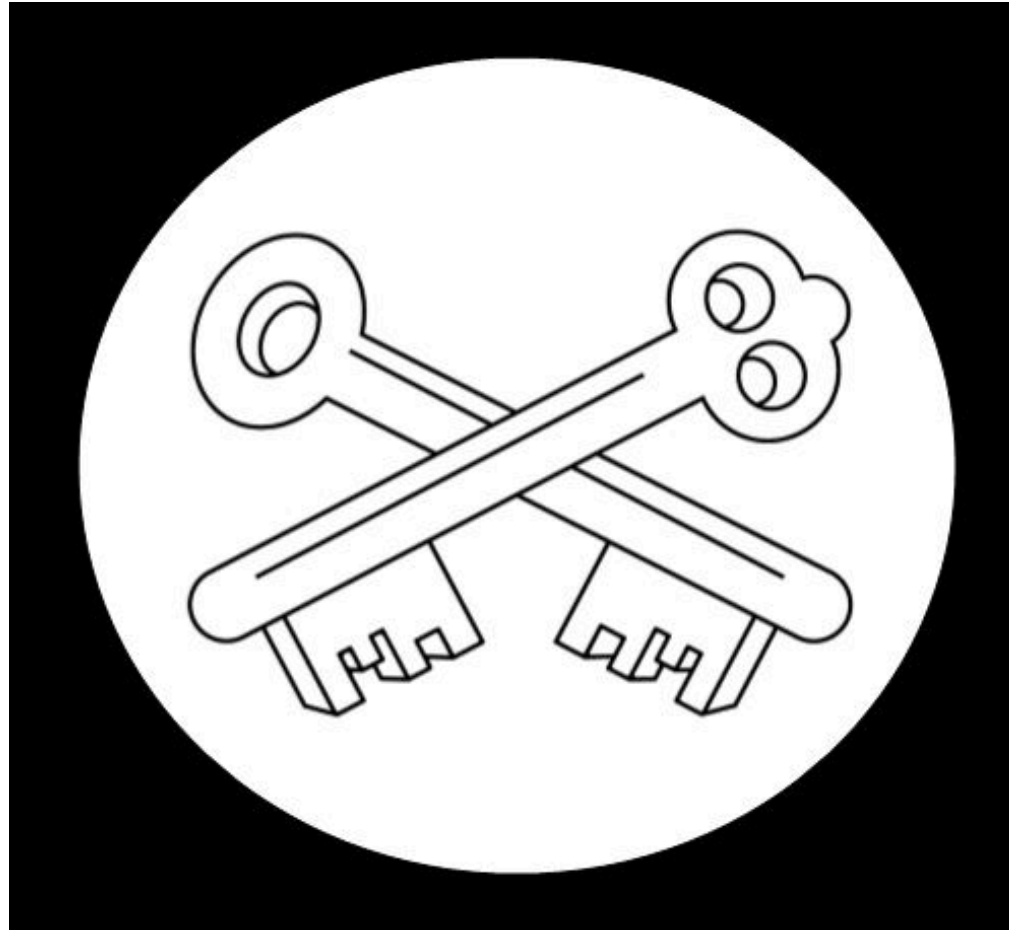


ST PETER'S COFE JUNIOR SCHOOL



DESIGN & TECHNOLOGY CURRICULUM

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ST PETER'S CURRICULUM

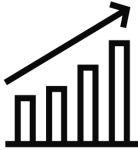
In order for our pupils to truly flourish, we believe in providing an education for the head (academic excellence), heart (character and wellbeing) and hands (making a difference). As a result, our curriculum aims to bring together powerful and culturally-rich knowledge, real opportunities to shape the world alongside developing and growing our pupils as happy and virtuous individuals.

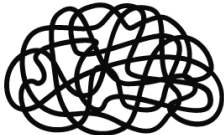


		
Head	Heart	Hands
We believe that knowledge and cultural literacy matters; creating a better world, starts with understanding this one. Our curriculum introduces the 'great conversations of humanity' - knowing who we are and where we have come	Heart is about ensuring our pupils are not only happy, but are able to fulfil one's potential. This requires the acquisition and development of virtues: the traits that sustain a well-rounded life and a thriving society. As a result, we aim to develop	The Hand is where pupils can do meaningful work. The world needs leaders who can change the world for the better. Our curriculum will empower and inspire our children to go out into the world and make a difference in their own life and to

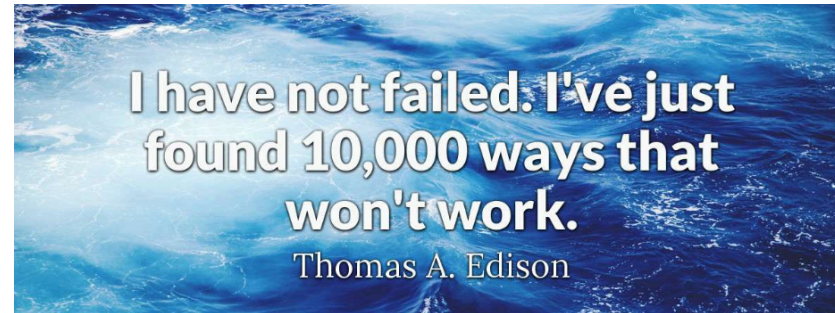
from - our rich history, the foundations of scientific discovery, the great ideas of the past. However, we do not believe in simply passing on knowledge; it is also about empowering knowledge, making meaning of knowledge, using it, applying it and challenging it.	confident and compassionate students, who are effective contributors to society, successful learners, and responsible citizens.	others. For if we want our young people to shape the world rather than just accept it the way it is, they need to be provided with problems to solve, projects to work on and learn how to be active citizens.
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In order to fulfill these curriculum aims, we have eight key principles that underpin the design of our curriculum:

			
Broad and Balanced	Big ideas	Clear progression	Meaningful
In order for all our pupils to flourish, the curriculum at St Peter's will promote intellectual, moral, spiritual, aesthetic, creative, emotional and physical development as equally important.	Our curriculum will be designed to enable our pupils to begin developing an understanding of the big ideas and concepts which shape the world. There will be a subject specific rationale for all content choices.	Each subject domain will be carefully planned out, structured and sequenced to ensure progression and clarity over what 'getting better' at the subject means. As a result, our curriculum will become our progression model.	Our curriculum aims to be engaging, interesting and motivating for our pupils. We want our curriculum to get pupils interested in things they never knew they were interested in.

