Folly View Primary Schools

Long Term Plan 2025/26

SUBJECT: DT

Vision: Our children will connect with the world and learn to become creative and excited problems solvers allowing them to design, make and evaluate something, for someone, for some purpose.

	Mechanisms		Structures		Food		Textiles		Electrical systems	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6				
Pre-School	**Term 1 - Who am I, Who Are you?** **Nursery rhymes** **Term 2 - What happens at night?** **What do we celebrate at this time of year?**		**Term 3 - What makes a good toy?** Design and make robots and make a big bus/train model from large boxes. **Term 4 - What makes a good story? Traditional tales**		**Term 5 - What happens in the garden?** **Minibeasts and life cycles** **Term 6 - Where would you like to go?**					
	DT is also thread through the continuous provision, allowing the children to explore and develop skills using a wide range of construction resources every day, indoors and in the outside environment. The children make models using a variety of resources throughout the year and we have a making station where the children can explore different materials to create models of their choice. We introduce a wide range of craft/DT (mixed media) activities (linked to our termly themes and topics) every week. We use construction resources every week as part of our continuous provision and have a brilliant selection of resources including large wooden building blocks. We do cooking every Friday. We do junk modelling and cutting /sticking activities termly. We have asked for some weaving frames for outdoors.									
Key Vocabulary	stick, glue, cut, tape, fix, join, balance, build, strong, stronger, strongest, tall, taller, tallest, short, shorter, shortest, materials, rough, smooth, soft, silky, patterned, Ingredients, chop, cut, mix, stir tape, scissors, glue, stick, make, like, better									
SMSC	Spiritual – Creating models encourages pupils to be creative and exercises their imagination. They begin to reflect on their own creation. Moral – Children begin to talk about what they like about their friends' creations. Social – Children will learn to listen to others as they work together. Cultural – Children will begin to show awareness of design and technology around them e.g buildings. Children will show an interest in food from around the world.									

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Reception	**<u>Term 1</u> - Settling In / Who am I?** **All about me/ Autumn & Harvest** **<u>Term 2</u> - Tell me a story.** **Traditional Tales/ Christmas**	**<u>Term 3</u> - What Happens in our world?** **<u>Term 4</u> - How do we get around? – Transport**	**<u>Term 5</u> - What's happening in our garden? - Minibeasts and life cycles** - **<u>Term 6</u> - Water, water, everywhere! - Water and Growing**
	Food – Soup EYFS DT Lesson Plans | Cooking And Nutrition **Knowledge –** ***In this unit, children explore the differences between fruits and vegetables using their senses (taste, texture, smell etc.). They listen to the story 'The best pumpkin soup' and discuss the key ingredients the characters used before developing a class-based vegetable soup recipe.*** **Outcomes** – Communication and language: • Learn new vocabulary. • Use new vocabulary throughout the day. • **ELG: Speaking:** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. Personal, social and emotional development • Know and talk about the different factors that support their overall health and wellbeing: healthy eating. • **ELG: Managing self:** Manage their own basic hygiene and personal needs, including…understanding the importance of healthy food choices Understanding the world • Explore the natural world around them. • **ELG: The Natural World:** Explore the natural world around them, making observations and drawing pictures of animals and plants.	**Structures – Boats** **Making Boats - EYFS DT Lesson Plans** **Knowledge -** ***In this unit, children explore what is meant by 'waterproof,' 'floating,' and 'sinking,' then experiment and make predictions with various materials to carry out a series of tests. They learn about the different features of EYFS boats and ships before investigating their shape and structures to build their own.*** ***Outcomes –*** Communication and language • Articulate their ideas and thoughts in well-formed sentences. • Connect one idea or action to another using a range of connectives. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • **ELG: Speaking:** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary • **ELG: Speaking:** Offer explanations for why things might happen. Understanding the world • Explore the natural world around them. • **ELG: The Natural World:** Explore the natural world around them, making observations and drawing pictures of animals and plants Characteristics of effective learning	**Textiles – Bookmarks** **EYFS DT Lesson Plans | Textiles | Bookmarks** **Knowledge -** ***Pupils develop and practise threading and weaving techniques using various materials and objects. They look at the history of the bookmark from Victorian times versus modern-day styles. The pupils apply their knowledge and skills to design and sew their own bookmarks.*** ***Outcomes -*** Physical development Develop their small motor skills so that they can use a range of tools competently, safely and confidently. ELG: Fine Motor Skills: Use a range of small tools, including scissors, paint brushes and cutlery. Expressive arts and design ELG: Creating with materials: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Characteristics of effective learning > Playing and exploring > Active learning

