Spring - Animals** Artist Visit (start of topic) - artist comes into school to work with each class to design, draw and create 3D animal models using collage, which are displayed in the classrooms. **Additional Curriculum Links through DT:** **RE** – Chinese New Year – making and decorating Chinese lamps - Christmas – making calendars, cards and Christmas crafts - Shrove Tuesday – making pancakes **D&T Curriculum Homework Links:** **All About Me** Design and make waterproof umbrella linked to Science. Create a family tree- some children choose to do this as a 3D structure. **Animals** Design and make a 3D animal model. Design and make a 3D animal habitat. **Threads** **Design (uses, purpose and ideas)** State the purpose of the design Generate own ideas for design **Make (**planning and practical skills & techniques)

	How does this link build on previous learning? Children explore junk modelling independently during continuous provision in EYFS – In year 1 we build on this by encouraging the children to plan, revise and up-level their designs in specific/timetabled DT sessions. Children are also given opportunities to discuss their finished models and evaluate with the class. As a school we have decided to teach cooking and nutrition in every year group as we feel it is a necessary adaptation for our community	L.O. I am able to talk about my design idea and what I am making. **How does this link build on previous learning?** In reception the children begin to learn how to join materials with glue and tape, this builds on those techniques and introduces split pins and new materials.	**How does this link build on previous learning?** Re-capping skills from Autumn term becoming more adventurous with technique. e.g. chopping vegetables into different shapes and mixing different flavours of food together (children choosing their own food combinations). (This will be linked to humpty dumpty- resources saved to support)	Begin to select from tools and explain why they have chosen them Follow procedures safely, use templates, begin to measure and cut components and use simple fixing materials e.g. paperclips, glue and tape **Evaluate** Investigate what products are, what they are made for and what materials they are made from Talk about their design ideas and what they are making Suggest how their final product could be improved at a basic level **Technical Knowledge** Understand about the movement of simple mechanisms (levers and sliders) Begin to know ways to make structures stronger and more stable Design and make a free standing structure **Cooking and Nutrition** Know where food comes from Prepare simple dishes safely and hygienically (without using heat sources) Use techniques such as cutting and mixing
Year 2	**Topic Title** Transport (axles and wheels) **Links to NC** Design functional, purposeful products Select from a range of tools Evaluate their own ideas Explore and use mechanisms such as axles **Key Knowledge & Vocabulary** Axle, wheel, chassis, mechanism, attach, moving parts	**Topic Title** Around the World (cooking and Nutrition) **Links to NC** Generate and draw out their own ideas Select their own ingredients Explore and evaluate existing products **Key Knowledge & Vocabulary** Cut, chop, slice, mix, purposeful, spread, decorate	**Topic Title** Houses and Homes (Textiles) **Links to NC** Design appealing products Use a range of materials including textiles Explore a range of existing products Evaluate own product **Key Knowledge & Vocabulary** Textiles, materials, attach, running stitch, template, accurate, fabric, knot, pouch, sew, shape, stencil	**Adaptations and Experiences** In Y2 the children are shown how close factories are which design and make vehicles using Google Earth. They are also shown a virtual tour of inside the Birmingham Landrover through Youtube. We want children to be exposed to as many different careers as possible from a young age. In Y2 we visit Avon Croft Museum of bulding and learn all about structures and how houses used to be built.