		
Memory in Mind	Vocabulary-rich	Empowering Knowledge
Our curriculum will take into account how children learn. To this end, we will place particular importance on ensuring that it supports pupils to retain core knowledge.	The brain does not make much of a distinction between reading about an experience and encountering it in real life; the same neurological regions are stimulated. As a result, a focus on reading and vocabulary is key to learning and remembering.	Our curriculum will be built around powerful, culturally-rich knowledge. However, it will not just focus on the passing on of this knowledge but will also be about making meaning of this knowledge, using it, applying it, and challenging it.

PURPOSE AND RATIONALE



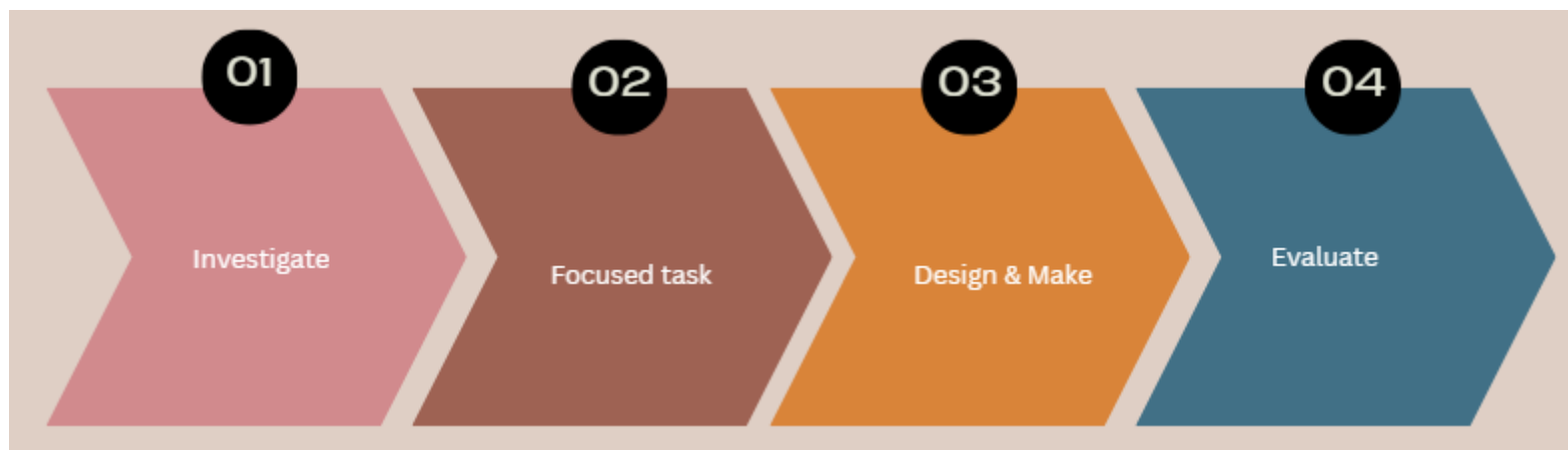
At St Peter's, we believe that Design Technology exposes children to an attitude, knowledge and skills which will serve them in productive lives, whether that be in typical Science, Technology, Engineering and Maths (STEM) fields or not. Our Design Technology curriculum provides children with real life challenges which provoke questions and require creative, but measured, responses. We wish to inspire children with a solution-finding attitude, embracing an iterative design process. They will recognise their capability to make changes and improvements to what already exists. Our curriculum is designed to provide an education of the head, through research and developing technical vocabulary related to design and technology. An education of the hands, by providing the children opportunity to design and create their own products. And an education of the heart, through building resilience and adaptability when creating and evaluating projects, making suitable changes in order to fit a design brief. Linking to our school values of aspiration, enjoyment, reliance and growth.

For a quarter of the projects experienced during KS2, children will respond to a challenge which is food technology-based, with the aim of providing real life skills and an understanding of the role nutrition plays in living healthy lives. Across the four years of study, there are opportunities to draw upon learning from other subjects, including the use of technology to meaningfully apply their learning from the computing curriculum. Where possible, we believe in providing a real life audience to children's design, hence the inclusion of Enterprise activities during their time at St Peter's.

Our learning in year 3 builds on pupils' knowledge and experience of the design, make and evaluate model from KS1. Food technology is introduced to the children in a guided way through a project related to their India topic. Year 4 offers the opportunity to taste and adapt recipes inspired by Italian cuisine. Year 6 children examine the cultural importance of bread before developing and making their own recipes. The project dovetails with their learning about micro-organisms in Science. There are textile projects in Years 3 and 5, the latter extending the complexity of

designs and the range of joinings/decorations. A range of mechanical systems are applied to children's designs: Year 3 - pneumatics; Year 4 - levers and linkages; Year 5 - cams; Year 6 - gears and motors. Throughout the Key Stage, methods are explored for manipulating 2D materials to form 3D shell or frame structures, or to create aesthetic effects.

Where appropriate, across the Key Stage, children's learning will follow a regular pattern, based upon the Design and Technology Association's structure. They begin with *Investigative and Evaluative Activities*, exploring products which are already available. *Focused Practical Tasks* follow this stage, providing children with the technical knowledge required to design their own product. Children then engage in *Design, Make and Evaluate Activities*. An iterative approach is encouraged throughout a topic, encouraging children to recognise the need to adapt and refine initial ideas as they progress in their projects.



Our DT curriculum aims to ensure that our pupils gain both declarative knowledge and procedural knowledge through the research, design, make and evaluate process. Within each unit, pupils are taught and exposed to both sets of types of this knowledge. For example, within the Year 6 'bread unit' pupils are taught declarative knowledge at the start of the unit - through learning about the history of bread making and the differences in bread across the globe. They are also taught about all the ingredients needed to make bread and the scientific process of how yeast causes the bread to rise. They then use their procedural knowledge to design, make and evaluate their own bread.

DT CURRICULUM OVERVIEW

	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Year 3		Robin Hood Glove puppet	Indian Food and packaging		Pneumatic monsters	
Year 4		Pop-up cards		Italian food - pasta and sauce making		Robot Head- 3D structures and electrical circuits
Year 5		Christmas-themed felt toys/decorations		Earthquake proof building		Wooden toy - Frame structures and cams
Year 6	Bread-making	Innovation and Marketing - Enterprise			Moving vehicles - electrical components, frame structures and gears	

WHY THIS AND WHY HERE?

