



Vision: we aim to inspire every child to think creatively, solve problems, and design with purpose. Through hands-on learning, practical skills, and teamwork, our pupils develop confidence, curiosity, and resilience, preparing them to innovate and make a positive impact on the world around them.

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 3 - What makes a good toy?		Term 5 - What happens in the garden? Minibeasts and life cycles		
	Term 2 - What happens at night? What do we celebrate at this time of year?		Term 4 - What makes a good story? Traditional tales		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.						
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.						
Reception	Term 1 - Settling In / Who am I? All about me/ Autumn & Harvest		Term 3 - What Happens in our world?		Term 5 - What's happening in our garden? - Minibeasts and life cycles -		
	Term 2 - Tell me a story. Traditional Tales/ Christmas		Term 4 - How do we get around? – Transport		Term 6 - Water, water, everywhere! - Water and Growing		



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<ul style="list-style-type: none"> - Designing something at the making table (more things introduced throughout year. What are you making? What do you need to make it? Who is it for? - Designing and make something with a friend- 'What friends do best.' What are you making? What do you need to make it? Who is it for? What can it do? Various construction building in continuous provision inside and outside. What are you making? How can you make it stronger? What will make it better? 	<ul style="list-style-type: none"> - Designing something at the making table. What do you want to make? Can you draw a design? What do you need to make it? Who is it for? (adding mechanisms -see below) - Junk model rockets (Transport) What shapes will you use? How will you put it together? Various construction building in continuous provision inside and outside. What are you making? How can you make it stronger? What will make it better? 	<ul style="list-style-type: none"> - Designing something at the making table. What do you want to make? Can you draw a design? What do you need to make it? Who is it for? (develop further, building on each child's individual skills) Various construction building in continuous provision inside and outside. What are you making? How can you make it stronger? What will make it better?
<ul style="list-style-type: none"> - Making the three bears to tell the story using collage. - What fabric will you use and why? What does it feel like? How will you join the materials? 	<ul style="list-style-type: none"> - Weaving baskets using card. (Handa's Surprise) - Various collages using a variety of materials. - 	<ul style="list-style-type: none"> - Various collages using a variety of materials - Designing seed -packets. - Designing crown for a prince or princess. What could you use to decorate your crown?
<ul style="list-style-type: none"> - Baking sticky fingers. - Making bread. - Making gingerbread men. - Making porridge. - Talking about harvest. - What ingredients do you need? How are the ingredients going to change? Where do potatoes come from? Can you tell what vegetables grow on trees? 	<ul style="list-style-type: none"> Tasting fruit and talking about where it comes from- What does it taste like? Describe what it looks like. What do you think it will look like when we cut it open? Does the taste remind you of anything? Do you know how they grow? 	<ul style="list-style-type: none"> Planting beans and sunflowers seeds. -
	<ul style="list-style-type: none"> - Exploring different joining techniques - Designing something at the making table. Introducing different joining techniques. Do you think that will work? Why? Can you try another way? - Using 2 simple to design a vehicle (exploring software) - Making cars. How will you fix the wheels on? Will they move? Explore. 	<ul style="list-style-type: none"> - Exploring different joining techniques Designing something at the making table. Introducing different joining techniques. (develop further, building on each child's individual skills)



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<p>Key Vocabulary</p>	<p>Mechanisms – join, fix, turn, open, close, push, pull, fold, fasten, Structures - build, strong, stronger, strongest, tall, taller, tallest, short, shorter, shortest, connect, join, make Textiles – materials, rough, smooth, soft, silky, patterned Food – ingredients, chop, cut, mix, stir Tape, scissors, glue, stick, elastic band, paper clip, whole punch, design, make, like, better</p>		
<p>SMSC</p>	<p>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.</p>		
<p>Year 1</p>	<p>Food – Preparing fruit and vegetables.</p> <p>KL: How can we prepare food safely and make healthy choices?</p> <p>Throughout the year, children will explore healthy eating and food preparation through regular opportunities to choose, chop, and prepare a variety of nutritious snacks such as fruits, vegetables, and simple combinations like crackers with cream cheese. This ongoing, hands-on experience enables children to develop key skills in cutting, peeling, and assembling food safely and hygienically.</p> <p>Children will learn to use the basic principles of a healthy and varied diet to prepare simple dishes, understanding where food comes from and how it can be combined to create balanced meals. By preparing and tasting a range of ingredients, they will build confidence, independence, and enjoyment in making healthy food choices, meeting the national curriculum aims for cooking and nutrition in Key Stage 1.</p>	<p>Structures – Freestanding structures</p> <p>KL:What makes a structure strong, stable, and able to stand on its own?</p> <p>Throughout the year, children will have continuous access to a range of construction materials, including junk modelling resources, glue guns, and saws. Through independent and guided exploration, they will design and make their own freestanding structures and inventions. This ongoing provision allows children to develop their understanding of how to make structures stronger, stiffer, and more stable.</p> <p>Children will plan, build, and test their ideas, discussing what works well and what could be improved. They will develop key DT skills in joining, shaping, and assembling materials, while learning to select appropriate tools and techniques safely. This hands-on, creative approach ensures that pupils meet the national curriculum requirements for designing, making, evaluating, and developing technical knowledge throughout the year.</p>	<p>Mechanisms</p> <p>Topic Overview:</p> <p>Children will explore simple mechanisms by creating a beach scene with moving parts using sliders. They will develop understanding of how sliders work and apply this knowledge to design, make, and improve their own moving picture.</p> <p>KL: How can we use simple mechanisms to make objects move?</p> <p>1. Research</p> <p>KL: I can explore existing sliders and moving pictures.</p> <ul style="list-style-type: none"> • Show children examples of moving pictures, pop-ups, and simple slider cards. • Discuss how different elements move (e.g., a crab moving across the sand, a boat on the water). • Children can look at pictures of beach scenes for inspiration. • Encourage them to talk about what they like and notice how movement is created. <p>2. Skills</p> <p>KL: I can Practice techniques needed for making sliders.</p> <ul style="list-style-type: none"> • Learn to cut, fold, and attach card/paper to make slider mechanisms. • Practice sliding a tab through a slot and moving an object along it. • Reinforce using glue, scissors, and masking tape safely.