	Sequence of Lessons **Design and produce a vehicle including moving parts** L.O. I am learning to investigate moving parts of vehicles including axles and wheels L.O. I am learning to explore and evaluate existing vehicles considering who is the intended user L.O. I am learning to generate my own ideas when designing a vehicle L.O. I am learning to use and select from a range of tools including hacksaws, bench hooks and masking tape to join and assemble L.O. I am learning to build a vehicle safely, exploring how to make it stronger L.O. I can suggest improvements to my vehicle **How does it link to previous learning?** In Y1 children are taught about levers and sliders and axles and wheels will develop their technical understanding further of joining materials and making products move	**Sequence of Lessons** **Design and make a healthy picnic including pizza** L.O. I am learning to refine my skills of chopping, slicing and peeling to make a pizza L.O. I can weigh the amount of toppings needed using balancing scales L.O. I can name and identify foods within the 5 food groups (linked to Science) L.O. I am learning to identify different foods and talk about if they are healthy **How does this link build on previous learning?** Cutting, chopping, spreading, slicing is taught in Y1. The children develop this by generating their own ideas of what to cut, slice, chop in a pizza and begin to use a heat source with the aid of a teacher The children have been taught in Science about healthy eating and use the knowledge to design a healthy picnic	**Sequence of Lessons -** **Design and produce pouch** (linked to Kapow Y2) L.O. I am learning to use a running stitch L.O. I can generate my own ideas for a pouch L.O. I can select from a range of materials, fabrics and threads L.O. I can use a pattern to measure, mark out and cut materials L.O. I can assemble and join materials using a running stitch L.O. I can use finishing techniques such as adding sequins or buttons L.O. I can talk about and make changes to my design as I make L.O. I am learning to thread a needle **How does this link build on previous learning?** Children have been taught about different paint strokes in art and will apply this knowledge when using fabric paint for finishing techniques. Children will have experiences threading beads.	We visit the Think Tank and this allows children to see design in action. They experience vehicles and how they move too. We teach Nutrition and Cooking in every year group to show the importance of a healthy diet and the need to cook fresh, healthy food. **Curriculum Links:** **RE:** make a diva for diwali. Making Chinese lanterns/ dragons **Geography:** Transport and Houses and Homes **Science:** Healthy Diets and Nutrition **Threads** Design State the purpose of design and intended user Generate own ideas for design by drawing on own experiences and reading Make Select from a range of materials and components according to their characteristics Follow procedures safely Use and make own templates Measure, mark out, cut and shape materials Assemble, join and combine materials Use temporary and permanent fixings e.g. paperclips, tape, glue, staples Use finishing techniques to products Evaluate

				Investigate what products are already out, who they are intended for, how they are made and what materials are used Talk about and make simple judgements about their product against design criteria Suggest improvements to their product Evaluate the products and materials used **Technical Knowledge** Understand about the simple working characteristics of materials and components Understand about the movement of simple mechanisms including wheels and axles Know the correct technical vocabulary for the projects that they are undertaking **Cooking and Nutrition** Use appropriate equipment to weigh and measure ingredients Name and sort foods into five food groups and everyone should have 5 portions of fruit and vegetables a day Prepare simple dishes safely and hygienically
Year 3	**Topic Title** Italy and the Romans (Levers and Linkages/ pneumatic systems) **Links to NC** Investigate and analyse a range of existing products. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. generate, develop, model and communicate their ideas through discussion and annotated sketches.	**Topic Title** Stone Age (textiles- Stoneage cushion) **Links to NC** Investigate and analyse a range of existing products. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. generate, develop, model and communicate their ideas through discussion and annotated sketches.	**Topic Title** Field to fork (cooking and nutrition) **Links to NC** Understand and apply the principles of a healthy and varied diet. Cook a range of savoury dishes so that they can feed themselves and others a healthy and varied diet. Become competent in a range of cooking techniques.	**Adaptations and Experiences** In Y3 we invite a real Roman Soldier into school and the children learn about their weapons and the history of Rome in a really fun way. The children are taken to experience Den Building at Sarehole Mill, where they revisit strengthening structures taught in Y1 We teach Nutrition and Cooking in every year group to show the importance of a healthy diet and the need to cook fresh, healthy food.

