Our Lady of Lourdes Skills, Knowledge and Vocabulary Progression Map showing Interleaving – Design and Technology

What is our Curriculum Intent for this subject?

Live: *Design and Technology is an inspiring and practical subject requiring precision and meticulous attention to detail. At Our Lady of Lourdes, we enable children to develop the creative, technical and practical expertise needed to perform everyday tasks confidently and successfully.*

Love: *It is our intention for children at Our Lady of Lourdes School to develop an interest and love of design and technology through theme learning, ensuring that links are made in a cross curricular way, giving children motivation and meaning for their learning.*

Learn: *D&T skills are taught progressively to ensure that all children can learn and practice in order to develop as they move through the school. To design and make a product, children are encouraged and taught to combine their designing and making skills with knowledge and understanding learned in other subjects, particularly Maths, Science, Computing and Art. 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.*

Skills Progression:

Cohort	Autumn	Spring	Summer
	Construction/textiles	**Mechanisms**	**Nutrition and cooking** Understanding food and food preparation Food preparation, cooking and nutrition
Year 1	**DESIGN** • Design purposeful, functional, appealing products based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and ICT and, where appropriate, information and communication technology **MAKE** • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] • Select from and use a wide range of materials and components, including construction materials, textiles, ingredients according to their characteristics	**DESIGN** • Design purposeful, functional, appealing products based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and ICT and, where appropriate, information and communication technology **TECHNICAL KNOWLEDGE** • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	**Across KS1** Understand that food comes from plants or animals Understand that food has to be farmed, caught, or grown Sort foods into the 5 groups using The Eatwell Plate Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely without a heat source Use cooking techniques such as: cutting, peeling and grating
Year 1 GD	*Develop their design ideas through discussion, observation, drawing and modelling.*	*Explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.*	*Begin to develop and understanding of where different foods come from (e.g. foods which are farmed, grown elsewhere (e.g. home) or caught) and also food from native to different countries*

			Begin to widen and use a variety of cooking techniques such as: cutting, peeling, grating, chopping and slicing
	Construction/ Textiles	**Mechanisms**	**Nutrition and cooking** Understanding food and food preparation Food preparation, cooking and nutrition
Year 2	**DESIGN** • Design purposeful, functional, appealing products based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and ICT and, where appropriate, information and communication technology **MAKE** • Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] • Select from and use a wide range of materials and components, including construction materials, textiles, ingredients according to their characteristics	**DESIGN** • Design purposeful, functional, appealing products based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and ICT and, where appropriate, information and communication technology **TECHNICAL KNOWLEDGE** • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products	**Across KS1** Understand that food comes from plants or animals Understand that food has to be farmed, caught, or grown Sort foods into the 5 groups using The Eatwell Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely without a heat source Use cooking techniques such as: cutting, peeling and grating
Year 2 GD	*Show skills in regard to detail and explanation of design, more precise in finishing and evaluating end products*.	*Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]* *Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors*	*Show an awareness that food is **grown** (such as tomatoes, wheat, and potatoes) **reared** (pigs, chicken and cattle, and **caught** (fish)in the UK, Europe and the wider world.* *Continue to widen and use a variety of cooking techniques such as: cutting, peeling, grating, chopping, slicing, mixing, spreading, kneading and baking*
	Construction/ Textiles	**Mechanisms**	**Nutrition and Cooking** Understanding food and food preparation Food preparation, cooking and nutrition

Year 3	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **MAKE** • 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.	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **TECHNICAL** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control products.	**Lower KS2** Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that recipes can be changed by adding or taking away ingredients Understand that the seasons can affect food produce **Lower KS2** Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet Identify that food and drink are needed to provide energy for a healthy and active lifestyle Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely, where needed with a heat source Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking
Year 3 GD	*To justify their design criteria.* *To consider availability of resources when designing their product.* *To explain the reasons for ordering the steps of work.*	*Apply their understanding of computing to program, monitor and control products.*	*Become familiar with some of the processes that foods go through to preserve them/ make them more appealing.* *Understand how to prepare and cook a variety of predominantly savoury dishes including experience of using a heat source.*
	Construction/ Textiles	**Mechanisms**	**Nutrition and cooking** Understanding food and food preparation Food preparation, cooking and nutrition

Year 4	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **MAKE** • 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.	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **TECHNICAL** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control products.	**Lower KS2** Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that recipes can be changed by adding or taking away ingredients Understand that the seasons can affect food produce Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet Identify that food and drink are needed to provide energy for a healthy and active lifestyle Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely, where needed with a heat source Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking
Year 4 GD	*To justify their design criteria in relation to the intended user.* *To contribute to a detailed step-by-step plan.*	*Demonstrate behaviours: using tools more efficiently, confidently and appropriately..*	*Begin to understand that different food and drink contain different substances (nutrients, water and fibre) that are needed for health* *Evaluate a meal and consider if they contribute towards a balanced diet*
	Construction/ Textiles	**Mechanisms**	**Nutrition and cooking** Understanding food and food preparation Food preparation, cooking and nutrition

Year 5	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **MAKE** • 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	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **TECHNICAL** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control products.	**Upper KS2** Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely, where needed with a heat source Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking **Upper KS2** Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that the seasons can affect food produce Understand that sometimes raw ingredients need to be processed before they can be used in cooking (eg. De - feathering a chicken) Understand that recipes can be adapted to change the appearance, taste and aroma of a dish
Year 5 GD	*Consider how time constraints would impact their design.* *Explain their choice of materials and components according to functional properties and aesthetic qualities.*	*Demonstrate behaviours: using tools more efficiently, confidently and appropriately. Being a leader of learning by coaching and guiding other learners through the processes.*	*Plan a healthy and affordable diet* *Explain how ingredients were reared, grown or caught*
	Construction/ Textiles	**Mechanisms**	**Nutrition and cooking**