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			<ul style="list-style-type: none">• Experiment with different sizes of sliders and objects to see which moves best. <p>3. Design</p> <p>KL: I can plan their own moving beach scene.</p> <ul style="list-style-type: none">• Children draw their beach scene layout on paper.• Decide which parts will move (e.g., sun setting, crab moving, waves, boats).• Annotate where sliders will go and what materials they will need.• Teachers prompt thinking about positioning, size of slider, and smooth movement. <p>4. Make</p> <p>KL: Create the moving picture using the slider mechanism.</p> <ul style="list-style-type: none">• Children follow their design to construct the background and attach moving parts using slider techniques.• Encourage using a variety of materials (card, paper, fabric, etc.) for textures.• Support children in assembling and testing their sliders as they work. <p>5. Evaluate and Improve</p> <p>KL: Reflect on their work and make improvements.</p> <ul style="list-style-type: none">• Children test their sliders and observe what works and what doesn't.• Discuss questions like:<ul style="list-style-type: none">○ Does the slider move smoothly?○ Are there parts that get stuck?○ How could you make it more interesting or realistic?• Children make improvements based on observations, adjusting tabs, slots, or decoration.
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SMSC	<ul style="list-style-type: none"> • Spiritual: Children express creativity and imagination when designing and building their own inventions. • Moral: Learn to make responsible choices about healthy food and safe tool use. • Social: Work together to share materials and support each other in problem-solving. • Cultural: Begin to recognise how design, food, and structures reflect different cultures and lifestyles. 		
Year 2	<p>Mechanisms – Wheels and Axles Topic Overview: Children will explore how wheels and axles work to create movement. They will design and make a royal carriage for the King's terrier, linking to a History topic about royalty, and develop skills in planning, constructing, and evaluating moving vehicles.</p> <p>KL: How do wheels and axles help vehicles move?</p> <p>1. Research KL: I can research how wheels and axles work and explore different vehicles.</p> <ul style="list-style-type: none"> • Look at examples of wheeled vehicles, including carriages and modern vehicles. • Discuss how wheels help objects move and what makes movement smooth. • Investigate materials and shapes suitable for axles and wheels. <p>2. Skills KL: I can develop my skills needed to make a working wheeled vehicle.</p> <ul style="list-style-type: none"> • Practice attaching wheels to axles and ensuring they rotate freely. • Explore different ways to connect axles to a base. • Learn to use tools and materials safely, including cutting, joining, and measuring. 	<p>Food – Preparing Fruit and Vegetables Topic Overview: Children will develop skills in preparing fruit and vegetables safely and hygienically. They will learn about food groups and nutrition, and design and make a balanced wrap, applying their understanding of healthy eating.</p> <p>KL: How can we prepare healthy food using simple skills and ingredients?</p> <p>1. Research KL: I can explore different fruits, vegetables, and other foods and understand why they are healthy.</p> <ul style="list-style-type: none"> • Investigate a range of fruits, vegetables, and other wrap ingredients. • Discuss the main food groups and what makes a balanced diet. Talk about where food comes from. • Taste and describe different ingredients, noting textures and flavours. <p>2. Skills KL: I can use simple food preparation techniques safely and hygienically.</p> <ul style="list-style-type: none"> • Wash, peel, chop, and slice fruits and vegetables safely. • Practice spreading, layering, and assembling ingredients. • Learn to use child-safe knives and utensils correctly. <p>3. Design KL: I can plan a balanced wrap using different</p>	<p>Textiles – Templates and Joining Techniques Topic Overview: Children will explore basic textiles skills using templates and different joining techniques. They will design, make, and decorate their own sewn puppets, developing fine motor skills and creativity.</p> <p>KL: How can we join fabrics to create a useful or decorative textile product?</p> <p>1. Research KL: I can explore different types of puppets and textile joining techniques.</p> <ul style="list-style-type: none"> • Look at examples of hand-sewn puppets and discuss their features. • Explore different joining techniques such as running stitch, glue, and stapling. • Identify materials suitable for puppet making (felt, fabric scraps, thread, buttons). <p>2. Skills KL: I can practise basic sewing and joining techniques.</p> <ul style="list-style-type: none"> • Learn to use a running stitch and other simple stitches safely. • Explore using glue, tape, or staples to join fabrics. • Practice threading needles and tying knots to secure stitching. <p>3. Design KL: I can plan my own puppet using a template.</p> <ul style="list-style-type: none"> • Draw or trace a template for the puppet shape. • Decide how to decorate the puppet and which