	Select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials and textiles, according to their functional properties and aesthetic qualities. Understand and use mechanical systems in their products. Apply understanding of how to strengthen, stiffen and reinforce more complex structures. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. **Key Knowledge & Vocabulary** Exploded diagram, function, input, linkages, mechanism, output, net, pivot, pneumatic system, thumbnail sketch **Sequence of Lessons** **LEVERS AND LINKAGES: I can create a pneumatic toy (Kapow K3)** L.O. I am learning to investigate other products which use pneumatic systems LO: I know that mechamisms work together to create motion L.O. I am learning to develop design criteria from a design brief	Select from and use a wider range of tools and equipment to perform practical tasks accurately. Select from and use a wider range of materials and components, including construction materials and textiles, according to their functional properties and aesthetic qualities. Apply understanding of how to strengthen, stiffen and reinforce more complex structures. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. **Key Knowledge & Vocabulary** investigate, textile, material, needle, thread, sew, running stich, finishing knot, evaluate **Sequence of Lessons** **3D TEXTILE PRODUCT: I can create a Stone Age design on a cushion (see Y3 Kapow)** L.O. I am learning to investigate cushions by considering how they are made and what materials are used L.O. I can generate my own ideas for a cushion investigating which materials is best for the purpose L.O. I am learning to cross stitch	Understand the source, seasonality and characteristics of a broad range of ingredients. **Key Knowledge & Vocabulary** balanced diet, carbohydrates, protein, fruit and vegetables, dairy, fats, chop, mix, slice, grate, weigh, pour **Sequence of Lessons** L.O. I can explain what different types of nutrients humans need. L.O. I can identify which nutrient group food belongs to and design a balanced meal. L.O. I know which foods are seasonal in the UK L.O. I can measure using grams to make a traditional British fruit crumble	In Y3 we introduce real life fashion designers during the Spring term and show the children Youtube videos of catwalks and how designing clothing and home furnishings is very important. **Curriculum Links:** **RE** – Hinduism – making and decorating Diwali lamps. **Inspire:** Designing and making Christmas card and calendars. Threads Design Use research and design criteria to inform the design of a functional, appealing product that is fit for purpose Generate and develop their ideas through discussion and annotated sketches Make Select tools and equipment suitable for the task and explain why they have chosen these tools Follow procedures for safety Mark, measure, cut and shape materials and components with some accuracy

	I am learning to draw an annotated sketch, thumbnail sketches or annotated diagrams L.O. I am learning to mark, measure, cut and shape my card L.O. I am learning to assemble and join the card so that it moves accurately L.O. I am learning to consider the views of others to refine my product **How does this link build on previous learning?** Y1: identify sliders and levers within books with moving parts, cut levers and sliders which will move and say what I like and dislike about my moving picture. In Y2 children learn how to move vehicles with axles and wheels.	L.O. I can use a pattern to measure, mark out and cut materials LO: I am learning applique technique L.O. I can assemble and join materials using a running stitch and finishing knot. L.O. I am learning to use a paper template L.O. I can use finishing techniques such as paint and attaching buttons, beads or fringe. L.O. I can talk about and make changes to my design as I make. **How does this link build on previous learning?** Y2: in Y2 the children will have been introduced to the running stitch and this topic follows on with cross stitch and applique techniques	L.O. I follow a recipe to make a rice dish safely and hygienically **How does this link build on previous learning?** Y2: refine skills of chopping, slicing and peeling, weigh using balancing scales and identify foods within the 5 food groups	Assemble and join materials with some accuracy and begin to use finishing techniques Evaluate Investigate how well other products have been made and designed and why certain materials were used Identify the strengths and weaknesses of their product and consider the views of others Technical Knowledge Understand how levers or linkages create movement Understand how to make strong, stiff shell structures Know that a single fabric shape can be used to make a 3D textile product Know how to prepare and cook dishes safely and hygienically including heat sources Measure using grams Follow a recipe
Year 4	**Topic Title** Rainforests- (making a pavillion based on endangered rainforest animals- linked to Kapow) **Links to NC** Design purposeful, functional, appealing products for themselves and other users based on design criteria Produce a plan and explain it Evaluate products for their purpose and appearance	**Topic Title** Ancient Greece- (making the best biscuits- linked to Kapow) **Links to NC** Use research and develop design criteria to inform the design of appealing products that are fit for purpose Generate, develop, model and communicate their ideas through talking, drawing and templates	**Topic Title** Electricity (science)-(Linked to Kapow-making a torch) **Links to NC** Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded	**Adaptations and Experiences** During our Rainforest topic we visit Cadburies World. The children are taught about the history of Chocolate, how it is make and packaging. This experience opens up the children's minds even more about careers and how products are actually produced. We allow parents to be involved in our designs during INSPIRE workshops where we design and create masks We teach Nutrition and Cooking in every year group to show the importance of a