Unit	Why this and why here?
Robin Hood themed Textiles	Builds upon the knowledge and skills of the Year 2 blanket square unit. The History curriculum in Autumn 2 focuses upon local history and the story of Robin Hood. This project extends the range of joins they will be familiar with, using the engaging stimulus of the local hero and a clearly authentic end product which they can relate to.
Indian Food and packaging	First statutory food technology project which links with the study of India in the RE and Geography curricula. It introduces the concept of where food comes from and enables the production of a clear product in a guided production. The packaging element introduces computer aided design in the creation of precise nets.
Pneumatic monsters/ mummies	Builds upon the Year 2 unit on castles with levers and sliders. Introduces the first and simplest of systems for movement. The clear inputs and outputs prepare the children for more complex movement systems as the Key Stage progresses.
Pop-up cards	Frequently in Autumn 2, Christmas is used as a focus since it is easy for children to relate to the festival and they are motivated to produce an authentic product for a clear user and purpose. The challenging lever and linkage methods enable greater choice in design, develop children's practical skills from the grounding in Year 3, and increase the complexity of inputs and outputs..
Italian food - pasta and sauce making	Relates to Geography and History topics - Italy and the Roman.. Provides children with greater autonomy in designing and preparing a cooked, savoury recipe.
Robot Head- 3D structures and electrical circuit	Thematically links to the study of The Iron Man novel in English and provides a chance to use their learning about electricity in Science in a functioning product.
Christmas- themed felt toys/decorations	Again a Christmas theme but revisiting and developing skills from Year 3 with a wider range of options for the end product and defined users. There is greater potential for innovation in the inclusion of extra components and a wider range of joining methods used.
Earthquake proof model building	Related to the Earthquakes topic in Geography. Introduces frame structures and reinforcements which will be returned to in Year 6. Potential for including computer control to

	extend learning about circuits in Year 4 and an authentic function in which to apply Computing coding skills.
Wooden toy - Frame structures and cams	The unit develops the range of methods of cutting and joining to include an unfamiliar material (preparing children for the precise use of wooden frames within a more flexible design for the moving vehicle topic in Year 6). Cams extend the range of mechanical systems explored.
Innovation and Marketing - Enterprise	An authentic opportunity for Year 6 make innovative products within an authentic commercial setting. It is included here as it provides Year 6 with the opportunity to drive their own application of the Design, Make and Evaluate process and utilise some of the variety of skills introduced earlier in the Key Stage or discovered through their own research.
Bread-making	Bread making is chosen for our third savoury food technology project as the product is ubiquitous globally and food supplies are an issue in sustainability, linking with the Year 6 geography topics. The study of micro-organisms in Science prepares children for the effects of yeast within the recipe. The means of cooking extends methods with which children are familiar.
Moving vehicles - electrical components, frame structures and gears	Methods of propulsion link to Sustainability theme and forces in Science. Children can select from methods (eg pneumatics and electrical systems) to which they have been introduced earlier. Chassis and axles require greater precision cutting the whole product to be strong and function effectively, hence most appropriate for Year 6.

How our curriculum supports gaps in our pupils' knowledge and skills

Context and demographics	Implications for St Peter's curriculum
A considerable number of our pupils join us with significantly higher than average levels of prior attainment. School location deprivation indicator is in quintile 1 (least deprived) of all	The Design Technology curriculum is designed to be challenging, knowledge and skills rich and built upon the highest of expectations. Through the curriculum, our pupils are exposed to a wide range of authentic challenges within which to apply the design process, raising aspirations for future STEM-based careers.
Despite the above, there are pockets of deprivation in the catchment (with some pupils coming to the school from one of the 10% most deprived neighbourhoods in the UK) and we have an increasing amount of Disadvantaged Pupils with us.	The curriculum provides the cultural capital these pupils may not receive outside of school, exposing them to historical knowledge about innovators and innovations which have an impact upon their society. It provides rich activities and a range of materials which they may not have access to, or opportunities to use, at home.

BIG IDEAS AND CONCEPTS

OUR KEY CONCEPTS DEFINED

USER

The person, group or community for whom a product is designed.

PURPOSE

Products perform one or more clearly defined tasks.

FUNCTIONALITY

Products need to work effectively in order to achieve what a user needs and their purpose.

RESEARCH

Designers examine existing products and their own progress so that they can explore techniques and adapt ideas.

DESIGN DECISIONS

The choices designers make to successfully create suitable products for a particular user and purpose.

INNOVATION

The need for designers to be original with their thinking, generating a range of design ideas to increasingly open-ended projects.

AUTHENTICITY

Designing and making products that are believable, real and meaningful to the designer and others.

EVALUATION

Products are judged and adapted in relation to the users, purposes and functions.

HEALTHY EATING & NUTRITION

- Preparing and cooking a variety of predominantly savoury dishes safely and hygienically.
- A healthy diet is made up from a variety and balance of different food groups, providing different substances (nutrients) that are needed for health.

END POINTS

By the end of KS2, pupils should be able to:

Design

- 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, 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

Evaluate

- 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

Technical knowledge

- 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 their products

Cooking and nutrition

- understand and apply the principles of a healthy and varied diet
- 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.

PROGRESSION IN DESIGN AND TECHNOLOGY

Process			
Design			
Year 3	Year 4	Year 5	Year 6
Cooking Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through investigating a variety of ingredients. Communicate these ideas through talk and drawings. Draft design ideas for samosa packaging Textiles Generate realistic ideas through discussion and design criteria for an appealing, functional puppet fit for purpose and specific user/s. Produce annotated sketches, prototypes, final product sketches and pattern pieces Moving Monsters Generate realistic and appropriate	Cooking Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Carry out a sensory evaluation of some key ingredients (pesto, olives, polenta, Parmesan, Prosciutto) Plan out the main stages of the making process Robot Heads Gather information about users' needs and wants, and develop design criteria to inform the design of products that are fit for purpose. Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross sectional and exploded diagrams	Textiles Generate innovative ideas and own design criteria by carrying out research Develop, model and communicate ideas through talking, drawing, templates, mock ups and prototypes Design an original and appealing product for the intended user that is fit for purpose based on a simple design specification Frame structures Carry out research into user needs and existing products Explore case studies of earth quake proof buildings Develop a simple design specification to guide the development of their ideas and products Annotate a range of possible ideas, and plan the main stages of making. Cams	Cooking Carry out relevant research into existing products (including the history of bread and tasting different breads) Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. Use words, annotated sketches and information as appropriate to develop and communicate ideas Moving vehicles Use CAD to create and annotate an innovative design for a moving vehicle Select a means of propulsion, and plan the main stages of making Programme a movement response using micro:bits Enterprise Children generate innovative ideas drawing on research (including