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	<p>3. Design KL: I can plan a royal carriage that will move using wheels and axles.</p> <ul style="list-style-type: none"> • Draw a design for the carriage, deciding where wheels and axles will go. • Choose materials for the body and wheels. • Annotate the design to show how it will move and any decorative features. <p>4. Make KL: I can construct a functioning royal carriage based on the design.</p> <ul style="list-style-type: none"> • Build the carriage using selected materials. • Attach wheels and axles and test for smooth movement. • Decorate the carriage to make it look regal and suitable for the King's terrier. <p>5. Evaluate and Improve KL: I can reflect on how well the carriage moves and suggest improvements.</p> <ul style="list-style-type: none"> • Test the carriage across different surfaces. • Identify any problems with wheel movement or stability. • Make improvements to enhance movement or appearance. <p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. Wheel – A round object that turns to allow movement. 2. Axle – A rod that wheels rotate around. 3. Vehicle – Something used to carry people or objects. 	<p>healthy ingredients.</p> <ul style="list-style-type: none"> • Draw or list the ingredients they will include in their wrap. • Decide the order of layering to make it appealing and balanced. • Annotate the design to show which food groups are included. <p>4. Make KL: I can prepare and assemble my balanced wrap following my plan.</p> <ul style="list-style-type: none"> • Prepare all ingredients safely, chopping and arranging as needed. • Assemble the wrap according to the design. • Try different combinations to make it visually appealing and tasty. <p>5. Evaluate and Improve KL: I can reflect on my wrap and suggest improvements.</p> <ul style="list-style-type: none"> • Taste the wrap and discuss what they like and what could be improved. • Evaluate whether the wrap is balanced and includes a variety of food groups. • Suggest changes to improve flavour, presentation, or nutritional value. <p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. Fruit – Sweet plant food that is often eaten raw. 2. Vegetable – Plant food eaten as part of a meal, usually savoury. 3. Nutrition – The process of eating the right foods for health. 4. Balanced diet – Eating a variety of foods from different food groups. 5. Hygiene – Keeping food and hands clean to stay safe from germs. 	<p>joining techniques to use.</p> <ul style="list-style-type: none"> • Annotate the design to show where stitches, glue, or other joins will go. <p>4. Make KL: I can make my puppet by joining fabrics and adding decorations.</p> <ul style="list-style-type: none"> • Cut out fabric pieces using the template. • Join pieces using stitching or other chosen techniques. • Decorate the puppet with features such as eyes, hair, or clothes. <p>5. Evaluate and Improve KL: I can test and reflect on my puppet and suggest improvements.</p> <ul style="list-style-type: none"> • Check that all pieces are securely joined. • Discuss how the puppet could be improved in appearance or function. • Make changes to improve durability, movement, or decoration. <p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. Template – A shape or pattern used to cut out fabric. 2. Stitch – A loop of thread used to join fabrics together. 3. Joining technique – A method used to connect pieces of fabric. 4. Puppet – A figure made to be moved by hand for play or storytelling. 5. Fabric – Material used for making textiles. 6. Decoration – Added details to make something look more attractive.
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	<p>4. Mechanism – A system of parts working together to create movement.</p> <p>5. Design – A plan showing how something will be made.</p> <p>6. Stability – How steady or balanced an object is.</p>	<p>6. Ingredient – A food item used to make a meal or dish.</p>	
SMSC	<ul style="list-style-type: none"> • Spiritual: Take pride in personal creativity and reflect on the satisfaction of making something work. • Moral: Understand fairness and honesty when evaluating their own and others' work. • Social: Collaborate in small groups to plan, make, and improve shared projects. • Cultural: Explore traditional foods, textiles, and transport designs from different cultures. 		
Year 3	<p>Textiles – Christmas Decoration Topic Overview: Children will develop their textiles skills by learning cross-stitch and appliqué techniques. They will design and make a Christmas-themed decoration, combining creativity with practical sewing skills.</p> <p>KL: How can stitching and fabric techniques help us create decorative textiles?</p> <p>1. Research KL: I can explore different textile decorations and stitching techniques.</p> <ul style="list-style-type: none"> • Look at examples of Christmas decorations, focusing on stitching and appliqué designs. • Explore cross-stitch patterns and how they can be used decoratively. • Investigate materials suitable for decorations, such as felt, fabric, and threads. 	<p>Structures – 3D Shapes Topic Overview: Children will explore 3D shapes and their properties while designing and constructing a castle. They will develop practical skills in building stable structures, joining materials, and applying their understanding of shape and space.</p> <p>KL: How do 3D shapes and structures help us build strong and stable models?</p> <p>1. Research KL: I can explore 3D shapes and investigate how castles are built.</p> <ul style="list-style-type: none"> • Look at examples of castles, noting towers, walls, and overall structure. • Identify 3D shapes used in buildings (cubes, cuboids, cylinders, pyramids). 	<p>Food – Healthy and Varied Diet Topic Overview: Children will explore where food comes from around the world, the concept of seasonal food, and the different tastes found in ingredients. The food they will be tasting needs to come from the UK and you will look at the packaging and note the importance of trying to buy British. They will develop skills in peeling, tasting, and combining ingredients, culminating in designing and making a seasonal vegetable tart.</p> <p>KL: How can we use seasonal ingredients to create a balanced dish?</p> <p>1. Research KL: I can explore where food comes from and understand the concept of seasonal eating.</p> <ul style="list-style-type: none"> • Investigate foods from different countries and climates. • Discuss why some foods are seasonal and how they grow in different regions.