	Present a product in an interesting way Be both hygienic and safe when using food **Key Knowledge & Vocabulary** **Sequence of Lessons** Pavillion, structure, cladding, LO I am learning that different materials create different effects LO: I can explore and make different frame structures LO: To design a structure that is stable and aesthetically pleasing LO I am learning to evaluate existing products and shell structures LO I am learning to produce an annotated sketch and a net of my product LO: I am learning to draw and label a plan on a base board LO I am learning to assemble, join and combine and add finishing touches	Select from and use a wide range of materials and components, including ingredients, according to their characteristics Use ideas from other people when they are designing Produce a plan and explain it Evaluate and suggest improvements for their designs Persevere and adapt their work when their original ideas do not work **Key Knowledge & Vocabulary** Recipe, adapt, budget, equipment, evaluation, equipment, net, evaluation, **Sequence of Lessons** LO I am learning to research and taste different biscuits and try to identify ingredients LO I am learning to use a range of techniques and processes to measure in grams and mix ingredients LO: I am learning to adapt a recipe according to my prototype LO I am learning to evaluate the strengths and weaknesses of my biscuit and consider the views of others when they taste it.	diagrams, prototypes, pattern pieces and computer-aided design Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work **Key Knowledge & Vocabulary** design, create, evaluate, improve, materials, tools, technique, join, bulb, battery, circuit, **Sequence of Lessons** LO I am researching how simple electrical circuits and components can be used to create functional products. LO I am investigating how different switches and casing materials and joining techniques that could be used to create a torch LO I am designing my own torch and considering its purpose using annotated sketches and cross-sectional diagrams LO I am learning to use a wider range of tools safely to assemble, join and combine materials and components with growing accuracy and apply a range of finishing techniques with some accuracy	healthy diet and the need to cook fresh, healthy food. In Y4 we do lots of work with charities including a McMillan Coffee morning. The children get to make their own biscuits and cakes during DT to sell for charilty. **Curriculum Links:** **Autumn** Visit to Cadbury world to see how chocolate is made- we link this to our budgetting and packaging chalenges in Spring term History Learn about the Mayans and the importance of chocolate Maths Making shapes form a net- we introduce nets of different chocolate bars and get the children to produce their own **Spring** INSPIRE workshop making mod roc masks of mythical creatures History Learning about the role of bread, growing crops and baking in Greek society **Summer** Electricity topic in Science Threads Design Use research and develop design criteria to inform the design of functional, appealing

	LO I am learning to identify the strengths and weaknesses and improve my work from these **How does this link build on previous learning?** Y3: Children have been taught to assemble and join materials with some accuracy and begin to use finishing techniques. They have begun to evaluate their work and discuss its strengths and weaknesses.	**How does this link build on previous learning?** Y1 and 2: Children have been taught cutting chopping and slicing techniques Y3: children have been taught how to prepare and cook dishes safely and hygienically including heat sources and measure using grams and how to follow a recipe. They have begun to evaluate their work and discuss its strengths and weaknesses.	LO I am learning to identify the strengths and weaknesses of my ideas and consider the views of others, included intended users in order to improve my work **How does this link build on previous learning?** Y3: Children have previously been taught to research and generate their own ideas. They have been taught to follow procedures for safety to mark, measure, cut and shape materials and components with some accuracy Assemble and join materials with some accuracy and begin to use finishing techniques when making a bag and a picture book. They have begun to evaluate their work and discuss its strengths and weaknesses. The children are learning about Electricity in Y4 Science and we find that our children learn better when there are links to other areas of the curriculum. Electricity is then consolidated in Upper KS2.	products that are fit for purpose and are aimed at particular individuals Generate, develop and communicate ideas through discussion, annotated sketches and cross-sectional diagrams Make Measure, mark out, cut and shape materials and components building on accuracy. Use a wider range of tools and materials and follow procedures taught safely Assemble, join and combine materials and components with growing accuracy and apply a range of finishing techniques with some accuracy Evaluate Identify the strengths and weaknesses of their ideas and products and consider the views of others included intended users in order to improve their work Investigate who designed and made products, where they were designed and made and if they can be recycled or reused Understand how simple electrical circuits and components can be used to create functional products Understand how to make strong stiff shell structures Understand how to program a computer to control their products