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	Characteristics of effective learning > Playing and exploring	> Playing and exploring > Active learning > Creating and thinking critically	
Key Vocabulary	Seeds, roots, leaves, stem, plant, flower, bud, juicy, sweet, sour, dry, wet, bitter, chewy, watery		
SMSC	Spiritual – Creating models encourages pupils to be creative and exercises their imagination. They begin to reflect on their own creation. Moral – Children begin to talk about what they like about their friends' creations. Social – Children will learn to listen to others as they work together. Cultural – Children will begin to show awareness of design and technology around them e.g buildings. Children will show an interest in food from around the world.		
Year 1	**Mechanisms** – Moving story scene – Making a story scene with sliders and levers https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-1/mechanisms-making-a-moving-story-book/ **Outcome:** - Identify whether a mechanism is a side-to-side slider or an up-and-down slider and determine what movement the mechanism will make. -Clearly label drawings to show which parts of their design will move and in which direction. -Make a picture that meets the design criteria, with parts that move purposefully as planned. -Evaluate the main strengths and weaknesses of their design and suggest alterations **Skills:** -Explaining how to adapt mechanisms, using bridges or guides to control the movement. -Designing a moving storybook for a given audience. -Following a design to create moving models that use levers and sliders. -Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.	**Structures –** Freestanding structures- Design, make, evaluate a chair for baby bear. https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-2/structures-baby-bears-chair/ **Outcome**: -Identify man-made and natural structures. -Identify stable and unstable structural shapes. -Contribute to discussions. -Identify features that make a chair stable. -Work independently to make a stable structure, following a demonstration. -Explain how their ideas would be suitable for Baby Bear. -Produce a model that supports a teddy, using the appropriate materials and construction techniques. -Explain how they made their model strong, stiff and stable. **Skills:** -Generating and communicating ideas using sketching and modelling. -Learning about different types of structures, found in the natural world and in everyday objects. -Making a structure according to design criteria. -Creating joints and structures from paper/card and tape. -Building a strong and stiff structure by folding paper.	**Food** – Cooking and nutrition – Smoothie - Design make and evaluate a smoothie**.** https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-1/cooking-and-nutrition-smoothies/ **Outcome:** -Describe fruits and vegetables and explain how to identify fruits. -Name a range of places that fruits and vegetables grow. -Describe basic characteristics of fruit and vegetables. -Prepare fruits and vegetables to make a smoothie. **Skills:** Designing smoothie carton packaging by hand. Chopping fruit and vegetables safely to make a smoothie. Juicing fruits to make a smoothie. Identifying if a food is a fruit. Learning where and how fruits and vegetables grow. Tasting and evaluating different foods. Describing appearance, smell and taste. Suggesting information to be included on packaging. **Knowledge:** That a blender is a machine which mixes ingredients together into a smooth liquid. That a fruit has seeds and a vegetable does not. That fruits grow on trees or vines.

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	-Reviewing the success of a product by testing it with its intended audience **Knowledge:** -A mechanism is the parts of an object that move together. -A slider mechanism moves an object from side to side or up and down. -A slider mechanism has a slider, slots, guides and an object. -Bridges and guides are bits of card that purposefully restrict the movement of the slider.	-Exploring the features of structures. -Comparing the stability of different shapes. -Testing the strength of their own structures. -Identifying the weakest part of a structure. -Evaluating the strength, stiffness and stability of their own structure. **Knowledge:** -To know that shapes and structures with wide, flat bases or legs are the most stable. -To understand that the shape of a structure affects its strength. -To know that materials can be manipulated to improve strength and stiffness. -To know that a structure is something which has been formed or made from parts. -To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.	That vegetables can grow either above or below ground. That vegetables are any edible part of a plant.
Key Vocabulary	Adapt, assemble, design, design criteria, input, mechanism, model, sliders, test	cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, point, corner, straight, curved, metal, wood, plastic, circle, triangle, rectangle, cuboid, cube, cylinder design criteria, man-made, natural, properties, structure, stable, shape, model, test	fruit and vegetable names, names of equipment and utensils, sensory vocabulary eg soft, juicy, crunchy, sweet, silky, smooth, sharp, crisp, sour, hard, flesh skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular design, make, evaluate, user, purpose, ideas, design criteria, product, function, compare, evaluate, **blend, blender, cut, ingredients, juice, recipe,** chopping board, cut, flavour, fork, healthy, ingredients, juice, juicer, leaf, plant ,recipe root, seed ,select , smoothie, stem, table knife, ,taste, tree, vegetable, vine
SMSC	Spiritual - Ability to show courage, persistence and perseverance by designing for a purpose, making and evaluating their end product to improve their work. Opportunities for creativity through designing, making and using construction materials. Working towards developing the 'whole' by looking at the scale and perspective of the design and finished product particularly during the evaluation process. Moral – Feeding back on each other's work by respecting others' needs, interests and feelings and when exploring and evaluating existing products and their own designs and end products. Making responsible and reasoned judgements about their own work and others. Social – Collaborative DT work by working successfully as a member of a group or team, resolving conflicts. An ability to show respect for people, living things, property and the environment – showing respect for other people's work. Cultural - Developing appreciation of structures and existing products for example buildings in the local area such as the Folly Tower, Town Hall. Children will continue to learn about food from other countries.		