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	<p>2. Skills KL: I can practise cross-stitch and appliqué techniques.</p> <ul style="list-style-type: none"> • Learn to thread needles and tie knots securely. • Practise cross-stitch on sample fabric. • Explore appliqué by cutting shapes and stitching them onto fabric. <p>3. Design KL: I can plan my Christmas decoration using cross-stitch or appliqué designs.</p> <ul style="list-style-type: none"> • Draw a template for the decoration shape and design. • Decide on colours, patterns, and placement of stitched designs. • Annotate the design to show where cross-stitch or appliqué will be used. <p>4. Make KL: I can make my Christmas decoration using cross-stitch and appliqué.</p> <ul style="list-style-type: none"> • Cut out fabric pieces for the decoration. • Apply cross-stitch or appliqué to decorate the piece. • Assemble and join pieces to create the finished decoration. <p>5. Evaluate and Improve KL: I can reflect on my decoration and suggest improvements.</p> <ul style="list-style-type: none"> • Check that stitches are secure and designs are neat. • Discuss what worked well and what could be improved. • Make adjustments to enhance appearance and durability. 	<ul style="list-style-type: none"> • Discuss how shape affects stability and strength in structures. <p>2. Skills KL: I can practise joining techniques and building stable structures.</p> <ul style="list-style-type: none"> • Explore ways to join materials securely, including tape, glue, and card folds. • Experiment with stacking and combining 3D shapes for stability. • Learn to measure and cut materials accurately to fit designs. <p>3. Design KL: I can plan my castle using different 3D shapes.</p> <ul style="list-style-type: none"> • Draw a design showing the castle layout and shape of each part. • Decide which materials and joining techniques will be used. • Annotate the design to show where different 3D shapes will be applied. <p>4. Make KL: I can construct my castle using 3D shapes and joining techniques.</p> <ul style="list-style-type: none"> • Cut, fold, and join materials to create castle parts. • Assemble the castle, ensuring it is stable and matches the design. • Add decorative features such as towers, battlements, and flags. <p>5. Evaluate and Improve KL: I can test and reflect on my castle and suggest improvements.</p> <ul style="list-style-type: none"> • Check the stability of the castle and identify any weak areas. • Discuss what worked well and what could be improved. 	<ul style="list-style-type: none"> • Identify fruits and vegetables available in the local area during summer. <p>2. Skills KL: I can peel, taste, and identify different flavours in food.</p> <ul style="list-style-type: none"> • Practice peeling vegetables safely, e.g., carrots, courgettes, potatoes, and summer squash. • Taste and describe flavours using sour, umami, salty, bitter, and sweet. • Combine vegetables to explore how flavours work together. <p>3. Design KL: I can plan a seasonal vegetable tart using different flavours.</p> <ul style="list-style-type: none"> • Decide which seasonal vegetables to include in the tart. • Plan the combination of flavours to make it balanced and tasty. • Annotate the design with ingredients, preparation steps, and expected flavours. <p>4. Make KL: I can prepare and assemble a seasonal vegetable tart.</p> <ul style="list-style-type: none"> • Peel, chop, and prepare chosen vegetables safely. • Assemble the tart according to the design. • Cook the tart following safe methods and techniques. <p>5. Evaluate and Improve KL: I can taste my tart, reflect on my work, and suggest improvements.</p> <ul style="list-style-type: none"> • Evaluate the balance of flavours and textures. • Discuss what worked well and any changes to improve taste or presentation.
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	<p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. Cross-stitch – A type of stitch forming X-shaped patterns on fabric. 2. Appliqué – Sewing shapes of fabric onto a larger piece for decoration. 3. Template – A pattern used to cut out fabric pieces. 4. Stitch – A loop of thread used to join or decorate fabric. 5. Fabric – Material used for making textiles. 6. Decoration – Added details to make something look attractive. 	<ul style="list-style-type: none"> • Make changes to improve strength, appearance, or design accuracy. <p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. 3D Shape – A shape that has length, width, and height. 2. Cube – A 3D shape with six equal square faces. 3. Cuboid – A 3D shape with six rectangular faces. 4. Cylinder – A 3D shape with circular ends and a curved surface. 5. Stability – How steady or balanced a structure is. 6. Join – To connect two or more parts together. 	<ul style="list-style-type: none"> • Make suggestions for future versions using seasonal ingredients. <p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. Seasonal – Foods that are available at certain times of the year. 2. Nutrition – The process of eating the right foods to stay healthy. 3. Flavors – The different tastes found in food, such as sweet, salty, sour, bitter, umami. 4. Peel – To remove the outer layer of a fruit or vegetable. 5. Ingredient – A food item used to make a dish. 6. Variety – A range of different foods to make a balanced diet. <p>Summer Term Vegetable Suggestions: Carrots, courgettes, peas, tomatoes, summer squash, bell peppers, radishes, green beans, and sweetcorn.</p>
SMSC	<ul style="list-style-type: none"> • Spiritual: Appreciate the creativity involved in turning simple materials into something decorative or useful. • Moral: Discuss the impact of choices (e.g., using local or seasonal food) on the environment. • Social: Develop teamwork and communication during shared practical tasks. • Cultural: Learn about design influences from around the world, such as international foods and architecture. 		
Year 4	<p>Mechanisms – Mechanical Cars Topic Overview: Children will explore mechanics by designing and making a mechanical car. They will test movement using slingshots and inclined planes, investigate the history of the automobile, and develop skills in measuring, designing, and evaluating their products.</p>	<p>Electrical systems – door bell Topic Overview: Children will explore simple electrical circuits and switches by designing a doorbell for someone who is deaf. They will create a visual alert using LEDs to signal when someone is at the door, developing skills in researching, designing, constructing, testing, and evaluating a product that meets a real user need.</p>	<p>Mechanisms – Pneumatics -animal toy Topic Overview: Children will explore pneumatic systems by designing and making a Jack-in-the-Box toy. They will learn how air pressure can create movement, and develop skills in designing, constructing, testing, and evaluating a moving toy.</p> <p>KL: How can air pressure be used to make a toy move?</p>



