# Design and Technology Long Term Plan

| | Autumn | | Spring | | Summer | |
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| **EYFS Nursery** | **Once Upon a Time**<br>**Cooking – make cakes** | **Walking through the zoo Christmas**<br>**Create a class book – Dear Zoo. Using flaps as mechanisms** | **Travel through London**<br>**Collaborative build – make a bus** | **Are We there yet?**<br>Investigate and explore different materials to make a boat to carry the penguin across the water. | **How does your garden grow?**<br>**Try and evaluate different exotic fruits with different textures**<br>**Design a fruit kebab** | **We could be Heroes**<br>**Textiles – Make superhero capes** |
| | Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. (0-3). Use their imagination as they consider what they can do with different materials. (0-3). Make simple models which express their ideas. (0-3)<br>Explore different materials freely, to develop their ideas about how to use them and what to make. (3-4). Develop their own ideas and then decide which materials to use to express them. (3-4). Join different materials and explore different textures. (3-4)<br>**Junk modelling, block area and Duplo always available in continuous provision** | | | | | |
| **EYFS Reception** | **Once Upon a Time**<br>**Create fairytale stick puppets to retell a story. (cutting and shaping, joining materials)**<br>**Cooking - Make gingerbread people.** | **Walking through the zoo**<br>**Build a zoo with different structures for the animals (thinking carefully about what the animals will need in their enclosures)** | **Travel through London**<br>**Investigate wheels and axels (have different toy vehicles for the children to look at and investigate how the wheels work.)** | **Are We there yet?**<br>**Make a split pin hatchling. (cutting and shaping, joining materials)** | **A gardener's World**<br>**Collaborative build – create a den/cave for silly doggy to sleep in.**<br>**Evaluate and make improvements** | **We could be Heroes**<br>**Cooking – make bread. Evaluate**<br>**Design and build a trap for the evil pea (junk modelling, mechanisms)** |
| | **Return to and build on previous learning, refining ideas and developing their ability to represent them.(Reception)**<br>**Create collaboratively sharing ideas and resources. (Reception)**<br>**Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.(ELG)**<br>**Share their creations explaining the processes used. (ELG)**<br>**Junk modelling, block area and Duplo always available in continuous provision** | | | | | |

| KS1 | Autumn | Spring | Summer |
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| Year 1/2 A | **JOURNEY: FOOD**<br><br>**Explore which foods come from farms and which come from animals.** | **OUR LOCAL HEROES: Create a coat of arms for the local heroes.** | **GREAT EXPLORERS: Make a boat for an explorer** |
| | Understand where food comes from.<br><br>Make butter | Generate, develop, model and communicate their ideas through talking and drawing a design.<br><br>Make a template.<br><br>Make - Select from and use a wide range of, textiles according to their characteristics<br><br>Develop sewing skills over time – create samples on scrap textiles to practise and develop sewing skills – running stitch.<br><br>Use a running stitch to join textiles in the finished product.<br><br>**Evaluate the finished product** | Research waterproof materials and explore floating/sinking<br><br>Design a boat<br><br>Make - Select from and use a range of tools and equipment to perform practical tasks |
| Year 1/2 B | **BONFIRE NIGHT AND THE GREAT FIRE OF LONDON**<br>**Make a pull along vehicle with wheels.** | **WHERE DO OUR FAVOURITE ANIMALS LIVE?: Create a healthy meal over an open fire.** | **HOLIDAYS: Create a seaside puppet using a lever or slider mechanism.** |
| | Review and build on previous learning (from /reception) on wheels and axles. Develop existing knowledge and vocabulary by investigating a range of existing wheeled toys and products.<br><br>Design a purposeful, functional, appealing products for themselves or other users based on design criteria.<br><br>Make – a basic prototype<br><br>Make finished product -Select from and use a range of tools and equipment to perform practical tasks**.**<br><br>Explore and use mechanisms (wheels and axels), in their products.<br><br>**Evaluate as an iterative process – return to design and build to make evaluations and amendments as you go along.** | **Research/investigate/review prior learning – what makes a healthy diet/ balanced meal? Understand where food comes from.**<br><br>**Explore how different foods cook over an open fire by cooking and tasting them.**<br><br>**Design a well-balanced meal where at least one aspect is to be cooked over an open fire.**<br><br>**Cook the meal.**<br><br>**Evaluate finished dish.** | Research/explore existing toys and products that use a range of different mechanisms (sliders/ levers/pulleys)<br><br>Design a purposeful, functional, appealing seaside puppet to a given criteria.<br><br>Create a mock-up of design including mechanism<br><br>Evaluate design and mechanism and make changes to design as necessary.<br><br>Select from and use a wide range of materials and components, according to their characteristics to create a final product. .<br>Explore and use mechanisms (sliders/levers), in their products. |
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| LKS2 | Autumn Term | Spring Term | Summer Term |
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| Year ¾<br><br>ROUTE A | THE STONE AGE: Invention | COASTS: Create a Seaside picnic | WHAT HAPPENED WHEN THE ROMANS CAME TO BRITAIN? Create your own Roman Catapult |
| | Research life in the Stone Age.<br><br>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose and aimed at particular individuals.<br><br>Share ideas during class discussion.<br><br>Create own design criteria<br><br>Create an annotated design for an innovative product that would help in the palaeolithic era. | Research and understand where a variety of ingredients are grown, reared, caught and processed.<br>I can understand what makes a healthy and varied diet.<br>Design and make a seaside picnic, applying the principles of a healthy and varied diet, that includes both hot (eg. sausage rolls, mini pizzas) and cold food (eg. sandwiches, fruit salad).<br><br>Evaluate and talk about any changes you may make next time. | Look at a range of exploded diagrams of roman catapults to understand how they work.<br>investigate how levers work by exploring existing products that contain levers (eg light switches, scissors, pliars, hole punches, staplers, wheelbarrow, bottle openers, seesaws)<br><br>Design catapult by selecting appropriate materials depending upon their functional characteristics.<br><br>Design and make a roman catapult the operates via a lever mechanism (select tools and materials to perform practical tasks and select from and use a wider range of materials.<br><br>Test catapult and make any necessary changes to ensure its functionality. |
| Year ¾<br><br>ROUTE B | HOW MUCH DID THE ANCIENT EGYPTIANS ACHIEVE? Create a banner using Images and hieroglyphics | HOW HAS CRIME AND PUNISHMENT CHANGED OVER TIME? Create an alarm to protect an important item | WHY SHOULD WE PRESERVE OUR LOCALITY? Create your own castle |
| | Investigate the use of hieroglyphics and their purpose.<br><br>Design banner<br><br>Practise different sewing techniques and how to attach different pieces of material.<br><br>Create a banner using images and hieroglyphics<br><br>Evaluate against their design criteria. | Research the use of alarms – what would it need to include?<br><br>Evaluate everyone's ideas through class discussion and decide on common areas. Consider the views of each other to adapt and improve existing designs.<br><br>Understand and use electrical systems in their products (alarm) | Research Beeston castle.<br>Using information found, design own castle by annotated sketching or CAD.<br><br>Make own castle – select materials and components according to their functional and aesthetic qualities.<br><br>Apply their understanding of how to stiffen and reinforce more complex structures. |