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Year 2	**Mechanisms –** Wheels and axles – Making a royal carriage for the King's terrier (Linked to History topic) https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-1/mechanisms-wheels-and-axles/ **Outcome:** -Explain that wheels move because they are attached to an axle. -Recognise that wheels and axles are used in everyday life, not just in cars. -Identify and explain vehicle design flaws using the correct vocabulary. -Design a vehicle that includes functioning wheels, axles and axle holders. -Make a moving vehicle with working wheels and axles. -Explain what must be changed if there are any operational issues. **Skills:** -Designing a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move. -Creating clearly labelled drawings that illustrate movement. -Adapting mechanisms. -Testing mechanisms, identifying what stops wheels from turning, knowing that a wheel needs an axle in order to move. -Introduction to sawing **Knowledge:** -To know that wheels need to be round to rotate and move. -To understand that for a wheel to move it must be attached to a rotating axle. -To know that an axle moves within an axle holder which is fixed to the vehicle or toy. -To know that the frame of a vehicle (chassis) needs to be balanced.	**Food** – Cooking and Nutrition – Balanced diet - Design make and evaluate a tasty wrap. https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-2/cooking-and-nutrition-balanced-diet/ **Outcome:** -Name the main food groups and identify foods that belong to each group. -Describe the taste, feel and smell of a given food. -Think of three different wrap ideas, considering flavour combinations. -Construct a wrap that meets the design brief and their plan. **Skills:** -Chopping foods safely to make a wrap. -Grating foods to make a wrap. -Snipping smaller foods instead of cutting. -Spreading soft foods to make a wrap. -Identifying the five food groups. -Learning about a balanced diet. -Tasting and evaluating different food combinations. -Describing appearance, smell and taste. -Designing three wrap ideas. **Knowledge:** -That 'diet' means the food and drink that a person or animal usually eats. -What makes a balanced diet. -That the five main food groups are: carbohydrates, fruits and vegetables, protein, dairy and oils and spreads. -That I should eat a range of different foods from each food group, and roughly how much of each food group. -That 'ingredients' means the items in a mixture or recipe. -How to cut, grate, snip and spread to prepare foods. -How to review and give a score to evaluate.	**Textiles** – Puppets - Design, make, evaluate hand puppet of someone who has made a difference to our world. https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-1/textiles-puppets/ **Outcome:** -Join fabrics together using pins, staples or glue. -Design a puppet and use a template. -Join their two puppets' faces together as one. -Decorate a puppet to match their design. **Skills:** -Using a template to create a design for a puppet. -Cutting fabric neatly with scissors. -Using joining methods to decorate a puppet. -Sequencing steps for construction. -Reflecting on a finished product, explaining likes and dislikes. **Knowledge:** -To know that 'joining technique' means connecting two pieces of material together. -To know that there are various temporary methods of joining fabric by using staples, glue or pins. -To understand that different techniques for joining materials can be used for different purposes. -To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. -To know that drawing a design idea is useful to see how an idea will look.

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	-To know some real-life items that use wheels.		
Key Vocabulary	vehicle, wheel, axle, axle holder, chassis, body, cab,dowel, diagram, equipment, wheel, assembling, cutting, joining, shaping, finishing, free moving, fixed, mechanism, names of tools, equipment and materials used design, make, evaluate, user, purpose, ideas, design criteria, product, functional	Appearance, balanced, carbohydrates chopping board, combination, cut, dairy, design, design brief, diet, evaluate, feel, fruit, grate, grater, ingredients, menu, oils, proteins, review, scissors, smell, snip, spread, spreads, table knife, vegetables.	Decorate, design, fabric, glue, model, hand puppet, safety pin, staple, stencil template
SMSC	Spiritual - Ability to show courage, persistence and perseverance by designing for a purpose, making and evaluating their end product to improve their work. Opportunities for creativity through designing, making and using construction materials. Working towards developing the 'whole' by looking at the scale and perspective of the design and finished product particularly during the evaluation process. Moral – Feeding back on each other's work by respecting others' needs, interests and feelings and when exploring and evaluating existing products and their own designs and end products. Making responsible and reasoned judgements about their own work and others. Social – Collaborative DT work by working successfully as a member of a group or team, resolving conflicts. An ability to show respect for people, living things, property and the environment – showing respect for other people's work. Cultural - Developing appreciation of structures and existing products for example buildings in the local area such as the Folly Tower, Town Hall. Children will continue to learn about food from other countries.		
Year 3	**Structures** – Constructing castles – Designing a castle with key features to appeal to a specific person/purpose https://www.kapowprimary.com/subjects/design-technology/lower-key-stage-2/year-3/structures-constructing-a-castle/ **Outcome**: -Draw and label a simple castle that includes the most common features. -Recognise that a castle is made up of multiple 3D shapes. -Design a castle with key features which satisfy a given purpose. -Score or cut along lines on the net of a 2D shape. -Use glue to securely assemble geometric shapes. -Utilise skills to build a complex structure from simple geometric shapes. -Evaluate their work by answering simple questions. **Skills:** -Designing a castle with key features to appeal to a specific person/purpose.	**Textiles – Cross stitch and appliqué** - Egyptian collars - Designing and making a template for an Egyptian collar and applying individual design criteria. https://www.kapowprimary.com/subjects/design-technology/lower-key-stage-2/year-3/textiles-cushions-or-egyptian-collars/textiles-egyptian-collars/ **Outcome:** -Demonstrate their ability to use cross-stitch as a decorative feature or to join two pieces of fabric together. -Develop appliqué designs based on design criteria. -Design, cut and shape their template for an usekh or wesekh collar with increasing accuracy. -Decorate their Egyptian collar using a variety of techniques, such as appliqué, cross-stitch, beads, buttons and pinking. -Measure and attach a ribbon with a running stitch. Recognise different types and qualities of fabrics. Explain the aesthetic and functional properties of some of their material choices. **Skills:**	**Food – Cooking and Nutrition** - Eating seasonally - Design a tart recipe using seasonal ingredients. https://www.kapowprimary.com/subjects/design-technology/lower-key-stage-2/year-3/cooking-and-nutrition-eating-seasonally/ **Outcome:** -Explain that fruits and vegetables grow in different countries based on their climates. -Understand that seasonal fruits and vegetables grow in a given season. -Understand that eating seasonal fruit and vegetables positively affects the environment. -Design a tart recipe using seasonal ingredients. **Skills:** -Describing how climate affects where foods grow. -Identifying seasonal ingredients from the UK. -Tasting seasonal ingredients. -Describing the texture and flavour of ingredients. -Peeling foods by hand or with a peeler.