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	<p>KL: How do mechanisms help objects move in different ways?</p> <p>1. Research KL: I can research existing mechanical cars and understand their history.</p> <ul style="list-style-type: none"> Investigate different types of mechanical cars and how they work. Explore key design improvements in the history of automobiles. Conduct market research to gather ideas and identify features children like. <p>2. Skills KL: I can use tools and materials safely to build mechanical cars.</p> <ul style="list-style-type: none"> Learn to use scissors, rulers, saws, and other tools appropriately. Practise assembling car components using rubber bands, axles, and wheels. Test movement using slingshots and inclined planes, observing how cars travel. This could be in teams. Half the team makes the incline and the other half makes the sling shot. Then race cars and compare the effectiveness <p>3. Design KL: I can plan a mechanical car using exploded diagrams and annotated sketches.</p> <ul style="list-style-type: none"> Draw exploded diagrams showing each part of the car. Annotate sketches to show materials, measurements, and mechanical features. Use a problem statement to identify design criteria, including speed, stability, and appearance. 	<p>KL: How can electrical circuits be used to solve real-life problems?</p> <p>1. Research KL: I can explore how doorbells and visual alerts work.</p> <ul style="list-style-type: none"> Investigate different types of doorbells and alert systems. Identify the needs of people who are deaf or hard of hearing. Research components like LEDs, batteries, and switches, and discuss how circuits can be controlled. <p>2. Skills KL: I can practise building simple circuits and using switches safely.</p> <ul style="list-style-type: none"> Learn to connect batteries, wires, LEDs, and switches to create a working circuit. Test different switches to see how they control the LED. Explore how the brightness, colour, or placement of the LED can make the alert more effective. <p>3. Design KL: I can plan a doorbell for the deaf using sketches and diagrams.</p> <ul style="list-style-type: none"> Draw a design showing the button, wiring, battery, and LED position. Annotate the design to explain how the circuit will work and how the alert will be visible. List materials and components required and explain why they are suitable for the purpose. <p>4. Make KL: I can build my doorbell using a simple circuit and my chosen materials.</p> <ul style="list-style-type: none"> Construct a housing for the doorbell button and LED using card, plastic, or recycled materials. 	<p>1. Research KL: I can explore how pneumatic systems work and how moving toys use air pressure.</p> <ul style="list-style-type: none"> Investigate examples of pneumatic toys and mechanisms. Discuss how air can be used to push or lift objects. Examine existing toys to understand which materials and mechanisms make movement effective. <p>2. Skills KL: I can practise using syringes, tubing, and other materials safely to create movement.</p> <ul style="list-style-type: none"> Experiment with connecting syringes using tubing to move a plunger or lever. Observe how pressing or pulling a plunger moves another part of a system. Practise cutting, joining, and reinforcing materials safely to create a sturdy toy. <p>3. Design KL: I can plan my animal toy using annotated sketches and diagrams.</p> <ul style="list-style-type: none"> Draw the design of the toy showing the moving part. Label where the syringe, tubing, and plunger will be placed to make the Jack pop up. List the materials needed and describe how the pneumatic system will create movement. <p>4. Make KL: I can build my animal toy using a pneumatic system and my chosen materials.</p> <ul style="list-style-type: none"> Construct the main body and figure from card, recycled materials, or other resources. Connect syringes and tubing to create the popping mechanism. Test the movement as the toy is built and adjust for smooth operation.
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	<p>4. Make KL: I can construct my mechanical car using chosen materials and techniques.</p> <ul style="list-style-type: none"> • Cut, assemble, and join parts to build the car according to the design. • Incorporate tested mechanisms such as rubber-band propulsion. • Adjust construction to ensure wheels turn freely and the car moves effectively. <p>5. Evaluate and Improve KL: I can test, evaluate, and improve my mechanical car based on measurements and feedback.</p> <ul style="list-style-type: none"> • Measure and compare the distance travelled by different cars. • Assess the product against the design criteria from the problem statement. • Provide and use feedback to refine design, materials, or assembly. <p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. Mechanism – A system of parts that work together to make movement. 2. Axle – A rod around which a wheel rotates. 3. Exploded diagram – A drawing showing all parts separated to explain how they fit together. 4. Design criteria – The requirements a product must meet. 5. Motion – The way an object moves (straight, circular, back-and-forth). 6. Market research – Gathering information about existing products to inform design. 	<ul style="list-style-type: none"> • Assemble the circuit, connecting battery, wires, switch, and LED. • Test the system to ensure the LED lights up reliably when the button is pressed. <p>5. Evaluate and Improve KL: I can test my doorbell and make improvements based on feedback.</p> <ul style="list-style-type: none"> • Test whether the LED is bright and noticeable enough to alert a person who is deaf. • Compare designs with classmates and discuss what works well and what could be improved. • Make adjustments to improve visibility, reliability, or durability of the product. <p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. Circuit – A path through which electricity flows. 2. Switch – A device that opens or closes a circuit to control electricity. 3. LED – A small light that glows when electricity passes through it. 4. Battery – A source of electrical energy. 5. Signal – A sound, light, or movement used to communicate information. 6. Accessibility – Designing products so that everyone can use them, including people with disabilities. 	<p>5. Evaluate and Improve KL: I can test my animal toy, assess its performance, and make improvements.</p> <ul style="list-style-type: none"> • Observe how effectively the toy moves when the pneumatic system is used. • Identify problems such as weak joints, sticking plunger, or slow movement. • Make adjustments to improve the movement, stability, and appearance of the toy. <p>Big 6 Vocabulary:</p> <ol style="list-style-type: none"> 1. Pneumatic – Using air pressure to create movement. 2. Syringe – A tube with a plunger used to move air in a system. 3. Plunger – The part of the syringe that is pushed or pulled to move air. 4. Tubing – Flexible tube that connects syringes to transfer air. 5. Mechanism – Parts working together to create movement. 6. Seal – Something that stops air from escaping a pneumatic system. <p>This might help planning and understanding:</p> <p>Pneumatics: moving toys KS2 Y3 Design and technology Lesson Resources Oak National Academy</p>
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SMSC	<ul style="list-style-type: none"> • Spiritual: Reflect on how human ingenuity and design can improve lives (e.g., doorbells for the deaf). • Moral: Make responsible decisions when using materials and tools, understanding the importance of safety. • Social: Support each other in testing and improving mechanisms through group discussion and teamwork. • Cultural: Explore how technology and invention have evolved in different times and places. 		