			Understanding food and food preparation Food preparation, cooking and nutrition
Year 6	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **MAKE** • 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	**DESIGN** • Use research and develop 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 ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **TECHNICAL** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control products.	**Upper KS2** **Upper KS2:** Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely, where needed with a heat source Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking **Upper KS2** Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that the seasons can affect food produce Understand that sometimes raw ingredients need to be processed before they can be used in cooking (eg. De - feathering a chicken) Understand that recipes can be adapted to change the appearance, taste and aroma of a dish
Year 6 GD	*Suggest how they may need to alter their design for a different group or individual.* *Suggest alternative materials and tools that would work equally as well.* *Develop top tips for others when making their product.*	*Show skills: detail and explanation of design, more precise in finishing and evaluating end products. • Greater knowledge: explanations of how and why eg materials used • Ability to make connections and apply knowledge easily: make links to prior learning and other subjects eg nets in maths, electrical - science*	*Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]*

Vocabulary, Interleaving Opportunities and Knowledge Progression:

Year Group: Yr R

<table>
<tr><th colspan="4">REC: Autumn Term</th></tr>
<tr><td>Key Vocabulary</td><td>Interleaving
Opportunities (e.g. when past topics can be revisited)</td><td>Links to wider curriculum (e.g. different subjects or key stages)</td><td>SMSC</td></tr>
<tr><td>Equipment, tool, cut, mix, construct, manipulate, create, join, assemble, same, different, build, colour, design, model, function, keeping
safe,</td><td>30-50 months: Physical development,
Understanding the world,
Expressive arts and design.</td><td>Physical devpt –
RE- Hinduism – Divali and Christianity- Christmas
Understanding the world,
Expressive arts and design</td><td>Opportunities for social and spiritual development through cooperation, respect,and tolerance and by the use of imagination and creativity.
Moral- appreciating others’ viewpoints inrelation to preferences of art
Cultural- understanding the impact of design on communities.</td></tr>
<tr><td colspan="2">Threshold concepts

Core Knowledge

To know how to use tools and equipment appropriately and safely

To sculpt and mould to create a diva lamp using clay</td><td colspan="2">Key skills
To use one-handed tools and equipment,To use equipment and tools safely.
ELG Creating with Materials
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.</td></tr>
</table>

Rec: Spring Term			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Equipment, tool, construct, manipulate, create,join, assemble, same, different, build, colour, design, model, function	30-50 months: Physical development, Understanding of the world, Expressive arts and design .		Children's **moral** development encouraged by opportunities to see the consequences of behaviour choices and by listening tothe viewpoint of others. **Cultural** development encouraged by understanding the impact of design on communities. **Social and spiritual** development opportunities provided through cooperation, tolerance and respect.
Threshold **ConceptsCore** **Knowledge** To know how to use tools and equipment appropriately and safely		**Key skills** To use simple tools to effect changes to materials. To mix colours and create different textures. To construct with a purpose in mind, using a variety of resources. To create simple representations of events, people and objects To explore and understand how to create models out of junk modelling To follow and remember instructions To use different materials and tools appropriately. ELG Creating with Materials 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.	
Rec: Summer Term			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Equipment, tool, construct, manipulate, create join, assemble, same, different, build, colour, design, model, function	30-50 months: Physical development, Understanding the world, Expressive arts and design.	Physical devpt- gross and fine motor Maths 3D shapes Understanding the world- history of pirates	Moral - children can provide reasoned views Social - listen to others' ideas with respect Spiritual - to engage with fascination with their school community Cultural- children can explore and respond to design in their own year group

Threshold Concepts Core Knowledge To know how to create a simple representationof an object	Key skills To handle equipment and tools effectively, including pencils for writing.To safely use and explore a variety of materials, tools and techniques, To represent their own ideas, thoughts and feelings through design and technology ELG Creating with Materials 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.

Year Group: Yr 1

Y1: Autumn Term 1 and 2 construction/ textiles Design and make bunting			
Key Vocabulary Joining and finishing vocabulary (stapling, stitch,glue, sew) Names of tools (scissors, needle, template) Fabric names and components (cotton, thread) Also: template, pattern pieces, mark out, join, decorate, finish, suitable,quality, mock-up, design	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)* **Science** Investigate physical properties of fabric types against suitability for the product to be made. Use knowledge of properties of everyday materials to selectappropriate ones for their product **Spoken language** Ask questions throughout the process to check understanding, develop vocabulary and build knowledge.Listen and respond to adults. Explain and articulate theirideas orally. **Art** Use colour, pattern, texture, and shape as	**SMSC** **Social** - Children communicate and interact with others from different backgrounds. **Moral** - Children have the opportunity to offer reasoned views and appreciate those of others within the context of their behaviour and actions **Spiritual** - Children have the opportunity to engage with fascination in the world around them and to use their creativityin their learning. **Cultural** - Children have the opportunity to learn about and respect the things we share in common across all communities.

brief, design criteria, make, evaluate, user, purpose, function		appropriate. Quick drawings or detailed observational drawingsof one product to develop and share ideas. Use and develop drawing skills. **Mathematics** Measurement using non-standard and standard units.	

Threshold Concepts

Core Knowledge

Technical knowledge and understanding

To know that a 3D product is made from 2D shapesTo know what a template is

To know that fabric is joined using different techniques. runningstitch, glue, over stitch, stapling.

To know and understand technical vocabulary relevant to the project.

Key skills:

Designing

Design a functional and appealing product for a chosen user andpurpose based on simple design criteria.

Generate, develop, model and communicate their ideas as appropriatethrough talking, drawing, templates, mock-ups and information and communication technology.

Making

Select from and use a range of tools and equipment to performpractical tasks such as marking out, cutting, joining and finishing.