ideas and their own design criteria through discussion, focusing on the needs of the user Use annotated sketches and prototypes to develop, model and communicate ideas Plan out the main stages of the making process	Pop up cards Create an original Christmas card design for a defined use Use annotated sketches and prototypes to develop, model and communicate ideas Plan the main stages of the making process	Develop an authentic and meaningful design brief Generate innovative ideas by carrying out research on existing toys with cam mechanisms Develop and communicate ideas through discussion and detailed annotated drawings which indicate design decisions and how mechanisms will work..	market research to find an unexploited niche) Pitch a range of innovative ideas for a target audience and persuade collaborators and users of their decisions Plan and decide how to manage a budget
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Make

Year 3	Year 4	Year 5	Year 6
Cooking Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. Select from a range of ingredients according to their characteristics to create a chosen product Textiles Plan the main stages of making. Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. Select fabrics and fastenings according to their functional characteristics and aesthetic qualities Moving Monsters Order the main stages of making	Cooking Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics Robot Heads Order the main stages of making. Select from and use tools and equipment to cut, shape, join and finish with some accuracy. Select from and use materials and components, including construction materials and electrical	Textiles Produce detailed lists of equipment and fabrics relevant to their tasks. Formulate step by step plans Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Frame structures Formulate a clear plan, including a step by step list of what needs to 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 construction materials to make frameworks.	Cooking Write a step by step recipe, including a list of ingredients, equipment and utensils Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose Pulleys 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

Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons Select from and use finishing techniques suitable for the product they are creating	components according to their functional proper ties and aesthetic qualities Pop up cards Order the main stages of making Select from and use appropriate tools with some accuracy to cut, shape and join paper and card Select from and use finishing techniques suitable for the product they are creating	Use finishing and decorative techniques suitable for the product they are designing and making. Cams 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 that are accurately assembled and well finished.	that that are accurately assembled and well finished. Enterprise As a group, 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 that that are accurately assembled and well finished. Assemble products in a team in an efficient way Work within the constraints of time, resources and cost
Evaluate			
Year 3	Year 4	Year 5	Year 6
Cooking Taste and evaluate a range of ingredients to determine the intended user's preferences. Evaluate ideas and finished products (samosa and packaging) against design criteria, including intended user and purpose Textiles Investigate a range of textile products relevant to the project.	Cooking Carry out sensory evaluations of a variety of foods and spices from India. Record the evaluations using e.g. tables and simple graphs. Evaluate the ongoing work and the final product with reference to the design criteria, the views of others and considering originality and flavour. Robot heads	Textiles Investigate and analyse textile products linked to their final product. Compare the final product to the original design specification Test products and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose using a bar chart Consider the views of others to improve their work	Cooking Carry out sensory evaluations of a variety of existing food products and ingredients relating to bread making Record the evaluations using e.g. tables/graphs/charts Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.

Reflect on the progress of the project at varying points Test their product against the original design criteria and with the intended user and purpose in mind Pneumatics Investigate and analyse products with pneumatic mechanisms Evaluate their own products and ideas against criteria and user needs as they design and make	Investigate and analyse a range of existing battery powered products. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. Pop-up cards Investigate and analyse products with lever and linkage mechanisms Evaluate their own products and ideas against criteria and user needs, as they design and make	Frame structures Investigate and evaluate a range of features of earthquake proof buildings. Test a prototype and revise the design appropriately. Critically evaluate their products against their design specification, intended user and purpose, Identifying strengths and areas for development Cams Compare the final product to the original design specification. Test products and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work. Investigate famous manufacturing and engineering companies relevant to the project.	Understand how key chefs have influenced eating habits to promote varied and healthy diets. Moving vehicles Compare the final product to the original design specification. Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work. Investigate famous manufacturing and engineering companies relevant to the project Enterprise Investigate what products will appeal in a competitive market, how they can be made efficiently and at reasonable cost Adapt ideas based on market research Identify strengths and areas to develop in their ideas and products against their design specification; recognise potential problems and adapt; consider the views of others to make improvements. Calculate profit margins
Key innovations and individuals			
Year 3	Year 4	Year 5	Year 6

Key innovations and individuals: At the most basic level, children know about effects and uses of air pressure (eg air brakes, dentistry and mining) and their benefits (Simplicity, reliability and safety). They know there are natural and synthetic fibres and some innovators: Jacob W. Davis; John Whinfield and James Dickson; Charles Macintosh.	Key innovations and individuals: Children recognise electricity's ubiquity and, at a basic level, sustainable energy's importance in tackling climate change. They know about Thomas Alva Edison and Alexander Graham Bell and their achievements as: pioneers of electrical systems. Ada Lovelace - first 'computer programmer'.	Key innovations and individuals: Children know that felt may be the oldest known textile and has uses beyond crafts (eg damping instruments and machinery sounds). They know that the first rockets originated in 13th China They know about the work of Wernher von Braun for NASA and Sergei Korolev (lead engineer on Sputnik 1)	Key innovations and individuals: Trevor Baylis inventor of the wind up radio. Sir James Dyson Karl Benz automobile engineer and inventor of first practical automobile. Henry Ford (mass production)
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Technological Knowledge

Textiles

Year 3	Year 4	Year 5	Year 6
Know about the characteristics of fabric materials and how they can be joined Explore different stitching techniques used to join fabrics with a focus on the running stitch and over sew stitch		Explore a range of sewing stitching techniques including tacking, running stitch, oversew stitch and backstitch Explore seams and pinning, starting and finishing.	