				Know how to use a range of techniques such as peeling, chopping, slicing, grating, kneading, mixing and spreading. Measure using grams Follow a recipe to prepare and cook dishes including heat sources
Year 5	**Topic Title** Pop-up book using levers, sliders, pivots and folds (based on space) **Links to NC** Come up with a range of ideas after collecting information from different sources Produce a detailed, step-by-step plan Suggest alternative plans; outlining the positive features and draw backs Explain how a product will appeal to a specific audience Evaluate appearance and function against original criteria Use a range of tools and equipment competently Make a prototype before making a final version **Key Knowledge & Vocabulary** Aesthetic, CAD, Caption, design brief, design criteria, function, input **Sequence of Lessons**	**Topic Title** Shaduf using a frame structure **Links to NC** Come up with a range of ideas after collecting information from different sources Produce a detailed, step-by-step plan Suggest alternative plans; outlining the positive features and draw backs Explain how a product will appeal to a specific audience Evaluate appearance and function against original criteria Use a range of tools and equipment competently Make a prototype before making a final version **Key Knowledge & Vocabulary** Shaduf, lever, Nile, crossbeam, counterweight, counteract, irrigation, structure, stability, tripod **Sequence of Lessons**	**Topic Title** What could be healthier? (cooking and nutrition) **Links to NC** Know that recipes can be adapted to change the appearance and taste Know that different foods contain different nutrients Measure accurately **Key Knowledge & Vocabulary** Measure, grams, kilograms, heat, flame, healthy, nutrients, sieve, culinder **Sequence of Lessons**	**Adaptations and Experiences** We teach Nutrition and Cooking in every year group to show the importance of a healthy diet and the need to cook fresh, healthy food. In Y5 we visit Jodrell Bank, during this time we teach the children about design when looking at Space aircraft and how mechanisms move- it really brings the topic to life. **Autumn** Science – Space Inspire/ Homework- creating a mobile solar system. Jodrell Bank Trip- Designing a landing probe **Spring** History – Egyptian objects Inspire/homework Canopic jars Model pyramids History- Crime and punishment Models of punishment items **Summer**

	L.O. I am learning that input and motion are used to start a mechanism L.O. I am learning to investigate how levers, sliders and pivots work L.O. I am learning to draw an exploded diagram L.O. I am learning to accurately assemble and join parts making corners stronger L.O. I am learning to measure mark and cut wood L.O. I am learning to use finishing touches to make my product look aesthetically pleasing L.O. I am learning to critically evaluate the quality of my card and say why parts didn't work and what I did to improve it **How does this link build on previous learning?** Y1: Levers and Sliders Y2: Axles and Wheels Y3: Levers and leverages Y4: Circuits	L.O. I am learning to research how I will create my own Shaduf, and create a specification to guide my thinking L.O. I am learning to create a prototype of my design and make adjustments to my plan. L.O. I am learning to make a small scale shell structure of my Shaduf L.O. I am learning to accurately measure, mark out, cut and combine materials L.O. I am learning to evaluate my design against the original criteria. **How does this link build on previous learning?** Y2: combine materials with temporary and permanent fixtures Y4: Strengthen structures	L.O. I know how different meats are farmed L.O. I can compare the nutrients in bolognase sauces L.O. I can design a meal which considers how healthy it will be L.O. I know that dishes can be adapted to change their appearance L.O. I can measure accurately using scales to create my fish dish. **How does this link build on previous learning?** Cooking and Nutrition is taught in every year group. In Y5, we introduce the use of measuring accurately and seasoning dishes	Geography - Rivers and coasts Inspire/ Homework Model aquariums. Threads **Design** Carry out through own research, using surveys and web-based resources and design a specification to guide their thinking Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams and computer aided design Develop prototypes **Make** Follow procedures safely Accurately measure to the nearest mm, mark out, cut and shape materials and components Accurately assemble, join and combine materials and components. Accurately apply a range of finishing techniques Use techniques that require more than one step **Evaluate** Investigate how well products achieve their purpose Critically evaluate the quality of design and manufacture as they design and make Use research of designers to influence their own work **Technical Knowledge** Understand how cams, pullies and gears create movement Understand how to program a computer to control their product