Select from and use textiles according to their characteristics.

Evaluating

Explore and evaluate a range of existing textile products relevant tothe project being undertaken.

Evaluate their ideas throughout and their final products againstoriginal design criteria.

Y1: Spring Term 1 and 2 Scientists and Inventors Make moving pictures using sliders, levers, pivots and wheel mechanisms

Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
	EYFS- junk modelling EYFS- pop up/ interactive picture books	English-interactive picture books Science – scientists and inventors	**Social** - Children communicate and interact with others from different backgrounds, and

slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards			develop and demonstrate attitudesthat will allow them to participate in modern life. **Moral** - Children have the opportunity to offer reasoned views and appreciate those of others within the context of their behaviour and actions **Spiritual** - Children have the opportunity to engage with fascination in the world around them and to use their creativityin their learning. **Cultural** - Children have the opportunity to learn about and respect the things we share in common across all communities.

Threshold Concepts **Core Knowledge** To know that materials need to be strengthened for construction. To understand that different mechanisms produce different types of movement. To know and use technical vocabulary relevant to the project .	**Key skills** **Designing** Explore and use sliders and levers. Generate ideas based on simple design criteria and their ownexperiences, explaining what they could make. Develop, model and communicate their ideas through talking, mock-upsand drawings. **Making** Plan by suggesting what to do next. Select and use tools, skills and techniques suitable for the task,explaining their choices. Select new and reclaimed materials according to their characteristics to create a chosen product.to create their moving pictures. structures. Use simple finishing techniques suitable for the structure they are creating. **Evaluating** Explore and evaluate a range of existing moving pictures (sliders/levers/wheels) in picture books Evaluate their product by discussing how well it works in relation tothe purpose, the user and whether it meets the original design criteria.

Y1: Summer Term 1 and 2 nutrition and cooking Design, make and evaluate fruit kebab

Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting,	EYFS- growing strawberries Healthy eating	English - Handa's Surprise Writing- instruction writing Geography- Kenya Science – where and how fruit grows	**Social** - Children communicate andinteract with others from different backgrounds. **Moral** - Children have the opportunity to offer reasoned views and appreciate those of others within the context of their behaviour and actions **Spiritual** - Children have the opportunity to engage with fascination in the world

squeezing, healthy diet, choosing, ingredients,			around them and to use their creativityin their learning. **Cultural** - Children have the opportunity to learn about andrespect the things we share incommon across all communities

Threshold Concepts **Core Knowledge** To understand where a range of fruit and vegetables come from e.g. farmed or grown at home. To understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of 'The eatwell plate'. To know and use technical and sensory vocabulary relevant to the project	**Key skills** **Designing:** Select and list which fruits to use explaining their choices **Making** Prepare fruit to skewer – peel, cut, chop. Slice Affix fruit to skewer **Evaluating** Taste, explore and evaluate a range of products to determine the intended user's preferences for the product Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose. Say what they like and do not like about their fruit kebab Begin to talk about their designs as they develop and identify good and bad points. Start to talk about changes made during the making process. Discuss how closely their finished products meet their design criteria.

Y2: Autumn Term 1 and 2 Mechanism: make a moving vehicle e.g. yellow taxi from New York,			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used	EYFS- Mobilo construction Junk modelling Yr 1- Moving pictures- sliders/levers	**Spoken language** Participate in discussion about products with moving parts, taking turns and listening to what others say. Ask relevant questions to extend their knowledge and understanding. Build technical and directionalvocabulary. Children listen and respond appropriately to adults. Use spoken language to develop understanding through imaginingand exploring ideas **Mathematics** Describe position, direction and movement. Use appropriate standard and non-standard measures **Art** Use colour, pattern, line,shape. **Computing** Digital graphics and text could be incorporated into final products as the backgroundor moving parts.	**Social** - opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. **Moral**- opportunities to understand the consequences oftheir behaviour and those of others **Spiritual** - Opportunities to use creativity and imagination in the learning and to reflect on their experiences as a designer within the context of their school community **Cultural** - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally.

Threshold Concepts **Core Knowledge** To know how to explore and use wheels, axles and axle holders. To know a wheel needs an axle in order to move. To distinguish between fixed and freely moving axles. To know and use technical vocabulary relevant to the project.	**Key skills** **Designing** Designing a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move. Creating clearly labelled drawings which illustrate movement **Making** Plan by suggesting what to do next. Select and use tools suitable for the task, explaining their choices,to cut, shape and join paper and card. Use simple finishing techniques suitable for the product they arecreating. **Evaluating** Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. Reviewing the success of a product by testing it with its intended audience Testing mechanisms, identifying what stops wheels from turning, knowing that a wheel needs an axle in order to move. Evaluate their product by discussing how well it works in relation tothe purpose and the user and whether it meets design criteria.

Y2: Spring Term 1 and 2 Textiles Chinese dragon sock puppet

Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
pattern pieces, mark out, join, finish, sew, pleat, ruffle, tear, fray, stretch, elastic decorate, finish	Reception – Summer- design and make a pirate hat Chinese New Year dragons Year 1- Design bunting	**Science** Investigate physical properties of fabric types against suitability for the product to be made. Use knowledge of properties of everyday materials to selectappropriate ones for their product **Spoken language** Ask questions throughout the process to check understanding, develop vocabulary	**Social** - opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. **Moral**- opportunities to understand the consequences oftheir behaviour and those of others **Spiritual** - Opportunities to use creativity and imagination in the learning and to reflect on their