Electrical & Computing

Year 3	Year 4	Year 5	Year 6
Learn simple computer modelling to design a net for a stable and appealing shell structure	Understand that systems have an input, process and output	Create a design using Tinkercad computer software	Learn how we can use CAD to create and annotate an innovative design

	Know how to program a computer to control their products Know how electronic effects can be used in greetings cards Know how to programme a Micro:bit. Understand how to make a functioning switch. Know how to make a series circuit to rotate a propeller. Understand how to make a parallel circuit to make lamps light up evenly.		Understand how to use make and attach an electrical circuit with a motor and a switch in order to power a chassis
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Structures

Year 3	Year 4	Year 5	Year 6
Draft design ideas and create a stable and appealing food packaging structure using CAD	Draft design ideas and create a stable and appealing food packaging structure by creating a net Design a structure using computer aided design Assemble a fully functioning robot head	Test how to construct strong frames which can stand upright Explore the advantages of deep foundations, cross bracing, shock absorbers and shear walls Test the strength of different shapes and frames Learn about frame structures, considering shapes, joints and reinforcements.	Design a prototype of the packaging for a bread product Make a large and functioning net for the bodywork Know about the different structures found in land vehicles Complete a technical drawing of a chassis Learn how to construct a chassis using wooden strips

Mechanisms

Year 3	Year 4	Year 5	Year 6
Explore how air power can be used to create movement Explore how pneumatic systems can be used alongside mechanisms to create movement Know how to create a pneumatic system	Know how to create movement using levers and linkages Know how to create movement using sliders and pop-outs	Know about different types of cam mechanisms Learn how to measure carefully and use a hand drill safely to make an off-centre cam and position it accurately Know how to use a hammer and nails to join wood	Understand the importance of wheels and axles Know how to safely saw wood by using a clamp Explore how to safely join wood together using a glue gun Know how to cut, join and reinforce a chassis Know how to ensure a pulley and axles function effectively Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.

Cooking and Nutrition

Year 3	Year 4	Year 5	Year 6
Know what the main food groups are and how we need them in a balanced and varied diet Learn what are staple crops in India and how are these used in Indian food Explore what Indian food products are available in UK supermarkets and what can we discover by investigating/ sampling them	Learn what are staple foods in Italy and the wider Mediterranean and what Italian food products are available in the UK Examine traditional recipes. Investigate healthy eating labels on packaging. Slice and cut ingredients hygienically and safely, using the bridge and claw technique		Recognise why yeast is important to the making of bread Measure and weigh ingredients accurately Mix in order to combine ingredients Learn how to build strength by stretching and folding Knead a bread dough

With support, peel and grate ingredients hygienically and safely, using peelers and grater With support, make samosa dough by adding key ingredients and mixing With support, make the filling by heating ingredients in a pan With support, fill the pastry with the filling by pinching and folding. Follow a recipe, using appropriate utensils and measuring skills to prepare food. Use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures.	Peel and grate ingredients hygienically and safely, using peelers and grater Be aware of appliances that produce heat and understand how to use them correctly with a focus on frying and boiling Know how to thicken a sauce by bringing ingredients to the boil and simmering Use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures.		Know how to shape bread Safely use an oven in order to bake the bread Use utensils and equipment safely and hygienically.
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DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Textiles	Year:	3	Term:	Autumn 2
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Links to prior learning

This unit revisits skills (cutting, shaping, joining and finishing) and knowledge (selecting materials according to their characteristics) from the KS1 curriculum. It continues the practice of an iterative design process following the Design, Make, Evaluate model. At KS1 children should have joined fabric in simple ways by gluing and stitching, used simple patterns and templates for marking out and evaluated a range of textile products.

New learning

- What types of fabric are there and how do we use them. Key Events and Individuals: introduce innovators and products
- (IEA) What products/ designs are there currently that share a Robin Hood motif?
- (IEA) How are relevant, related textile products joined, finished and fastened? What can we learn from disassembling them?
- (FT) What stitching techniques can we use?
- (Design) can we adapt a model to create an original design for a stated user and purpose, sketch and annotate a range of possible ideas, and plan the main stages of making?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?

- Can we evaluate our progress and the final product in relation to the design brief and criteria, considering the aesthetics and quality finish of our product?

Preparation for future learning

Children take part in a more challenging textile project in year 5 which extends their range of joining techniques and offers greater autonomy in design choices.

Key vocabulary

Specific: fabric, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance.

Generic: user, purpose, design, model, prototype, sketch, original, investigate, evaluate label, drawing, aesthetics, function, pattern piece.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils design, create and evaluate a Robin Hood inspired hand puppet

What teachers need to know

Jacob W. Davis: inventor of modern, hard-wearing, reinforced jeans for workwear.

Charles Macintosh invented waterproof fabric by including a rubber layer. The [Mackintosh raincoat](#) is named after him.

- Stitching and other joining methods - running and oversew stitch
- Decorative techniques including use of fabric pens and paints, applique (stitched or ironed on), embroidery stitches.
- DATA Projects on a Page - Yr 3/4 2D shape to 3D product

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Indian Food and Packaging	Year:	3	Term:	Spring 2
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Links to prior learning

This unit builds on KS1's introduction of some of the basic principles of a healthy and varied diet. Children will have previously used some equipment and utensils to prepare and combine ingredients to make a product. At a simple level, they will have considered where food comes from.

For packaging, they will have explored structures made from card, including how they can be made stronger, stiffer and more stable.

New learning

- What are the main food groups and how do we need them in a balanced and varied diet?
- What are staple crops in India and how are these used in Indian food? Why is rice so important?
- (IEA) What Indian food products are available in UK supermarkets and what can we discover by investigating/ sampling them?

Guided production from outside provider:

- (FT) What cooking/ preparation techniques can we use?
- (Design) Can we adapt a recipe to create an original product and plan the main stages of making?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?

Packaging:

- (IEA) How are products packaged in simple boxes?
- (FT, Design and make) Can we use simple computer modelling to design a net for a stable and appealing shell structure?
- Can we evaluate our final products in relation to the design brief and criteria?

Preparation for future learning

The effects of seasonality, climate and culture upon food production will be returned to in Year 4 when children will contrast Indian and Mediterranean diets. Children's preparation skills will be extended by increasing the range of chopping techniques and cooking techniques.

Key vocabulary

Specific: starches, carbohydrates, proteins, fruit and vegetables, vitamins, minerals, oils and fats, dairy, sugar and salt.

Names of products, equipment, utensils, techniques and ingredients.

Recipe, texture, taste, sweet, sour, hot, spicy, appearance, smell, greasy, savoury, hygienic.

Generic: user, purpose, design, recipe, original, sensory evaluation, function.