Year 5	<p>Structures – Bird Box Topic Overview: Children will explore wooden structures and their stability by designing and constructing a bird box. They will develop practical skills in measuring, cutting, joining, and reinforcing materials while considering the needs of birds and the environment.</p> <p>KL: How can we design and build stable structures for a purpose?</p> <p>1. Research KL: I can explore different types of bird boxes and understand what birds need.</p> <ul style="list-style-type: none"> • Investigate a variety of bird boxes and habitats. • Identify key features that make bird boxes safe, sturdy, and suitable for nesting. • Discuss how shape, size, and materials affect the stability and durability of a structure. <p>2. Skills KL: I can practise using tools and joining techniques safely.</p> <ul style="list-style-type: none"> • Learn to measure, mark, and cut wood accurately. • Explore joining techniques such as nails, screws, and glue. • Practise reinforcing and strengthening materials to create a stable structure. 	<p>Electrical Systems – Wobble Bots Topic Overview: Children will explore how electrical circuits and motors can create movement. They will design and make a wobble bot, a small moving device powered by a motor, that performs a specific function for a chosen client. This unit encourages creative problem-solving, understanding of electrical systems, and precise construction skills.</p> <p>KL: How can electrical systems and motors create controlled movement?</p> <p>1. Research KL: I can explore how motors and circuits can create movement.</p> <ul style="list-style-type: none"> • Investigate examples of wobble bots, drawing bots, and moving toys. • Discuss how changing the weight, balance, or motor position affects movement. • Explore different possible functions e.g. drawing, shaking, dancing, or moving objects. • Think about who might use or enjoy a wobble bot (children, artists, scientists, pet owners). <p>2. Skills KL: I can use a motor and circuit components to make controlled movement.</p> <ul style="list-style-type: none"> • Learn how to safely connect a motor, battery, and switch. • Experiment with attaching materials (cups, cardboard, pencils, pipe cleaners) to create different movement patterns. 	<p>Textiles – Batik: Designing a Scarf Topic Overview: Children will explore the traditional art of batik, learning about its origins and cultural significance. They will design and make a stunning, colourful scarf for a fashion-loving woman who wants a unique accessory covered in eye-catching, repeating patterns. This unit encourages creativity, precision, and experimentation with colours and motifs.</p> <p>KL: How can traditional textile techniques be used to create patterned fabric?</p> <p>1. Research KL: I can explore the origins of batik and its cultural significance.</p> <ul style="list-style-type: none"> • Research where and how batik was developed and its traditional uses. • Look at examples of repeating patterns and decorative designs in batik. • Discuss how colours and shapes can be combined to create exciting and bold designs. <p>2. Skills KL: I can practise applying wax and dye safely to fabric.</p> <ul style="list-style-type: none"> • Learn techniques for applying wax to fabric to create patterns. • Experiment with different tools and strokes to make bold and creative repeating patterns. • Explore safe use of dyes and colour blending to create striking effects.



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<p>3. Design KL: I can plan my bird box using annotated diagrams.</p> <ul style="list-style-type: none"> • Draw a design showing the size, shape, and features of the bird box. • Label where each piece of wood will go and how it will be joined. • List the materials and tools needed and explain why they are suitable for the project. <p>4. Make KL: I can build my bird box following my design plan.</p> <ul style="list-style-type: none"> • Cut and assemble the wooden pieces to construct the bird box. • Join the parts securely using nails, screws, or glue. • Reinforce weak areas to ensure the box is durable and safe for birds. <p>5. Evaluate and Improve KL: I can test and assess my bird box and make improvements.</p> <ul style="list-style-type: none"> • Check the stability, durability, and suitability of the box for birds. • Compare my bird box with others and identify successful features. • Suggest and make improvements to strengthen the structure or enhance usability. <p>Big 6 Vocabulary:</p> <p>1. Structure – Something built that can support weight and stand on its own.</p> <p>2. Reinforce – To strengthen a structure to make it more stable.</p> <p>3. Join – To connect two or more pieces of material together.</p> <p>4. Durable – Strong and able to withstand wear or damage.</p>	<ul style="list-style-type: none"> • Explore how the placement of weights or legs changes how the wobble bot moves. • Record findings and decide which techniques will suit their final design. <p>3. Design KL: I can plan a wobble bot that meets the needs of a specific client.</p> <ul style="list-style-type: none"> • Introduce the design brief: <i>Design and make a wobble bot with a specific purpose for a chosen client.</i> • Choose a client (e.g. an artist who wants a drawing bot, a child who wants a fun toy, a scientist who wants a vibration tester, or a pet owner who wants a playful moving toy). • Sketch annotated diagrams showing structure, circuit layout, materials, and decoration. • Decide what materials will be used for the body, legs, and decorations. <p>4. Make KL: I can build and decorate my wobble bot accurately.</p> <ul style="list-style-type: none"> • Construct the body using materials such as plastic cups, recycled boxes, or cardboard tubes. • Assemble the circuit, connecting the motor, battery, and switch safely. • Attach pencils, pipe cleaners, or other legs to create wobbling or drawing movements. • Test and adjust the motor position to control the type of movement. • Decorate to suit the client and product purpose. <p>5. Evaluate and Improve KL: I can test my wobble bot and suggest improvements.</p> <ul style="list-style-type: none"> • Test how well the wobble bot moves and whether it meets the brief. 	<p>3. Design KL: I can plan a scarf design for a specific customer.</p> <ul style="list-style-type: none"> • Develop a brief: design a vibrant, fashionable scarf for a woman who wants a unique repeating pattern that will make her stand out. • Draw annotated sketches showing pattern design, colours, and layout. • Decide on the placement and repetition of motifs for a visually exciting and balanced scarf. <p>4. Make KL: I can create my scarf using batik techniques.</p> <ul style="list-style-type: none"> • Apply wax to fabric according to the planned design, experimenting with interesting shapes and textures. • Dye the fabric, layering colours for dramatic effects. • Remove wax by ironing to reveal the finished design, ensuring patterns are crisp and colourful. <p>5. Evaluate and Improve KL: I can assess my scarf and suggest improvements.</p> <ul style="list-style-type: none"> • Evaluate how well the design meets the exciting brief and customer preferences. • Identify strengths and areas to improve, such as pattern repetition, colour harmony, or boldness. • Suggest ideas for future scarves or different techniques to make them even more striking. <p>Big 6 Vocabulary:</p> <p>1. Batik – A method of decorating fabric using wax and dye.</p> <p>2. Wax resist –Applying wax to fabric to prevent dye from colouring certain areas.</p> <p>3. Pattern – A repeated decorative design.</p> <p>4. Repeat – The way a design or motif is repeated across a fabric.</p> <p>5. Dye – A substance used to colour fabric.</p>