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	-Drawing and labelling a castle design using 2D shapes. -Constructing a range of 3D geometric shapes using nets. -Creating special features for individual designs. -Making facades from a range of recycled materials. -Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design. -Suggesting points for modification of the individual designs. **Knowledge:** -To understand that wide and flat based objects are more stable. -To understand the importance of strength and stiffness in structures. -To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse – and their purpose. -To know that a facade is the front of a structure. -To understand that a castle needed to be strong and stable to withstand enemy attack How will you make sure your product works well and has the right appearance?	-Designing and making a template for an Egyptian collar and applying individual design criteria. -Following their design criteria to create an Egyptian collar. -Selecting and cutting fabrics with ease using fabric scissors. -Threading needles with greater independence. -Tying knots with greater independence. -Sewing cross stitch to decorate or join fabric. -Decorating fabric using appliqué, beads (or other embellishments), ribbon and pinking scissors. -Evaluating an end product. **Knowledge:** -To know that appliqué is a way of mending or decorating a textile by applying smaller pieces of fabric. -To understand that a product's function relies on material choices. -To identify and explain some materials and explain their aesthetic and functional properties.	-Cutting ingredients safely. Choosing ingredients based on a design brief. Following the instructions within a recipe. Describing the benefits of seasonal fruits and vegetables and their impact on the environment. **Knowledge:** -That seasonal means foods that grow in a given season in a given country. -Some seasonal foods that grow in the UK and what season they grow in. - That eating seasonal foods can have a positive impact on the environment. -How to describe the flavour and texture of foods. How to cut and peel safely. -That the appearance of food is as important as taste. -That similar coloured fruits and vegetables often have similar nutritional benefits.
Key Vocabulary	2D, 3D, castle, design, key features, net, scoring, shape, stable, stiff, strong, structure, tab	Asymmetrical, appliqué, cotton, cross-stitch, embellish, fabric, patch, pinking, polyester, running stitch, silk, symmetrical, template, thread, unique	Appearance, arid, climate, complementary, country, cut, design, evaluate, export, fruit, grate, import, ingredients, Mediterranean mock-up, mountain, peel, polar ,seasonal, seasons, snip taste, temperate, texture, tropical vegetable ,weather
SMSC	Spiritual – Children are encouraged to be creative and exercise their imagination. There will be opportunities for the children to be inspired and use their insight as they develop ideas. The children will reflect on their own ideas and that of others, and wonder about the purpose of human technological achievement and they are encouraged to appreciate and reflect upon the aesthetic nature of materials and design. Moral - Children's moral development is supported by raising awareness of moral dilemmas by encouraging children to value the environment and its natural resources and to consider the environmental impact of everyday products. Pupils learn to become responsible consumers. Social - Children are taught to cooperate when sharing equipment and help one another and are encouraged to consider the safety of those around them, as they move about the classroom and use equipment. Our children are expected to be respectful during peer assessment. Listening and contributing in a manner which allows for constructive criticism. In Design and Technology shared work encourages pupils to consider other viewpoints and communicate effectively. Cultural – Children are encouraged to reflect on product, inventions and the variety of materials used and the ways in which they can improve the quality of life. Children learn how different cultures have contributed to technology and reflect on products and inventions, the diversity of materials and ways in which design can improve the quality of our lives.		