Big ideas and key concepts

All key concepts are re-visited with the addition of Healthy Eating and Nutrition.

Assessment opportunity

Pupils design, make and evaluate their own samosa

What teachers need to know

All about India food powerpoint

<http://greetingindia.tripod.com/food.html>

<https://www.oddizzi.com/teachers/explore-the-world/country-close-up/case-study-india/living-in-india/food/>

http://wiki.dtonline.org/index.php/Category:Food_Technology

DATA Projects on a Page - Yr 3/4 Healthy and varied diet

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Moving Monsters/ Mummies	Year:	3	Term:	Summer 2
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Links to prior learning

This unit revises the iterative design process following the Design, Make, Evaluate model. In KS1, children will have explored simple mechanisms, such as sliders and levers, and simple structures, learnt how materials can be joined to allow movement and joined and combined materials using simple tools and techniques.

New learning

- What is a mechanism and what types do we find in toys and games? What everyday objects use air to make them work and how?
Key Events and Individuals: introduce Dunlop - see What teachers need to know
- (IEA) How can we lift an object and what parts move? What types of pneumatic systems could we make? (FT) How can we use various syringes/ balloons and washing up bottles to vary movements?
- (Design) Can we use pneumatics to create a moving model toy, linked to our themes, for a child of a stated age. Can we sketch and annotate a range of possible ideas, and plan the main stages of making?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?

- Can we evaluate our progress and the final product in relation to the design brief and criteria, considering the aesthetics and how effectively it functions?

Preparation for future learning

Children will use more complicated mechanisms in each of the following years, requiring increased accuracy in measurement.

Key vocabulary

Specific: components, attaching, tubing, syringe, plunger, split pin, paper fastener

pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight

Generic: user, purpose, function, design criteria, original , investigate, evaluate, label, drawing, sketch, aesthetics.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils design, create, test and evaluate their own moving monster

What teachers need to know

<https://www.twinkl.co.uk/teaching-wiki/mechanism> - mechanics definition

<http://www.dtonline.org/apps/infopage/app?3&5&1&0&1&0> - pneumatics definition

Achievements and inventions of John Boyd Dunlop

DATA Projects on a Page - Yr 3/4 Levers and Linkages

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Pop-up and lever/link cards	Year:	4	Term:	Autumn 2
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Links to prior learning

Children will have previously explored and used mechanisms such as flaps and sliders. Through packaging activities and previous projects at KS1 they will have gained experience of basic cutting, joining and finishing techniques with paper and card.

New learning

- What makes an appealing greetings card? What motifs are effective to fit with a Christmas theme? Do different people want different types of card?
- (IEA) What methods can be used to create 3D or moving cards?
- (IEA) What electronic effects can be used in greetings cards? Can we program an electrical message with symbols for a card?
- (FT) Can we use folds, levers and linkages to make movements/ effects?
- (Design) Can we create an original Xmas card design for a defined user, sketch and annotate a range of possible ideas, trial some mock-up devices and plan the main stages of making?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?

- Can we evaluate our progress and the final product in relation to the design brief and criteria, considering the aesthetics and quality finish of our product?

Preparation for future learning

To succeed, children will need to apply an iterative approach as there is likely to be a disparity between their initial concepts and achievable outcomes. Developing resilience and perseverance through this activity (using familiar materials) will prepare them for similar challenges in the Summer and following years when they will also be manipulating less familiar resources. Research will provide ideas which may be returned to during their Enterprise project in Year 6.

Key vocabulary

Specific: mechanism, lever, linkage, pivot, guide,

system, input, process, output; linear, rotary, reciprocating

Generic: user, purpose, function, design, model, prototype, sketch, original, investigate, evaluate, label, drawing, aesthetics, appeal.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils will design, make and evaluate their own pop up Christmas card

What teachers need to know

DATA Projects on a Page - Yr 3/4 Levers and Linkages

Minster Teaching Schools Alliance resources.

CPD plus the Micro:bit webpage to guide creation of control components.

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Italian food - pasta and sauce making	Year:	4	Term:	Spring 2
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Links to prior learning

This unit revisits learning from Year 3, reinforcing knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. Children will build on previous experience to use a wider range of appropriate equipment and utensils, and apply a wider range of techniques for measuring out, preparing and combining ingredients.

New learning

- What are staple foods in Italy and the wider Mediterranean? What specific crops grow well in a Mediterranean Climate?
- (IEA) What Italian food products are available? Carry out a sensory evaluation of some key ingredients (pesto, olives, polenta, Parmesan, Prosciutto) Examine traditional recipes.
- (FT) Can we prepare ingredients hygienically and safely, using the bridge and claw technique, grating, peeling, chopping, slicing and mixing?
- (Design) Can we adapt a recipe to create an original sauce for a stated user (Eg vegetarian) and purpose, and plan the main stages of making?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?

- Can we evaluate our recipe and final product in relation to the design brief and criteria, considering originality and flavour.

Preparation for future learning

Children can use knowledge from their food technology experiences when they consider climate in greater detail in the Summer. They can relate the use of wheat/grains products across cultures when considering bread as a staple in Year 6.

Key vocabulary

Specific: starches, carbohydrates, proteins, fruit and vegetables, vitamins, minerals, oils and fats, dairy, sugar and salt.

Names of specific ingredients, equipment, utensils, bridge and claw technique, hygienic

Recipe, sauce, texture, sweet, tangy, sharp, sour, hot, appearance, smell, greasy, moist, fresh, savoury.

Generic: user, purpose, design, recipe, original, sensory evaluation, function.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils will design, make and evaluate their own pasta sauce

What teachers need to know

Prior to undertaking this project risk assessments should be carried out, including identifying whether there are children who are not permitted to taste or handle any food ingredients or products.

DATA Projects on a Page - Yr 3/4 Healthy and varied diet

Bridge and Claw: https://www.youtube.com/watch?v=HY_ygiwVICM

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Iron Man - circuits	Year:	4	Term:	Summer 2
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Links to prior learning

The unit links with learning in English and Science. In the latter, they will have constructed a simple series electrical circuit, using bulbs, switches and buzzers. They will have previously joined a variety of construction materials using glue and other fixings.