		and build knowledge.Listen and respond to adults. Explain and articulate theirideas orally. **Geography**- China **Maths**- measures Symmetry	experiences as a designer within the context of their school community **Cultural** - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally Children have the opportunity to learn about andrespect the things we share in common across all communities.
Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** The minimum all pupils should know To know how to measure textiles To join textiles together to make a product, and explain how they did it To understand how to carefully cut textiles to produce accurate pieces To understand that a 3D textile structure can be made from two identical fabric shapes.		**Key skills** *Which can be applied once the knowledge is understood* **Designing** To have own ideas and plan what to do next To explain what I want to do and describe how I may do it To explain purpose of product, how it will work and how it will be suitable for the user To describe design using pictures, words, models, diagrams, begin to use ICT To design products for myself and others following design criteria To choose best tools and materials, and explain choices To use knowledge of existing products to produce ideas **Making** Explain what I am making and why it fits the purpose Make suggestions as to what I need to do next. Join materials/components together in different ways Measure, mark out, cut and shape materials and components, with support. Describe which tools I'm using and why Choose suitable materials and explain choices depending on characteristics. Use finishing techniques to make product look good *work safely and hygienically **Evaluating** Describe what went well, thinking about design criteria Talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion Evaluate how good existing products are Talk about what I would do differently if I were to do it again and what went well.	
Y2: Summer Term 1 and 2 nutrition and cooking Designing a healthy wrap based on a food combination which work well together			

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<tr>
<td>Names of fruit and vegetables
Names of equipment and utensils
Sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky,smooth, sharp, crisp, sour, hard
Fruit and vegetable features:flesh, skin, seed, pip, core Peeling, cut, choosing, slicing, squeezing
Other: ingredients, planning, healthy diet, investigating, tasting, arranging, popular,</td>
<td>Reception- EYFS- growing strawberries
Healthy eating

Year 1- Fruit kebabs</td>
<td>Science Understand that plants have leaves, stems, roots, flowers and fruits; understand the importance of growing plantsand how seasons affect growth.
Talk about a balanced diet, different types of food and hygiene.
Spoken language Children developand use a sensory vocabulary. They ask questions to check understanding; use the correctterminology for equipment and food processes.
Writing Develop descriptive writing based on first-hand experience of tasting fruit and vegetables. Write instructions on how to make a healthy wrap
Mathematics Carry out a simple survey to find out which are thefavourite fruits/vegetables; construct and interpret the information in e.g. pictograms and bar graphs
Art Use and develop drawing skills.
Computing Use digital photographsto help order the main stages ofmaking and support children’s writing.</td>
<td>Social - Opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life.
Moral- Opportunities to understand the consequences oftheir behaviour and those of others, and to appreciate the viewpoints of others.
Spiritual - Opportunities to use creativity and imagination in the learning, and to reflect on their experiences and personal development.
Cultural - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally</td>
</tr>
<tr>
<td colspan="2">Threshold Concepts Knowledge without which later concepts will notbe fully understood
Core Knowledge
The minimum all pupils should know</td>
<td colspan="2">Key skills
Which can be applied once the knowledge is understood</td>
</tr>
<tr>
<td colspan="2">Technical knowledge and understanding
To know that a range of fruit and vegetables come from differentplaces e.g. farmed or grown at home.</td>
<td colspan="2">Designing
Design appealing products for a particular user based on simpledesign criteria.</td>
</tr>
</table>

To know the basic principles of a healthy and varied diet in order toprepare dishes, including how fruit and vegetables are part of *The Eatwell Plate*. To know and use technical and sensory vocabulary relevant to theproject.	Generate initial ideas and design criteria through investigating avariety of fruit and vegetables. Communicate these ideas through talk and drawings. **Making** Slicing food safely using the bridge or claw grip. Constructing a wrap that meets a design brief Use simple utensils and equipment to e.g. peel, cut, slice, squeeze,grate and chop safely. Select from a range of vegetables according to their characteristics e.g. colour, texture and taste to create a chosenproduct. **Evaluating** Describing the taste, texture and smell of fruit and vegetables. Taste testing food combinations and final products. Describing the information that should be included on a label. Evaluating which grip was most effective. Evaluate ideas and finished products against design criteria,including intended user and purpose.

Year Group: Yr 3

Y3: Autumn Term 1 and 2 construction and textiles Make stone age tools or jewellery			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Plan Organise Prototype Initial ideas Criteria Diagrams Labels Annotate Brief Purpose Application Constraints Client Materials Mould liquid Solid Form Shape Adhesive Lattice Hand-made Packaging Presentation Dimensions Durable	EYFS- junk modelling Construction play Making a pirate cutlass Clay diva lamp Year2 -Chinese dragon sock puppet	**Spoken language** Developing relevant vocabulary e.g. sensorydescriptors. Ask relevant questions to extend their knowledge. **Art** Using and developing drawingskills. **History**- Stone age **English**- **Writing** Use non-fiction texts such as description, explanation and instructions **Science-** rocks and fossils	**Social** - opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. **Moral**- opportunities to understand the consequences oftheir behaviour and those of others **Spiritual** - Opportunities to use creativity and imagination in the learning **Cultural** - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally

Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** *The minimum all pupils should know*	**Key skills** Which can be applied once the knowledge is understood
Technical knowledge and understanding To know about Stone Age tools and how simple the materials were To know about Stone Age jewellery To understand how to attach materials together To know and use Stone age specific vocabulary	**Designing** Generate realistic ideas and their own design criteria throughdiscussion, focusing on the needs of the user. Use annotated sketches and prototypes to develop, model andcommunicate ideas. To select tools and techniques for making a product. To measure, mark out, cut, score and assemble components with more accuracy. **Making** Order the main stages of making. Select from and use appropriate tools with some accuracy to cut,shape and join paper, card, wood and stone Select from and use finishing techniques suitable for the productthey are creating. To work safely and accurately with a range of simple hand tools. To join and combine materials and components accurately in temporary and permanent ways. **Evaluating** Evaluate their own products and ideas against criteria and user needs, they design and make. To think about ideas as progress is made and consider how changes could be made. To use finishing techniques to strengthen and improve the appearance of a product using a range of equipment.