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Year 4	**Mechanisms** – Mechanical cars - Making and designing mechanical cars that use different methods of movement or creating and developing a car with a working slingshot mechanism. **Teachers to choose from option 1 or option 2:** **Option 1:** https://www.kapowprimary.com/subjects/design-technology/lower-key-stage-2/year-4/mechanical-systems/option-1-new-mechanical-cars/ **Or** **Option 2:** https://www.kapowprimary.com/subjects/design-technology/lower-key-stage-2/year-4/mechanical-systems/mechanical-systems-making-a-slingshot-car/ **Outcome:** -Describe key design improvements in the history of the automobile. - Measure and compare the distance travelled by different mechanical cars. - Choose and use appropriate tools and materials to make mechanical cars. - Draw exploded diagrams and annotated sketches of my different mechanical cars. - Use a problem statement to identify the design criteria. Assess the product against the design criteria. - Conduct market research into existing products. -Provide specific feedback and adjust my design to incorporate customer feedback. **Skills:** **Design** -Taking part in structured brainstorming sessions. -Developing drawing and sketching skills with a focus on clarity and simplicity. -Beginning to recognise the benefit of a range of diagram types or prototypes to communicate ideas. (e.g. sketches,	**Structures** – Pavilions - Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect https://www.kapowprimary.com/subjects/design-technology/lower-key-stage-2/year-4/structure-pavilions/ **- Outcome:** -Produce a range of free-standing frame structures of different shapes and sizes. -Design a pavilion that is strong, stable and aesthetically pleasing. -Select appropriate materials and construction techniques to create a stable, free-standing frame structure. -Select appropriate materials and techniques to add cladding to their pavilion. **Skills:** -Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect. -Building frame structures designed to support weight. -Creating a range of different shaped frame structures. -Making a variety of free-standing frame structures of different shapes and sizes. -Selecting appropriate materials to build a strong structure and for the cladding. -Reinforcing corners to strengthen a structure. -Creating a design in accordance with a plan. -Learning to create different textural effects with materials. **Knowledge:** -To understand what a frame structure is. -To know that a 'free-standing' structure is one that can stand on its own. -To know that a pavilion is a decorative building or structure for leisure activities. -To know that cladding can be applied to structures for different effects. -To know that aesthetics are how a product looks.	**Electrical Systems** – Simple circuits and switches Design, make and evaluate a torch with a switch https://www.kapowprimary.com/subjects/design-technology/lower-key-stage-2/year-4/electrical-systems-torches/ **Outcome:** -Identify electrical products and explain why they are useful. -Help to make a working switch. -Identify the features of a torch and how it works. -Describe what makes a torch successful. -Create suitable designs that fit the success criteria and their own design criteria. -Create a functioning torch with a switch according to their design criteria. **Skills:** -Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas. -Making a torch with a working electrical circuit and switch. -Using appropriate equipment to cut and attach materials. -Assembling a torch according to the design and success criteria. -Evaluating electrical products. -Testing and evaluating the success of a final product. **Knowledge:** -Electrical conductors are materials which electricity can pass through. -Electrical insulators are materials which electricity cannot pass through. -A battery contains stored electricity that can be used to power products. -An electrical circuit must be complete for electricity to flow. -A switch can be used to complete and break an electrical circuit

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	cross-sectional diagrams, thumbnail sketches and exploded diagrams). -Creating prototypes using materials with similar properties to their final design. -Creating simple design criteria that outline basic functionality and appeal to individual users or target audiences. -Developing designs by adding details and justifications about materials, tools and methods. **Make** -Following detailed safety instructions. -Using a ruler as a measuring tool with increasing accuracy by creating spaced marks using millimetres and measuring lengths of objects. -Handle different sizes and types of scissors with confidence. -With close supervision, using a hot glue gun to join wooden materials (e.g. lolly sticks). **Knowledge:** **Design** To know: -Extra information on drawings or diagrams can help the user understand a design or idea. -An exploded diagram shows how the parts of a product fit together. -A prototype is a detailed model that helps users understand how a product will work. -A problem or need is something that a designer can help to solve. -A target audience is a group of people that might like the idea. **Make** To know: -Different tools and equipment have different dangers. -A ruler can be used to measure length. -Scissors are useful for cutting out complex shapes. -A hot glue gun can be used to join materials.		

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	-Different pieces of equipment will be used at different stages in a plan. **Evaluate** To know: -The better the suggestions, the better the feedback. -They can choose to use feedback or not. -Some products are more successful than others because of their function. -Designers and inventors create products. -Choices of materials and equipment can affect the final product. -Feedback is ideas and suggestions from other people that can help improve their work. **Technical** To know: -A mechanical system can allow us to move something more easily. -Mechanical systems have more than one mechanism that moves to make them work. -Mechanical systems are often hidden in products to make them look more appealing.		
Key Vocabulary	Bearing, chassis, force, machine, mechanism, prototype, target audience, energy, kinetic, air resistance, design, structure, graphics, research, model, template	3D shapes, Cladding, Design criteria, Innovative, Natural, Reinforce, Structure	Battery, bulb, buzzer, circuit diagram, component, conductor, electrical item, , electricity, electronic item, insulator, series circuit, switch, target audience, test, torch, wire
Culture Capital			Link to Science topic
SMSC	Spiritual – Children are encouraged to be creative and exercise their imagination. There will be opportunities for the children to be inspired and use their insight as they develop ideas. The children will reflect on their own ideas and that of others, and wonder about the purpose of human technological achievement and they are encouraged to appreciate and reflect upon the aesthetic nature of materials and design. Moral - Children's moral development is supported by raising awareness of moral dilemmas by encouraging children to value the environment and its natural resources and to consider the environmental impact of everyday products. Pupils learn to become responsible consumers. Social - Children are taught to cooperate when sharing equipment and help one another and are encouraged to consider the safety of those around them, as they move about the classroom and use equipment. Our children are expected to be respectful during peer assessment. Listening and contributing in a manner which allows for constructive criticism. In Design and Technology shared work encourages pupils to consider other viewpoints and communicate effectively.		