| USK2 | Autumn | Spring | Summer |
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| **Year 5/6**<br><br>**Route A** | **WHY WAS THE ANGLO-SAXON PERIOD REALLY A DARK AGE? Create an Anglo-Saxon long boat** | **THE VIKINGS: Create own Viking broach using textiles and cross-stitch patterns** | **WHAT MAKES PEOPLE GO ON A JOURNEY? Create your own "healthy" MacDonalds** |
| | Research anglosaxon longboats – what did they look like, what were they used for?<br><br>Investigate pulleys – understand how pulleys work.<br><br>Design own longboat using annotated sketches and cross-sectional diagrams. Include a sail that is controlled by a pulley.<br><br>Make - Select from and use a wider range of materials and components, including construction materials and textiles according to their functional properties and aesthetic qualities.<br>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.for the mast<br><br>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. | Research viking broaches.<br><br>Design your own viking broach using Vector drawing (CAD)<br><br>Rehearse using a pattern piece.<br><br>Make own Viking broach using textiles and cross-stitch patterns.<br><br>Evaluate their product | Evaluate a range of existing "fast food" products (burgers) for taste, cost and fat content.<br><br>Apply the principles of a healthy and varied diet to design a healthier (lower-fat) alternative burger.<br><br>Competently cook my own burger and can make my own burger bun. |

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| **Year 5/6**<br><br>**ROUTE B** | **WHY SHOULD WE REMEMBER THE MAYA? Create your own mayan weaving**<br><br>Research and design how Mayan's used weavings and textiles.<br><br>Learn how to weave on a loom.<br><br>Create own Mayan weaving selecting from a wide range of textiles. Return to the weaving over time so skills are practised and developed.<br><br>Apply skills and learning to create a weaving using recyclable materials (bike wheels, baskets, colanders). | **WHAT DID THE GREEKS DO FOR US? Cook a repertoire of savoury greek dishes**<br><br>Research a chef who has developed healthy eating menus.<br><br>Evaluate existing Greek food by tasting<br><br>Design their own healthy Greek dish by applying the principles of a healthy and varied diet.<br><br>Understand the source, seasonality and characteristics of a broad range of ingredients.<br><br>Make your own dish<br><br>Evaluate your dish. | **ARE WE DAMAGING OUR WORLD? Create your own reading lamp**<br><br>Research Thomas Edison and how he and his fellow scientists invention of the light bulb changed the world.<br><br>Design your own reading lamp, using a lever and a switch and bulb.<br><br>Create your own reading lamp, using a lever and a switch and bulb.<br><br>Apply understanding of computing to programme, monitor and control their products.<br><br>Evaluate their product against their design criteria. |