Y3 Spring Term 1 and 2- nutrition and cooking make a cereal bar			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	EYFS- Growing strawberries Y1- fruit kebabs Y2 - healthy wraps	**Mathematics** Mass g/ kg **Spoken language** Developing relevant vocabulary e.g. sensorydescriptors. Ask relevant questions to extend their knowledge. **Science** Use and develop skills of observing and questioning. Humans get nutrition from what they eat. Discuss changes of state if heat is used Considerand evaluate different viewpoints. Use discussion to develop understanding through exploring ideas. **Art** Using and developing drawingskills.	**Social** - opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. **Moral**- opportunities to understand the consequences oftheir behaviour and those of others **Spiritual** - Opportunities to use creativity and imagination in the learning **Cultural** - Opportunities to show respect and understanding towards all different communities locally, nationally, and globally

Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** The minimum all pupils should know	**Key skills** *Which can be applied once the knowledge is understood*
Technical knowledge and understanding Know how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Know and use relevant technical and sensory vocabulary appropriately.	**Designing** Generate and clarify ideas through discussion with peers and adultsto develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. **Making** Plan the main stages of a recipe, listing ingredients, utensils andequipment. Select and use appropriate utensils and equipment to prepare andcombine ingredients. Select from a range of ingredients to make appropriate food products,thinking about sensory characteristics. **Evaluating** Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simplegraphs. Evaluate the ongoing work and the final product with reference to thedesign criteria and the views of others .

Y3 Summer Term 1 and 2 Mechanisms – lever, linkage and pivot - Roman catapults

Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Mechanism, lever, linkage, pivot,slot, bridge, guide, system, input, process, output, linear,	EYFS- Mobilo construction Junk modelling Yr 1- Moving pictures- sliders/levers Yr 2 – NY taxis: moving vehicles	**Mathematics** Use a ruler to measure to the nearest cm,	**Social** - Opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life.

rotary, oscillating, reciprocating, user, purpose,function prototype, design criteria, innovative, appealing, designbrief		**Spoken language** Ask relevant questions to extend knowledgeand understanding. Build technical vocabulary. **Art** Use and develop drawing skills. **Writing** Write for real purposesand audiences. **History- Romans**	**Moral**- Opportunities to understand the consequences oftheir behaviour and those of others **Spiritual** - Opportunities to use creativity and imagination in their learning and to reflect upon their own development and experiences. **Cultural** - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally
Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** The minimum all pupils should know		**Key skills** *Which can be applied once the knowledge is understood*	
Technical knowledge and understanding To understand how to strengthen, stiffen and reinforce more complex structures To understand and use mechanical systems in their products To know and understand technical vocabulary relevant to the project.		**Designing** 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 diagrams, prototypes, and computer-aided design. **Making** 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, according to their functional properties and aesthetic qualities	

	Evaluating • investigate and analyse a range of existing products • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • understand how key events and individuals in design and technology have helped shape the world

Year Group: Yr 4

<table>
<tr><th colspan="4"><u>Y4 Autumn Term 1 and 2 mechanism simple series circuits</u></th></tr>
<tr><td>Key Vocabulary</td><td>Interleaving Opportunities (e.g. when past topics can be revisited)</td><td>Links to wider curriculum (e.g. different subjects or key stages)</td><td>SMSC</td></tr>
<tr><td>Series circuit, fault, connection, toggle switch, push-to-make switch, push-to-breakswitch, battery, battery holder,bulb, bulb holder, wire, insulator, conductor, crocodileclip, control, program, system, input device, output device</td><td>First time encountered</td><td>Science Know how to construct simple series circuits and havea basic understanding of conductors, insulators and openand closed switches.
Spoken language Participate in discussion and evaluation of battery-powered products. Ask relevant questions to extend knowledge and understanding. Build their technical vocabulary. Maintain attention and participate actively in collaborative conversations, staying on topic and initiatingand responding to comments.
Develop understanding through speculating, hypothesising, imagining and exploring ideas.
Computing Design, write and debug programs that accomplish specificgoals, including controlling physical systems.
Art Using and developing drawing skills.</td><td>Social - Opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life.
Moral- Opportunities to understand the consequences of their behaviour and those of others and to investigate and offer reasoned views about moral and ethical issues.
Spiritual - Opportunities to use creativity and imagination in the learning and to reflect upon their personal development.
Cultural - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally</td></tr>
<tr><td colspan="2">Threshold Concepts Knowledge without which later concepts will notbe fully understood /
Core Knowledge
The minimum all pupils should know</td><td colspan="2">Key skills
Which can be applied once the knowledge is understood</td></tr>
<tr><td colspan="2">Technical knowledge and understanding
To know that electrical systems in their products, (such as seriescircuits), incorporate switches, bulbs and buzzers.</td><td colspan="2">Designing</td></tr>
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To know that computers can program and control products	Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose,aimed at particular individuals or groups. Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectionaland exploded diagrams. **Making** Order the main stages of making. Select from and use tools and equipment to cut, shape, join andfinish with some accuracy. Select from and use materials and components, including constructionmaterials and electrical components according to their functional properties and aesthetic qualities. **Evaluating** Investigate and analyse a range of existing battery-poweredproducts. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.