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	<p>5. Habitat – The natural home of a living thing. 6. Material – The substance used to make something, e.g., wood, nails, or screws.</p>	<ul style="list-style-type: none"> • Observe how the design choices (weight, balance, materials) affect performance. • Gather feedback from peers and make changes to improve control, design, or effectiveness. • Reflect on what they have learned about circuits and movement. <p>Big 6 Vocabulary: 1. Circuit – A complete path through which electricity flows. 2. Motor – A component that converts electrical energy into movement. 3. Vibration – Rapid movement that creates wobbling or shaking. 4. Balance – How weight is distributed to affect movement or stability. 5. Function – The purpose or job something is designed to do. 6. Prototype – A model made to test ideas and design features.</p>	<p>6. Motif – A single element or shape that is repeated in a pattern.</p>
SMSC	<ul style="list-style-type: none"> • Spiritual: Develop a sense of wonder at how creativity and technology combine to solve problems. • Moral: Consider sustainability when designing products and choosing materials. • Social: Work collaboratively to research, design, and construct purposeful products for others. • Cultural: Appreciate artistic and cultural traditions, such as batik, and their influence on modern design. 		
Year 6	<p>Cooking and Nutrition – Developing a Recipe Topic Overview: Children will explore where food comes from, learn about nutritional values, develop their own recipe, and apply practical cooking skills. They will focus on using seasonal ingredients, preparing food safely, and designing labels for their product.</p>	<p>Structures – Food Packaging for Bolognese Topic Overview: Children will explore how 3D structures can be used to create effective and appealing food packaging. They will design, make and evaluate their own packaging for a Bolognese dish, considering structure, materials, target customer and healthy eating. The brief is to create packaging suitable for Marks & Spencer (M&S) – a high-end supermarket.</p>	<p>Mechanisms – Automata Toys Topic Overview: Children will explore how cams, followers, and levers create movement in mechanical systems. They will design and make an automata toy for a younger child, combining mechanical skill with creativity and understanding of motion. The focus will be on designing for a client, creating smooth movement, and producing an appealing, well-finished product.</p>



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	<p>KL: How can we design and follow a recipe to make a nutritious meal?</p> <p>1. Research KL: I can explore where food comes from and how it is produced.</p> <ul style="list-style-type: none"> • Visit a local farm to see how crops and animals are raised. • Discuss the journey of ingredients from farm to fork. • Record observations about different types of produce and how they are grown. <p>2. Skills KL: I can practise food preparation skills safely.</p> <ul style="list-style-type: none"> • Learn and practise peeling, chopping, and measuring ingredients. • Explore cooking techniques such as boiling, sautéing, or mixing. Pasta, onions, mushrooms, beef. Then taste test • Understand and apply hygiene and safety rules in the kitchen. <p>3. Design KL: I can plan a balanced recipe using seasonal ingredients.</p> <ul style="list-style-type: none"> • Research and select ingredients suitable for a healthy Bolognese. • write instructions for the dish. • Consider nutritional content and flavour combinations. <p>4. Make KL: I can prepare and cook my Bolognese following my plan.</p> <ul style="list-style-type: none"> • Prepare all ingredients safely and hygienically. • Cook the dish using appropriate techniques and equipment. 	<p>KL: How can 3D structures and packaging design appeal to a specific customer?</p> <p>1. Research KL: I can explore how food packaging is designed for different customers.</p> <ul style="list-style-type: none"> • Investigate examples of food packaging from supermarkets, including M&S. • Compare high-end and low-end packaging — what makes them look different? • Discuss who the customer is and what they expect from M&S packaging (e.g. quality, simplicity, elegance). • Link back to previous food learning: are we packaging the whole meal or just the sauce? Why is that important for the customer? <p>2. Skills KL: I can create and decorate 3D packaging using a range of materials and digital tools.</p> <ul style="list-style-type: none"> • Explore how to make 3D boxes from nets using card and other materials (e.g. adding plastic windows, inserts, or flaps). • Experiment with ways to strengthen and reinforce packaging so it protects the product. • Use computers or iPads to design labels, logos and branding for the packaging. • Practise printing and assembling their designs neatly to fit the structure. <p>3. Design KL: I can plan packaging that meets the needs of a specific brand and customer.</p> <ul style="list-style-type: none"> • Respond to the design brief: create elegant, sustainable packaging for an M&S bolognese product. • Decide whether the packaging is for the whole meal or just the sauce, explaining their reasoning. 	<p>KL: How do mechanical systems create movement in toys?</p> <p>1. Research KL: I can explore how automata toys use mechanisms to create movement.</p> <ul style="list-style-type: none"> • Investigate different examples of automata toys and moving mechanical systems. • Explore how cams, followers, and axles work to create up-and-down or circular movement. • Identify how toys are designed to appeal to children — colour, theme, and decoration. • Discuss the design brief: <i>Design and make an automata toy for a younger child that tells a short story or shows a fun character in motion.</i> <p>2. Skills KL: I can use tools and mechanisms safely to create controlled movement.</p> <ul style="list-style-type: none"> • Experiment with different cam shapes (snail, eccentric, circular) to test how they affect movement. • Practise measuring, cutting, drilling, and assembling wooden frames accurately. • Explore how different materials can be used for axles, followers, and supports. • Learn to fix moving parts securely while allowing smooth motion. <p>3. Design KL: I can plan a toy that uses a cam mechanism to create movement for my client.</p> <ul style="list-style-type: none"> • Revisit the brief: an automata toy for a younger child that is fun, colourful, and moves smoothly. • Sketch designs showing the frame, cam mechanism, and moving parts. • Annotate drawings to show how the toy works and how it will appeal to the client.