				KNow how to reinforce/ strengthen a frame structure Understand and use pulleys and gears **Cooking and Nutrition** Know that recipes can be adapted to change the appearance and taste Know that different foods contain different nutrients Measure accurately
Year 6	**Topic Title** Vikings vs Anglo Saxons (Textiles- link to Kapow waistcoats for ideas) **Links to NC** Use research and develop design criteria Generate and communicate ideas Create pattern pieces and prototypes Select from a wide range of tools including textiles Cut, shape and finish accurately Investigate and analyse existing products Evaluate own ideas **Key Knowledge & Vocabulary** Stitch, hessian, viking boat, sew, colours, thread, needle, unpick. **Sequence of Lessons** **A Viking Tapestry – long boat scene**	**Topic Title** Extreme Earth (linked to Kapow Electronic Greeting Card) **Links to NC** Generate and develop ideas through annotated sketches Select from and use a wider range of tools Consider what is aesthetically pleasing for the given client Investigate and analyse a range of existing products Cut shape and finish Evaluate and edit own ideas Understand how individuals in design have helped to shape the world **Key Knowledge & Vocabulary** Circuit, simple, series, parallel, switch, bulb **Sequence of Lessons**	**Topic Title** What was Life like for Children in WW2? **Links to NC** Know that different foods contain different substances- nutrients, water and fibre- that are needed for health Understand the need for the correct storage of food Measure accurately working out ratios in recipes **Key Knowledge & Vocabulary** Ingredients, carbohydrates, protein, vegetables, mutton, chop, mix, slice, weigh, pour, boil, simmer, reared, processed. Anderson shelter, corrugated, structure, arch, reinforce, materials **Sequence of Lessons** **War-time soup -**	**Adaptations and Experiences** In Y6 we let children experience WW2 on a trip to Cannock Chase, during this experience they are able to see real artifacts and products that were produced during the war. They are also able to learn about rationing and this links nicely to the Food and Nutrition taught in Y6 In Y6 we show children clips of manufacturing of different clothing and we compare what it looks like in the UK to other countries. In Y6 the children design and create a piece of legacy art which is displayed to remember the year that has moved on to Secondary School. This has included a tapestry for the school piano covering. We teach Nutrition and Cooking in every year group to show the importance of a healthy diet and the need to cook fresh, healthy food. Threads Design Carry out research, using surveys, interviews, questionnaires and web-based resources Generate innovative ideas, drawing on research and make design decisions taking into account constraints such as time, resources and cost. Also considering the

	L.O. I am learning to evaluate products which have been made by combining materials L.O. I am learning to investigate and practise different stiches L.O. I am learning to draw an annotated sketch of my design including the needs and wants of my intended individual, how to strengthen my product and the stitches I will use L.O. I am learning to make a 2D paper pattern and use it to pin, measure and cut material L.O. I can use sewing techniques to make a seam and add fastening such as buttons or a zip L.O. I am learning to use embroidery as a finishing technique (VIking Tapestry) L.O. I am learning to compare my product to my original design **How does this link build on previous learning?** Textiles in y3 (Stone age bag)	L.O. I am learning to investigate simple, series and parallel circuits L.O. I am learning to investigate products which are already made that use circuits L.O. I am learning to use circuit diagrams within my design L.O. I can design a greetings card based on the topic of mountains L.O. I am able to make an electronic greeting card L.O. I am able to identify the positive and negative legs of a bulb L.O. I am able to critically evaluate how successful my product is taking into account what others say **How does this link build on previous learning?** Circuits in Y4	**L.O. I can prepare and cook a savoury dish using a range of cooking techniques.** **L.O. I understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.** **L.O. I know that different foods contain different substances- nutrients, water and fibre- that are needed for health** **L.O. I understand the need for the correct storage of food** **L.O. I can measure accurately working out ratios in recipes** **How does this link build on previous learning?** Previous food topics – Field to Fork in Year 3, Making Chocolate in Year 4 and Fish Dish in Year 5.	needs, wants, preferences and values of their selected individuals or groups. Develop prototypes Make Follow procedures safely Accurately measure to the nearest mm, mark out, cut and shape materials and components Accurately assemble, join and combine materials and components Accurately apply a range of finishing techniques Use techniques which require a number of steps Demonstrate resourcefulness e.g. make refinements Evaluate Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Compare their ideas and products to their original design specification Investigate how much products cost to make, how innovative they are and how sustainable the materials in products are Technical understanding Understand how more complex electrical circuits and components can be used to create functional products Know that a 3D textiles product can be made from a combination of fabrics Cooking

				Know that different foods contain different substances- nutrients, water and fibre- that are needed for health Understand the need for the correct storage of food Measure accurately working out ratios in recipes

Development since previous inspection: • Staff training • New resources • Changes • Arts mark