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	Cultural – Children are encouraged to reflect on product, inventions and the variety of materials used and the ways in which they can improve the quality of life. Children learn how different cultures have contributed to technology and reflect on products and inventions, the diversity of materials and ways in which design can improve the quality of our lives.		
Year 5	**Structures** – Frame structures - bridges Design, make, evaluate a bridge. https://www.kapowprimary.com/subjects/design-technology/upper-key-stage-2/year-5/structure-bridges/ **Outcome**: -Identify stronger and weaker shapes. -Recognise that supporting shapes can help increase the strength of a bridge, allowing it to hold more weight. -Identify beam, arch and truss bridges and describe their differences. -Use triangles to create simple truss bridges that support a load (weight). -Saw beams to the correct size, using a cutting mat. -Smooth down any rough cut edges with sandpaper. -Follow each stage of the truss bridge creation as instructed by their teacher. -Complete a bridge, with varying ranges of accuracy and finish, supported by the teacher. -Identify some areas for improvement, reinforcing their bridges as necessary. **Skills:** -Designing a stable structure that is able to support weight. -Creating a frame structure with focus on triangulation. -Making a range of different shaped beam bridges. -Using triangles to create truss bridges that span a given distance and support a load. -Building a wooden bridge structure. -Independently measuring and marking wood accurately. -Selecting appropriate tools and equipment for particular tasks. -Using the correct techniques to saw safely.	**Food** – *Developing a recipe - Learning a simple Bolognese recipe and adapting it to improve nutritional content*https://www.kapowprimary.com/subjects/design-technology/upper-key-stage-2/year-5/new-cooking-and-nutrition-developing-a-recipe/ **Outcome:** -Describe the process of beef production. -Research a traditional recipe and make changes to it. -Add nutritional value to a recipe by selecting ingredients. -Prepare and cook a version of Bolognese sauce. **Skills:** -Explaining the farm-to-fork process. -Researching existing recipes. -Suggesting alternative ingredients. -Analysing nutritional content. -Writing an alternative recipe. -Understanding cross-contamination. -Using preparation skills. -Designing a jar label. -Making a developed recipe. **Knowledge:** -That beef comes from cows reared on farms. -That recipes can be adapted to suit nutritional needs and dietary requirements. -That nutritional information is found on food packaging. -That coloured chopping boards can prevent cross-contamination. -That food packaging serves many purposes.	**Electrical Systems –** Doodlers - *Investigating an existing motorised product and problem-solving to understand its construction before developing their own.* https://www.kapowprimary.com/subjects/design-technology/upper-key-stage-2/year-5/electrical-systems-doodlers/ **Outcome:** -Identify simple circuit components (battery, bulb and switch) with a basic explanation of their function. -Explain that a series circuit is assembled in a loop to allow the electricity to flow along one path. -Describe a motor as a circuit component that changes electrical energy into movement. -Provide examples of motorised products that use movement to rotate or spin different parts. -Remove and replace different parts of a Doodler, as part of a team. -Suggest ways to switch the configuration to amend the form or function of the Doodler. -Explain, in an investigation report, each of the changes they made and the effect this had on the Doodler's ability to draw scribbles (function) and appearance (form). -Develop design criteria with consideration for the target user, the purpose of their Doodler, a key function and the Doodler's form and final appearance (e.g. fun, bright, soft). -Explain simply why their Doodler has a certain configuration based on the findings of their investigation (e.g. I used four pens because the Doodler would fall over with two). -Create a functional Doodler that creates scribbles on paper with or without a switch. -Identify and list each of the required materials, tools and circuit components required to build a Doodler.

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	-Identifying where a structure needs reinforcement and using card corners for support. -Explaining why selecting appropriate materials is an important part of the design process. -Understanding basic wood functional properties. -Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary. -Suggesting points for improvements for own bridges and those designed by others. **Knowledge:** -To understand some different ways to reinforce structures. -To understand how triangles can be used to reinforce bridges. -To know that properties are words that describe the form and function of materials. -To understand why material selection is important based on their properties. -To understand the material (functional and aesthetic) properties of wood.		-Explain simply the steps to assemble a Doodler as part of a set of instructions (or storyboard). -Write instructions to build a functional circuit, explaining how to identify if it is functional or not. -Provide suggestions to improve a peer's set of instructions after testing how effective they are at guiding someone. **Skills:** -Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. -Developing design criteria based on findings from investigating existing products. -Developing design criteria that clarifies the target user. -Altering a product's form and function by tinkering with its configuration. -Making a functional series circuit, incorporating a motor. -Constructing a product with consideration for the design criteria. -Breaking down the construction process into steps so that others can make the product. -Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. -Determining which parts of a product affect its function and which parts affect its form. -Analysing whether changes in configuration positively or negatively affect an existing product. -Peer evaluating a set of instructions to build a product. **Knowledge:** -To know that, in a series circuit, electricity only flows in one direction. -To know when there is a break in a series circuit, all components turn off. -To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. -To know a motorised product is one which uses a motor to function.
Key Vocabulary	beam bridge, arch bridge, truss bridge, strength, technique, corrugation, lamination, stiffness, rigid, factors, stability,	Abattoir, adaptation, balanced, beef, brand, cook, cross-contamination, cut, design, enhance, equipment, evaluate, farm,	circuit component, configuration, current, develop, DIY, investigate, motor, motorised