New learning

- What uses do we make of electricity in our modern world? What effects have those had? What safety issues are there? Key events and Individuals - introduce Edison and Bell.
- (IEA) What examples of relevant battery-powered products are there? How do components differ? What can we learn from disassembling them?
- (FT) How can we make safe, functioning circuits, which include a switch, and detect faults? How do we avoid short circuits? How can we use micro:bits to add an additional effect in response to a sensor.?
- (Design) Can we design and plan to build a functioning Iron Man head to attract customers to an exhibition/business? Can we generate a range of realistic ideas, perhaps using cross-sectional and exploded diagrams, to communicate them?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?

- Can we evaluate our progress and the final product in relation to the design criteria?

Preparation for future learning

Consideration of our use of electricity raises the issue of energy and sustainability in anticipation of Year 6 Geography. Children will use circuits to generate movement in their work on gears and moving vehicles in year 6. Experience with card constructions for their circuits supports them in facing similar challenges - but with unfamiliar materials and a greater need for precision measurement - in Year 6.

Key vocabulary

Specific: series circuit, fault, short circuit, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, motor, crocodile clip, wire cutters, connecting block

control, program, system, input device, output device

Generic: user, purpose, design, model, original, investigate, evaluate, label, diagram, sketch, aesthetics, function.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils design, build, test and evaluate a functioning Iron Man head

What teachers need to know

DATA Projects on a Page - Yr 3/4 Simple circuits and switches - especially Instant CPD and Teacher Tips.

If children require 2 light up eyes, they will need to be shown how to create a simple parallel circuit.

<https://www.bbc.co.uk/bitesize/guides/z437hyc/revision/1>

CPD plus the Micro:bit webpage to guide creation of control components.

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Felt toy/ decoration	Year:	5	Term:	Autumn 2
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Links to prior learning

This unit extends joining skills from the Year 3 Enterprise project, increasing the choice of sewing techniques available. They will have had experience of making and using simple pattern pieces.

New learning

- What materials are we aware of? Key Events and Individuals: see What teachers need to know. (revise Yr 3 individuals)
- (IEA) How have designers used fabrics to make appealing products? What are their users, purposes, functions? Revise *Yr3 learning of* how existing products have been constructed and investigate examples, disassembling if possible.
- (FT) (Revision) then... What new stitching techniques can we use? Discuss seams and pinning, starting and finishing.
- (FT) CAD option: using on-line pattern making software to generate pattern pieces. Investigate using art packages on the computer to design prints that can be applied to textiles using iron transfer paper.
- (Design) can we use research to generate our own design criteria, create an original design, communicate a range of possible ideas, and plan the main stages of making?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?

- Can we evaluate our progress and the final product in relation to the design brief and criteria, considering the aesthetics and quality finish of our product.

Preparation for future learning

Children may choose to incorporate a fabric element in their Enterprise project in Year 6.

Key vocabulary

Specific: felt, button, structure, finishing technique, templates, stitch, seam, seam allowance, wadding, kapok reinforce, right side, wrong side, hem, template, pattern pieces iron transfer paper

Generic: user, purpose, design, prototype, mock up, innovation, investigate, evaluate, aesthetics, function, pattern piece.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils design, make and evaluate their own felt toy/ Christmas decoration

What teachers need to know

DATA Projects on a Page - Yr 5/6 - Combining different fabric shapes

Stitching and other joining methods - running and oversew stitch (Revision). Blanket and backstitch. Children could be extended with embroidery and decorative stitches: lazy daisy, chain, stem or satin.

Decorative techniques including use of applique (stitched or ironed on), embroidery stitches. Extension through re-purposing products or components, or use of different materials (ribbons, bells, pipe cleaners, googly eyes...) should be encouraged. Glue guns may be required but used only by staff or under 1:1 supervision.

<http://www.holiday-crafts-and-creations.com/transfer-designs-onto-felt.html>

Key Events and innovators: Introduce felt history - felt may be the oldest known textile and has uses beyond crafts (eg damping instruments and machinery sounds) and contrast with modern man-made fibres. John Rex Whinfield and James Tennant Dickson were British chemists who investigated and produced the most commonly used man-made fibre: polyester

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Earthquake proof building	Year:	5	Term:	Spring 2
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Links to prior learning

- Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials in year 4.
- Basic understanding of what structures are and how they can be made stronger, stiffer and more stable.

New learning

- (IEA) Children use web-based research to identify features modern buildings have to withstand an earthquake.
- (IEA) children investigate frame structures, considering shapes and *reinforcements*. Key events and individuals: S Sauvestre – Eiffel Tower; T F Pritchard – Iron Bridge.
- (FT) How can frames be built and reinforced in the classroom? (paper tubes, cuboids girders) How can joints be made?
- (FT) How can a micro:bit be programmed to provide alarms and alerts in response to a shake?
- (Design) Can we create specifications and design an earthquake proof building, producing detailed annotated drawings and a step-by-step plan, sketch and annotate a range of possible ideas, and plan the main stages of making?
- (Make) Can we assemble a prototype or parts of a structure to test our initial design, using our knowledge, skills and understanding from IEAs and FTs? Can we evaluate or progress and improve our design?
- (Make) Can we work with accuracy to assemble our model?

- Can we evaluate our final product in relation to the design brief and criteria, considering functionality and authenticity.

Preparation for future learning

Children return to frame structures in Year 6 with the addition of a less familiar material and additional components.

Key vocabulary

Specific: frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, foundations, cross bracing, beams, girders, shear walls, diaphragm floors.

Generic: user, purpose, design, model, prototype, investigate, evaluate, label, drawing, function.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils design, make, test and evaluate their own earthquake proof structure

What teachers need to know

This project could lend itself to collaborative learning, with children producing a group, rather than individual, product.

DATA Projects on a Page - Yr 5/6 - Frame Structures

Ideas folder on server. Basics of earthquake proofing - things that can be applied in the children's making (eg cross bracing and deep/ 'rubber' foundations) and those they can't model (shatterproof windows, emergency power cut offs).

Key events and individuals: S Sauvestre – Eiffel Tower; T F Pritchard – Iron Bridge.

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Cams (shop display/ toy/ scenery/ other)	Year:	5	Term:	Summer 2
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Links to prior learning

Mechanisms in previous years have provided some basic understanding of different types of movement. Children have experience of cutting and joining techniques and an understanding of how to strengthen and stiffen structures.