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	<ul style="list-style-type: none"> • Work collaboratively and follow the recipe accurately. <p>5. Evaluate and Improve KL: I can taste my dish and suggest improvements.</p> <ul style="list-style-type: none"> • Taste the finished product and evaluate flavour, texture, and presentation. • Compare the results with the original design and recipe plan. • Suggest changes to improve the recipe or preparation method for next time. <p>Big 6 Vocabulary:</p> <p>1. Seasonal – Foods that are available at certain times of the year.</p> <p>2. Ingredients – The foods used to make a dish.</p> <p>3. Nutritional Value – The benefits a food provides to the body.</p> <p>4. Hygiene – Keeping yourself and your workspace clean while cooking.</p> <p>5. Preparation – The process of getting food ready to cook.</p> <p>6. Recipe – A set of instructions for preparing a dish.</p>	<ul style="list-style-type: none"> • Sketch annotated designs showing structure, layout, and decoration. • Consider sustainability, material choices and brand identity. <p>4. Make KL: I can construct and decorate my packaging accurately.</p> <ul style="list-style-type: none"> • Cut, fold, and assemble their packaging using chosen materials and techniques. • Attach transparent plastic windows, flaps, or handles if needed. • Apply their digital designs (logos, labels, nutritional information) neatly to the packaging. • Check that their structure is strong, stable, and fits the food product correctly. <p>5. Evaluate and Improve KL: I can evaluate how well my packaging meets the design brief.</p> <ul style="list-style-type: none"> • Assess whether the final product looks high-end and suitable for M&S customers. • Check strength, stability, presentation, and how well the packaging communicates healthy eating. • Gather peer feedback and suggest improvements to design, decoration or construction. <p>Big 6 Vocabulary:</p> <p>1. Structure – Something built or assembled to support or contain something.</p> <p>2. Net – A flat shape that can be folded to form a 3D structure.</p> <p>3. Reinforce – To strengthen a material or structure to make it more stable.</p> <p>4. Brand – The identity and style that represents a company or product.</p> <p>5. Target Customer – The group of people the product is designed for.</p>	<ul style="list-style-type: none"> • Select suitable materials and tools for both structure and decoration. <p>4. Make KL: I can construct and decorate my automata toy accurately.</p> <ul style="list-style-type: none"> • Cut and assemble a stable wooden or card frame for the toy. • Add the cam, axle, and follower mechanism to create movement. • Attach and test moving parts, adjusting for smoother motion if needed. • Decorate the toy creatively to suit the client's interests (e.g. animals, superheroes, fairytales). <p>5. Evaluate and Improve KL: I can test and improve my automata toy to meet my client's needs.</p> <ul style="list-style-type: none"> • Test how well the toy moves and how appealing it is to the target child. • Reflect on how well the mechanism works and if improvements could be made. • Gather peer or "client" feedback and suggest design or mechanism changes. • Evaluate whether the toy is strong, safe, and fit for purpose. <p>Big 6 Vocabulary:</p> <p>1. Cam – A shaped piece that moves a follower up and down or back and forth.</p> <p>2. Follower – The part that moves in response to the cam's rotation.</p> <p>3. Axle – A rod or shaft that allows movement or rotation.</p> <p>4. Mechanism – A system of parts working together to create motion.</p> <p>5. Frame – The supporting structure that holds the mechanism in place.</p>
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		<p>6. Sustainable – Using materials and methods that are environmentally friendly and reusable.</p> <p>Ideas to help :</p> <p>Wobble Bot Ideas</p> <ul style="list-style-type: none"> • Drawing Bot – Uses felt-tip pens as legs to draw colourful spirals as it moves. • Dancing Bot – Decorated like a robot dancer that moves rhythmically to music. • Cleaner Bot – Has a small cloth attached underneath to “sweep” a table. • Mascot Bot – Designed as a character or school mascot that wobbles across a surface. • Pet Toy Bot – Moves and shakes to entertain a cat or dog. <p>Clients:</p> <p>An artist who wants a fun drawing robot.</p> <ul style="list-style-type: none"> • A young child who loves playful, silly toys. • A scientist or engineer who needs a test model for vibration or motion. • A pet owner who wants a toy to entertain their animal. • A shop or museum looking for an eye-catching display feature. 	<p>6. Motion – The type of movement created (rotary, linear, reciprocating).</p> <p>Possible Client</p> <p>A younger child (aged 4–6) who loves storybooks and playful characters. The toy could link to a favourite story or theme — e.g. a dragon that flaps its wings, a pirate ship with a moving sail, or a bunny that hops.</p>
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SMSC	<ul style="list-style-type: none"> • Spiritual: Reflect on their design journey and take pride in producing purposeful, high-quality outcomes. • Moral: Evaluate how design decisions affect users, consumers, and the environment. • Social: Work collaboratively to design for real clients, building communication and leadership skills. • Cultural: Understand how global design, branding, and food traditions connect people across cultures.
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Year 7	<p>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.</p> <p>Key Knowledge</p> <p>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</p>	<p>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</p> <p>Key Knowledge</p> <p>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 applied recycled monster using a sewing machine Maths in Textiles Evaluation</p>	<p>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</p> <p>Key Knowledge</p> <p>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</p>	<p>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.</p> <p>Key Knowledge</p> <p>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</p>
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