Y4 Spring Term 1 and 2 construction and textiles- dragon eyes

Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Dragon eye cabochon user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated, sketch, appealing edge, face, length, width, breadth, capacity, marking out, scoring, shaping,	EYFS- Clay diva lamp Year2 -Chinese dragon sock puppet Year 3- Stone age tools and jewellery	Art-using and developing drawing skills	Social - opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. Moral- opportunities to understand the consequences oftheir behaviour and those of others Spiritual - Opportunities to use creativity and imagination in the learning Cultural - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally

		Art Investigating visual and tactile qualities of fabrics andusing colour and pattern appropriately. Use a range of tools and decorative techniques.Develop sketching techniques. **Writing** Written evaluation of their product, organising itunder headings	
Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** The minimum all pupils should know		**Key skills** Which can be applied once the knowledge is understood	
Technical knowledge and understanding To understand how to securely join two pieces of clay together To know how to use tools to cut, shape and join To know how to create different patterns Understand how key events and individuals in design technology have helped to shape the world		**Designing** Use research to develop designs Develop appealing products that are designed for a particular purpose Generate, develop and communicate ideas through discussion with others Use annotated sketches, prototypes, pattern pieces and technology to generate, develop and communicate ideas **Making** Plan the main stages of making. Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing accurately Select from and use a wide range of materials and components, including construction materials, textiles and ingredients according to their functional properties and aesthetic qualities e.g. pattern **Evaluating** Investigate and evaluate a range of existing products Evaluate their ideas and products against design criteria and seek the views of others to improve their work	
Y4 Summer Term 1 and 2 nutrition and cooking Brazilian cheese bread			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**

Healthy Unhealthy Balanced Vitamins Disease Nutrition Healthy eating Hygiene Diet Cross contamination Grams Storage Presentation Taste Texture Flavour Disinfect Bacteria combine, fold, knead	EYFS- Growing strawberries Y1- fruit kebabs Y2 - healthy wraps Y3 - cereal bar	**Geography**- South America – Brazil **Mathematics- weighing** Mass g/ kg **Spoken language** Developing relevant vocabulary e.g. sensorydescriptors. Ask relevant questions to extend their knowledge. **Science** Use and develop skills ofobserving and questioning. Humans get nutrition from what they eat. Discuss changes of state if heat is used **English** writing recipe	**Social** - opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. **Moral-** opportunities to understand the consequences oftheir behaviour and those of others **Spiritual** - Opportunities to use creativity and imagination in thelearning **Cultural** - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally

Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** The minimum all pupils should know	**Key skills** Which can be applied once the knowledge is understood
Know how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Understand and apply the principles of a healthy and varied diet Know how to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed . Know and use relevant technical and sensory vocabulary appropriately	**Designing** Generate and clarify ideas through discussion with peers and adultsto develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. select their own suitable ingredients when cooking or baking **Making** Plan the main stages of a recipe, listing ingredients, utensils andequipment. Select and use appropriate utensils and equipment to prepare andcombine ingredients. Select from a range of ingredients to make appropriate food products,thinking about sensory characteristics.

	Evaluating Carry out sensory evaluations of a variety of ingredients and products. Do they present food in an appealing way? Evaluate food by taste, texture, flavour etc Record the evaluations using e.g. tables and simplegraphs. Evaluate the ongoing work and the final product with reference to thedesign criteria and the views of others

Year Group: Yr 5

Y5 Autumn Term 1 and 2 construction and textiles- building bridges			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape,join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user,innovation, research, functional Symmetry, pattern Tubular, Pillars, Beams, gaps, span, trusses, arches, suspension,	Y4- Roman shields	**Spoken language** Ask relevant questions, formulate and expressopinions, give well-structured descriptions and explanations. Use strategies to build theirvocabulary. **Art** Use and develop drawingskills. **Computing** Use technologies for research purposes and be discerning when evaluating digital content. **Science**- compression forces	**Social** - Opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. **Moral**- Opportunities to understand the consequences of their behaviour and those of others and to offer reasoned views on moral issues that theyencounter **Spiritual** - Opportunities to use creativity and imagination in the learning and to reflect on their personal development **Cultural** - Opportunities to show respect and understanding towards

			all different communities locally, nationally and globally.
Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** The minimum all pupils should know		**Key skills** Which can be applied once the knowledge is understood	
Technical knowledge and understanding To understand how to strengthen, stiffen and reinforce 3-D frameworks. Know and use technical vocabulary relevant to the project Lo1: To explore ways in which pillars and beams are used to span gaps. Lo2: To explore ways in which trusses can be used to strengthen bridges Lo3: To explore ways in which arches are used to strengthen bridges Lo4: To understand how suspension bridges are able to span long distances Lo5: To develop criteria and design a prototype bridge for a purpose. Lo6: To analyse and evaluate products according to design criteria		**Designing** Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. Develop a simple design specification to guide the development of their ideas and products, taking account of constraints includingtime, resources and cost. Generate, develop and model innovative ideas, through discussion,prototypes and annotated sketches. **Making** Formulate a clear plan, including a step-by-step list of what needsto be done and lists of resources to be used. Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join materials to make frameworks. Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating** Investigate and evaluate a range of existing frame structures. Critically evaluate their products against their design specification, intended user and purpose, identifying strengths andareas for development, and carrying out appropriate tests. Research key events and individuals relevant to frame structures – (old clapper bridges,arches in bridges, suspension bridges, using iron and steel in bridges etc)	
Y5 Spring Term 1 Mechanisms moving toys cam mechanisms			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**

function, innovative, designspecification, design brief, user, purpose graphics, pulley, drive belt, gear, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output	EYFS- Mobilo construction Junk modelling Yr 1- Moving pictures- sliders/levers Yr 2 – NY taxis: moving vehicles Y3- roman catapults- lever, linkage, pivot Y4- simple series circuit	**Science** forces Apply knowledge andunderstanding of circuits, switches, conductors **Spoken Language** Ask relevant questions, give well-structureddescriptions and explanations. Build technical vocabulary. **Maths:** Apply knowledge of how 2-D nets can be formed into3-D shapes; apply skills of accurate measuring using standard units i.e. cm/mm.	**Social** - opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. **Moral**- opportunities to understand the consequences oftheir behaviour and those of others Spiritual - Opportunities to use creativity and imagination in thelearning **Cultural** - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally

Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** The minimum all pupils should know	**Key skills** Which can be applied once the knowledge is understood
Technical knowledge and understanding To understand and use electrical systems in their 'products'. To know how to apply their understanding of computing, to program,monitor and control To know and use technical vocabulary relevant to the project. To understand and use mechanical systems in their products (e.g. gears, pulleys, levers and linkages and cams) To understand how to reinforce and strengthen increasingly complex structures using a range of materials	**Designing** I can investigate examples of cam toys and comment on how they work Generate, develop and model innovative ideas, through discussion,prototypes and annotated sketches. explore and investigate different types of cam mechanisms and think about the shapes they will produce. Test different shaped cams to see how they affect the linear movement of the follower . **Making** explore materials and investigate different ways of strengthening moving toy structures. to follow a design to create a moving toy with a cam mechanism. **Evaluating** Can children evaluate a finished product fairly? Can children suggest ways they could improve their product if they were to make it again? Can children recognise ways in which they have been successful?

	Making Formulate a step-by-step plan to guide making, listing tools,equipment, materials and components. Competently select and accurately assemble materials, and securelyconnect electrical components to produce a reliable, functional product. Create and modify a computer control program to enable an electricalproduct to work automatically in response to changes in the environment. **Evaluating** Continually evaluate and modify the working features of the productto match the initial design specification. Test the system to demonstrate its effectiveness for the intendeduser and purpose. Investigate famous inventors who developed ground-breaking electrical systems and components

Y5 Summer Term 1 nutrition and cooking- making Maya hot chocolate and Maya corn tortillas

Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
ingredients, yeast, dough, bran, flour, whole meal, unleavened, baking soda, spice, herbs, healthy, varied, gluten, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	EYFS- Growing strawberries Y1- fruit kebabs Y2 - healthy wraps Y3 - cereal bar Y4: Brazilian cheese bread	**History** Ancient Maya	**Social** - Opportunities for cooperation to promote skills andattitudes necessary for positive contribution to life. sense of enjoyment and fascination in learning about themselves, others and the world around them **Moral**- Opportunities to understand the consequences oftheir behaviour and those of others **Spiritual** - Opportunities to use creativity and imagination in thelearning **Cultural** - Opportunities to show respect and understanding towardsall different communities locally, nationally and globally

Threshold Concepts Knowledge without which later concepts will not be fully understood **Core Knowledge** The minimum all pupils should know	**Key skills** Which can be applied once the knowledge is understood
Technical knowledge and understanding To weigh and measure accurately (time, dry ingredients, liquids). To know how to apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens. To understand which foods are reared, caught, or grown and that this happens in the UK and across the globe! To understand that the seasons can affect food produce To understand that recipes can be adapted to change the appearance, taste and aroma of a dish	**Designing** Generate and clarify ideas through discussion with peers and adultsto develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communicationtechnology, such as web-based recipes, to develop and communicate ideas. select their own suitable ingredients when cooking or baking **Making** I can understand how food is processed into ingredients that can be eaten or used in cooking. I can prepare and cook a variety of predominantly savoury dishes including the use of a heat source I can demonstrate increasing confidence in how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. **Evaluating** Carry out sensory evaluations of a variety of ingredients and products. Do they present food in an appealing way? Evaluate food by taste, texture, flavour etc

Year Group: Yr 6

Y6- Autumn Term 1 and 2 ROAR competition linked with 8 billion ideas - construction and textiles			
Key Vocabulary	**Interleaving *Opportunities*** *(e.g. when past topics can be revisited)*	**Links to wider curriculum** *(e.g. different subjects or key stages)*	**SMSC**
design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype	EYFS- junk modelling Construction play Making a pirate cutlass Clay diva lamp Year 1-Design a queen' s hat Year 2- Chinese dragon sock puppet Year 3- Stone age tools and jewellery Year 4 – dragon eyes Year 5- viking shields	**Spoken language:** Ask relevant questions, formulate and express opinions, give well- structured descriptionsand explanations. Use relevant strategies to build their vocabulary. **Art** Use and apply drawing skills. Use techniques with colour, pattern, texture, line and shape.	**Spiritual** ability to be reflective about their own beliefs (religious or otherwise) and perspective on life knowledge of, and respect for, different people's faiths, feelings and values sense of enjoyment and fascination in learning about themselves, others and the world around them use of imagination and creativity in their learning willingness to reflect on their experiences **Moral** interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues. **Social** use of a range of social skills in different contexts, for example working and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds willingness to participate in a variety of communities and social settings, including by volunteering, cooperating well with others and being able to resolve conflicts effectively **Cultural** willingness to participate in and respond positively to artistic opportunities

Threshold Concepts *Knowledge without which later concepts will notbe fully understood* **Core Knowledge** *The minimum all pupils should know*	**Key skills** *Which can be applied once the knowledge is understood*
To understand how to strengthen, stiffen and reinforce 3D frameworks (WE DID THIS IN THE LIGHTHOUSE PROJECT) WE WILL LOOK AT SOME DIFFERENT TECHQNIUES NEXT TIME TO HELP THEM WITH JOINING) To know and use technical vocabulary relevant to the project. To select from and use appropriate tools to measure, mark, cut and assemble materials,	**Designing:** Use research using surveys, interviews, questionnaires and web-based resources. to develop a design specification for a range of functional products. Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. Generate and develop innovative ideas and share and clarify these through discussion. Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. **Making:** formulate a step-by-step plan to guide making, listing tools, equipment, materials and components Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products. Use finishing and decorative techniques suitable for the product they are designing and making. **Evaluating:** Continually evaluate and modify the working features of the product to match the initial design specification. Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. Test the system to demonstrate its effectiveness for the intended user and purpose.