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	visual appeal, aesthetics, joints, mark out, hardwood, softwood, wood file/rasp, sandpaper/glasspaper, bench hook/vice, tenon saw/coping saw, assemble, material properties, reinforce, wood sourcing, evaluate, quality of finish, accuracy	grate, hygiene, ingredients, label, measure, nutrient, nutrition, nutritional value, preference, press, process, recipe, safety, theme	problem solve, product analysis, series circuit, stable, target user
SMSC	Spiritual - Opportunities to exercise imagination, inspiration, intuition and insight through creativity and risk taking in analysing, designing and manufacturing a range of products. This instils a sense of awe, wonder and mystery when studying the natural world or human achievement. Encouraging creativity allows pupils to express their thoughts and feelings and to reflect and to learn from reflection, for example, asking 'why?', 'how?' and 'where?'. Moral-.Children will learn to discuss the advantages/disadvantages of technological advancement. Safety is considered, in the production of products, and when making products to be used by others. Children will learn to consider the environment, the effect of designing and making and long term sustainability of the planet. Design and Technology prepares children to become responsible consumers. Social- Opportunities to work as a team, recognising others' strengths and sharing equipment. Design Technology promotes equality of opportunity and provides an awareness of areas that have gender issues e.g. encouraging girls to use equipment that has been traditionally male dominated. Culture - Children understand how a range of cultural influences impact on design over time. How for example industrial heritage, developments in fashion, demographics and the demands of society pull and push change. Pupils consider design and how it has developed within a historical period, though continue to have a place in the world, and influence our world view. Pupils look at the cultural influences on the food we prepare and eat. They find out about the staple foods of other countries.		
Year 6	**Mechanisms –** Gears and Pulleys - *Making and designing gear and pulley systems and exploring their uses.* ***https://www.kapowprimary.com/subjects/design-technology/upper-key-stage-2/year-5/mechanical-systems/option-1-gears-and-pulleys/*** ***Outcome:*** -Give examples of machines that use gears and/or pulleys. -Describe how gears and pulleys work and their purpose. -Design and make a gear and pulley system. -Write a problem statement. -Write questions for market research, provide feedback and research market competitors. -Write and use a design brief to guide design. -Evaluate a product against a set of design criteria, provide useful feedback and incorporate changes. -Draw and annotate an eco-gadget bike design. **Skills:** Design: - Identifying a wide range of needs and potential barriers through market research	**Electrical Systems –** Steady hand game - *To design a steady hand game.* **https://www.kapowprimary.com/subjects/design-technology/upper-key-stage-2/year-6/electrical-systems-steady-hand-game/** **Outcome:** -Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. -Developing design criteria based on findings from investigating existing products. -Developing design criteria that clarifies the target user. -Altering a product's form and function by tinkering with its configuration. -Making a functional series circuit, incorporating a motor. -Constructing a product with consideration for the design criteria. -Breaking down the construction process into steps so that others can make the product.	**Food –** Cooking and nutrition: Come dine with me - *Selecting three recipes to create a three course meal.* **https://www.kapowprimary.com/subjects/design-technology/upper-key-stage-2/year-6/new-cooking-and-nutrition-come-dine-with-me/** **Outcome:** -Find a suitable recipe for their course. -Record the relevant ingredients and equipment needed. -Follow a recipe, including using the correct quantities of each ingredient. -Write a recipe, explaining the process taken. -Explain where certain key foods come from before they appear on the supermarket shelf. **Skills:** -Writing a recipe, explaining the key steps, method and ingredients. -Including facts and drawings from research undertaken. -Following a recipe, including using the correct quantities of each ingredient. -Adapting a recipe based on research.

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	- Beginning to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. -Using a series of prototypes to refine and improve their designs. Make: -Consistently apply safety instructions. -Select appropriate scissors to handle delicate cutting tasks and challenging materials. -Cutting patterns and drawings accurately. -In supervised groups, using hot glue guns safely. -Recognising that hot glue is useful for joining materials that need a strong bond that sets quickly. -Choosing PVA glue over hot glue for its safety when joining materials in less intensive projects. Evaluate: -Reflecting on the usability, aesthetics, innovation and sustainability of products and discussing how design choices impact these aspects. -Assessing their designs against a more complex set of design criteria that includes functionality, aesthetics, user experience, sustainability and cost. -Considering alternative materials, tools or techniques that could enhance the product. -Providing feedback that is helpful, specific, and encouraging. -Incorporating feedback from peers or users to improve their product further, explaining the changes they made and the impact they had. **Knowledge:** -Mechanical systems that use gears in everyday objects (e.g. bicycle, clock, etc.). -Gears and pulleys allow us to transfer movement and force from one part of a mechanical system to another. -Gears allow us to increase the output of a mechanism. -Market research is a way of collecting information about problems or needs.	-Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. -Determining which parts of a product affect its function and which parts affect its form. -Analysing whether changes in configuration positively or negatively affect an existing product. -Peer evaluating a set of instructions to build a product. **Skills:** -Designing a steady hand game, identifying and naming the components required. -Drawing a design from three different perspectives. -Generating ideas through sketching and discussion. -Modelling ideas through prototypes. -Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'. -Constructing a stable base for a game. -Accurately cutting, folding and assembling a net. -Decorating the base of the game to a high-quality finish. -Making and testing a circuit. -Incorporating a circuit into a base. -Testing their own and others' finished games, identifying what went well and making suggestions for improvement. -Gathering images and information about existing children's toys. -Analysing a selection of existing children's toys. **Knowledge:** To know that 'form' means the shape and appearance of an object. - To know the difference between 'form' and 'function'. -To understand that 'fit for purpose' means that a product works how it should and is easy to use. -To know that 'form over purpose' means that a product looks good but does not work very well. -To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind. -To understand the diagram perspectives 'top view', 'side view' and 'back'.	-Working to a given timescale. -Working safely and hygienically with independence. -Evaluating a recipe, considering taste, smell, texture and origin of the food group. -Taste testing and scoring final products. -Suggesting and writing up points of improvements in productions. -Evaluating health and safety in production to minimise cross contamination. **Knowledge:** -That 'flavour' is how a food or drink tastes. -That many countries have 'national dishes' which are recipes associated with that country. -That 'processed food' means food that has been put through multiple changes in a factory. -That it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. -What happens to a certain food before it appears on the supermarket shelf (farm to fork).