New learning

- (IEA) What types of movements do we see around us at home and in school? Discuss different types (eg rotary, reciprocating).
- What can we learn from examining actual models or toys which use cams? Video, photographs, computer models may be needed.
Can we predict movements from just a cam we are given?
- (FT) Can we measure carefully and use a hand drill safely to make an off-centre cam and position it accurately in a housing. Can we use a hammer and nails to join wood?
- (Design) Can we, as a class, develop an authentic and meaningful design brief? Can we generate innovative ideas, communicate ideas through detailed, annotated sketches which indicate design decisions and how mechanisms will work.
- (Make) Can we make a high quality, smoothly functioning product using our knowledge, skills and understanding from IEAs and FTs?

- Can we evaluate our progress and the final product in relation to the design brief, considering functionality in particular. How would difficulties be overcome/ avoided in future?

Preparation for future learning

Children will work with wood again in Year 6, drawing upon this project, and extending their skills in using the material. They may choose to incorporate a mechanical element in their Enterprise project in Year 6.

Key vocabulary

Specific: cam, snail cam, off-centre cam, peg cam, pear shaped cam, follower, axle, shaft, crank, handle, housing, framework, G-clamps, bench hooks, hand drill, dowel

rotation, rotary motion, oscillating motion, reciprocating motion

annotated sketches, exploded diagrams, mechanical system, input movement, process, output movement

Generic: user, purpose, design, model, prototype, sketch, original, investigate, evaluate label, drawing, aesthetics, function, pattern piece.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils will design, create and evaluate their own moving toy with a cam mechanism

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Enterprise	Year:	6	Term:	Autumn 2
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Links to prior learning

This unit invites children to take their prior learning into the real-life commercial setting of the Christmas Fair. They will follow the design process they have learned to create products for sale. Some will use skills that have been developed or introduced in previous projects.

New learning

- (IEA) What customers will there be at the Christmas fair and what sort of products would attract them? What current products are there that might be adapted for our market? What resources/ skills would we require? Which ideas are feasible?
- (Design) Can we generate and pitch a range of innovative ideas for a target audience and use, plan the main stages of making and decide how to manage our budget? What new skills will we require to be taught as FPTs?
- (IEA) Can we carry out market research to decide which product to manufacture?
- (FT) What new skills/ knowledge do we require?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?
- Can we market our product using written and video adverts?

- Can we evaluate our progress and the final product in relation to the design brief and criteria, considering the quality finish and originality of their product, plus 'the bottom line'.

Preparation for future learning

Children will use the experience in future commercial exercises at KS3. Some manufacturing techniques shared as FTs will be re-used in the Moving Vehicle project.

Key vocabulary

Specific: costings, budget, market research, pitch, profit, loss, receipts, reimbursement, orders, turn-over, prices, asking price, break-even.

Generic: user, purpose, design, model, prototype, sketch, original, investigate, evaluate label, drawing, aesthetics, function, pattern piece.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils will design, make, advertise sell and evaluate their own enterprise product

What teachers need to know

Business & enterprise terminology

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Bread	Year:	6	Term:	Spring 2
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Links to prior learning

This unit revisits learning about food groups and nutrition, and the safe, hygienic production of healthy food. It builds upon the skills already learned for using appropriate equipment and utensils, and for measuring, preparing and combining ingredients. Children will have the opportunity to develop skills in creating packaging from nets.

New learning

- What individuals/ organisations (eg Jamie Oliver, Change4life) have promoted seasonality, local produce and healthy eating?
- (IEA) Can we carry out relevant research into existing products (including personal/cultural preferences, ensuring a healthy diet, meeting dietary needs and the availability of locally sourced/seasonal/organic ingredients)? Can we carry out sensory evaluations of a variety of existing food products and ingredients relating to the project?
- (FT) How do we measure out, cut, shape and combine ingredients, use utensils and equipment safely and hygienically.?
- (Design) Can we adapt a basic recipe to create an original design for a stated user and purpose, sketch and annotate a range of possible ideas, and plan the main stages of making?
- (Make) Can we assemble and bake our product using our knowledge, skills and understanding from IEAs and FTs? Can we use previous learning in KS2 to design our own packaging box?

- Can we evaluate our progress and the final product in relation to the design brief and criteria?

Preparation for future learning

It links to the children's learning about microorganisms in Science. There will also be links to food production and the range of food available in their learning about sustainability and globalisation in Geography.

Key vocabulary

Specific: ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, savoury

fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, source, seasonality

utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble

Generic: user, purpose, design, original, investigate, evaluate, aesthetics, function.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils design, make and evaluate their own loaf of bread

What teachers need to know

DATA Projects on a Page - Yr 5/6 - celebrating culture and seasonality

SMART board links to the history of bread-making and types of bread from around the world.

DESIGN TECHNOLOGY UNIT PLANNER

Unit:	Moving Vehicle	Year:	6	Term:	Summer 2
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Links to prior learning

This unit revisits knowledge of circuits from Years 4 and 5, using their skills to drive a different output, with a new mechanism. It will also build upon the wider range of tools explored in Year 5's Cam Toy project and the skills required to reinforce a frame structure from that same year. The element which considers how vehicles are powered continues the theme of sustainability from Summer 1's Geography curriculum.

New learning

- (IEA) What types of moving vehicles are there? How do designs differ?
- (IEA) What are the structures that are found in land vehicles? What can we learn from disassembling some examples?
- (FT) How can we cut, join and reinforce a chassis? How can we ensure that a pulley and axles function effectively?
- (Design) Can we use CAD to create and annotate an innovative design for a moving vehicle, selecting a means of propulsion, and plan the main stages of making? Can we programme a movement response using micro:bits?
- (Make) Can we assemble our product using our knowledge, skills and understanding from IEAs and FTs?
- Can we evaluate our final product in relation to the design brief and criteria, considering the aesthetics and quality finish of their product.

Preparation for future learning

Completes our curriculum in preparation for KS3.

Key vocabulary

Specific: pulley, drive belt, rotation, driver, follower, input, process, output, transmit, axle, motor, circuit, switch, circuit diagram, mechanical system, electrical system

Generic: user, purpose, design, model, investigate, evaluate, aesthetics, function.

Big ideas and key concepts

All key concepts are re-visited in each unit, with the addition of Healthy Eating and Nutrition in Food Technology projects.

Assessment opportunity

Pupils design, make, test and evaluate their own moving vehicle with pulleys and gears

What teachers need to know

DATA Projects on a Page - Yr 5/6 - mechanical systems - pulleys or gears.