Y6: Spring Term 1 and 2- Mechanisms and circuits- make a lighthouse

Key Vocabulary	Interleaving *Opportunities* *(e.g. when past topics can be revisited)*	Links to wider curriculum *(e.g. different subjects orkey stages)*	SMSC
Pulley, drive belt, gear, rotation,spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams mechanical system, electrical system, input, process, output, design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief	EYFS- Mobilo construction Junk modelling Yr 1- Moving pictures- sliders/levers Yr 2 – NY taxis: moving vehicles Y3- roman catapults- lever, linkage, pivot Y4- simple series circuit Y5 – moving toys cam mechanisms	**English** Letters from the Lighthouse by Emma Carroll **Spoken language** Ask relevant questions, formulate and express opinions, give well- structured descriptions and explanations. Use relevant strategies to build their vocabulary. **Computing** Use search technologies for research purposes and be discerning when evaluating digital content **Mathematics** Understand ratios. Apply understanding and skill to carry out accurate measuring using standardunits i.e. cm/mm. **Science** Apply knowledge and understanding of circuits, switches, conductors and insulatorsin the design of the final product. Recognise that some mechanisms, including pulleys and gears, allow a smaller force to have a greater effect. **Art** Use and apply drawingskills. Use techniques with colour, pattern, texture, line and shape.	**Social** - Opportunities for cooperation to promote skills and attitudes necessary forpositive contribution to life, **Moral**- Opportunities to understand the consequences of their behaviour and thoseof others, and offer reasoned views aboutmoral issues **Spiritual** - Opportunities to use creativityand imagination in the learning, and to reflect upon their own personal development **Cultural** - Opportunities to show respect and understanding towards all different communities locally, nationally and globally, and to understand the range of different cultures in school and further afield.

Threshold Concepts Knowledge without which later concepts will notbe fully understood **Core Knowledge** The minimum all pupils should know	**Key skills**
Technical knowledge and understanding To know that mechanical and electrical systems have an input,process and an output.	Designing: Which can be applied once the knowledge is understood Generate innovative ideas by carrying out research using surveys,interviews, questionnaires and web-based resources. Develop a simple design specification to guide their thinking. Develop and communicate

To know that gears and pulleys can be used to speed up, slow downor change the direction of movement. To know and use technical vocabulary relevant to the project	ideas through discussion, annotated drawings, exploded drawings and drawings from different views. **Making** Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. Select from and use a range of tools and equipment to make products thatthat are accurately assembled and well finished. Work within the constraints of time, resources and cost. **Evaluating** Compare the final product to the original design specification. Test products with intended user and critically evaluate the quality ofthe design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work. Investigate famous manufacturing and engineering companies relevant tothe project. (WE LOOKED AT FAMOUS TALL STRUCTURES FROM AROUND THE WORLD)

Y6: Summer Term 1 and 2 Nutrition and Cooking Make a fruit crumble

Key Vocabulary

Ingredients, yeast, dough, bran, flour, wholemeal, unleavened, bakingsoda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality
utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk,beat, roll out, shape, sprinkle, crumble

Interleaving *Opportunities* *(e.g. when past topics canbe revisited)*

EYFS- Growing strawberries

Y1- fruit kebabs

Y2 - healthy wraps

Y3 - cereal bar

Y4: Brazilian cheese bread

Y5- Maya hot chocolate and corn tortillas

Links to wider curriculum *(e.g. different subjects or key stages)*

English: writing a recipe

Mathematics- weighing Mass g/ kg

Spoken language Developing relevant vocabulary e.g. sensory descriptors. Ask relevant questions to extend their knowledge.

Science Use and develop skills of observing and questioning.

Humans get nutrition from what they eat.

Discuss changes of state if heat is used

SMSC

Social - Opportunities for cooperation to promote skills and attitudes necessary forpositive contribution to life, and to participate in a variety of communities orsocial setting by volunteering and cooperating.
Moral- Opportunities to understand the consequences of their behaviour and thoseof others, and to reflect upon their actions and appreciate the viewpoints of others
Understand the environmental impact of food decisions (eg. 'air miles' on out of season fruits and vegetables)
Spiritual - Opportunities to use creativityand imagination in the learning and to reflect upon their own development and begin to think about ways to further it andgrow.
Cultural - Opportunities to show respectand understanding towards all different communities locally, nationally and globally

Threshold Concepts *Knowledge without which later concepts will notbe fully understood* **Core Knowledge** *The minimum all pupils should know*	**Key skills** *Which can be applied once the knowledge is understood*
Technical knowledge and understanding To know how to use utensils and equipment including heat sourcesto prepare and cook food. To know how to use utensils and equipment safely. To understand the importance of seasonality in relation to foodproducts and the source of different food products. To know and use relevant technical and sensory vocabulary I'M NOT SURE YET AS HAVENT TAUGHT IT!	**Designing** Generate innovative ideas through research and discussion with peersand adults to develop a design brief and criteria for a design specification. Explore a range of initial ideas, and make design decisions to developa final product linked to user and purpose. Use words, annotated sketches and information and communicationtechnology as appropriate to develop and communicate ideas. **Making** Write a step-by-step recipe, including a list of ingredients, equipmentand utensils Select and use appropriate utensils and equipment accurately to measureand combine appropriate ingredients. Make, decorate and present the food product appropriately for theintended user and purpose. **Evaluating** Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/chartssuch as star diagrams. Evaluate the final product with reference back to the design brief anddesign specification, taking into account the views of others when identifying improvements. Understand how key chefs have influenced eating habits to promote variedand healthy diets.