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	-Constraints are things that might stop our ideas from being successful. -Original and innovative ideas are different from what has been made before. -Annotations are detailed labels and comments on diagrams. -Risks are things that might happen. -Hot glue creates a strong bond quickly. -It is often better to choose safer equipment. -Sustainability means thinking about the materials that were used to make a product and how the product was made. -Their final product can still be improved by different materials or techniques. -Evaluating their designs in detail will help them understand their successful and less successful parts. -Feedback should be positive, helpful and specific. -That explaining how they used feedback to improve their design can help them create better products in the future.		
Key Vocabulary	Annotate, axle, force, gear, gear system, input, machine, market research, mechanism, output, problem statement, pulley, pulley system, renewable energy, research, sustainability, teeth	Assemble, battery, battery pack, benefit, bulb, bulb holder, buzzer, circuit, circuit symbol, component, conductor, copper, design, design criteria, evaluation, fine motor skills, fit for purpose, form, function, gross motor skills, insulator, LED, user	Balance, bitter, bridge method, complement, cookbook, cross-contamination, enhance, equipment, farm to fork, flavours, ingredients, method, research, pairing, recipe, preparation, salty, sour, storyboard, sweet, umami
SMSC	Spiritual - Opportunities to exercise imagination, inspiration, intuition and insight through creativity and risk taking in analysing, designing and manufacturing a range of products. This instils a sense of awe, wonder and mystery when studying the natural world or human achievement. Encouraging creativity allows pupils to express their thoughts and feelings and to reflect and to learn from reflection, for example, asking 'why?', 'how?' and 'where?'. Moral-.Children will learn to discuss the advantages/disadvantages of technological advancement. Safety is considered, in the production of products, and when making products to be used by others. Children will learn to consider the environment, the effect of designing and making and long term sustainability of the planet. Design and Technology prepares children to become responsible consumers. Social- Opportunities to work as a team, recognising others' strengths and sharing equipment. Design Technology promotes equality of opportunity and provides an awareness of areas that have gender issues e.g. encouraging girls to use equipment that has been traditionally male dominated. Culture - Children understand how a range of cultural influences impact on design over time. How for example industrial heritage, developments in fashion, demographics and the demands of society pull and push change. Pupils consider design and how it has developed within a historical period, though continue to have a place in the world, and influence our world view. Pupils look at the cultural influences on the food we prepare and eat. They find out about the staple foods of other countries.		

Year 7	Food	Textiles		Product Design			Electronics

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	Work safely in a kitchen How to use a chef's knife Use an oven Understand the Eatwell Guide and how to plan a balanced healthy diet. Understand how the body uses different nutrients. Prepare six healthy dishes. How to use Sensory Analysis descriptors. Key Knowledge Health and Safety in the Food Rooms. The Eatwell Guide Cous Cous Salad Practical Safe food preparation. Safe use of Hob and oven Pizza Toast Practical Nutrients Sensory Analysis Frittatas Practical Eatwell Guide Salmonella Fruity Muffins Sugars Apple Crumble Origin of Fruits Fruit Scones 8 tips for healthy eating Seasonality	Learn that designing has environmental, social and ethical dimensions. Use a range of manufacturing techniques, e.g. using paper templates and creating surface decoration. Use of hand tools such as scissors, pins and needles and sewing machines to cut and join materials safely. Learn what a smart material is Key Knowledge Design Brief and Existing Products Research Smart Materials Customer Profile Design Specification & Primary and Secondary sources of inspiration. Cotton and the Environment. Sewing Machine practice Initial Ideas Final Design Development Paper Templates Making an appliqued recycled monster using a sewing machine Maths in Textiles Evaluation		Understand the importance of health & safety when working in the workshop Knowledge of different types of wood and their properties Learning to use a variety of tools, machines and equipment in the workshop Development of drawing skills and techniques Key Knowledge Types of Timber Design a key ring, Health & safety in the Workshop, Make a keyring Task Analysis - Caddi Initial Ideas of Caddi x 4 Final Design Learning to use pillar drill, tenon saw, Hegner saw, templates whilst making the Caddi Introduction to Orthographic Drawing			Improve skills working with a range of tools, equipment, electronic and mechanical components. To develop pupil understanding of basic electronic principles. Awareness of a range of electronic components and their role within a circuit. Develop pupil understanding of the basics of 2D design. Awareness of the origin, uses and processes of plastic. Improve electronic and mechanical assembly skills. Key Knowledge Task Analysis Moodboard Design brief and Specification Generate design Ideas Using 2D Design software Generating Final idea Simple circuits, conductors and Insulators Series and parallel circuits Resistors and Diodes LED's, circuit design and Yenka Making a Circuit Properties and origins of Plastics Evaluation