DT Overview

Project	Disciplinary Knowledge	Substantive Knowledge	Language	SDG
• **EYFS**				
Mechanisms in our environment	• Explore different mechanisms found in the environment, like doors that open and close or wheels on a toy. • Draw simple pictures to show how they want something to move, like a toy car or a gate. • Use simple materials like cardboard and paper to make a moving part, such as a wheel or a flap. • Talk about how their model moves and what they like about it. • Understand basic movement, like how pushing or pulling can make something move.	• Identify simple properties of materials (soft, hard, rough, smooth). • Understand basic material types (wood, plastic, fabric). • Use basic tools safely (e.g., scissors, glue). • Construct simple structures and explore stability. • Recognise and use simple mechanisms (e.g., wheels, axles). • Generate simple ideas for making and designing. • Test and modify creations to solve problems. • Notice and discuss designed objects in everyday life. • Collaborate and share ideas during building activities. • Describe and communicate ideas using simple vocabulary.	Lever Pulley Gear Rotate Lift Push Pull Move	
Textiles **Festival Decorations.**	• Look at different decorations used in festivals, like bunting or hanging ornaments. • Talk about what colours and shapes they see in these decorations. • Draw a picture of a decoration they would like to make for a festival. • Choose their favourite colours and shapes for the decoration. • Use fabric pieces, felt, or paper to create their decoration. • Practice simple skills like cutting out shapes and gluing or attaching pieces together. • Show their decoration to the group and talk about what they like about it. • Discuss how their decoration makes them feel. • Understand the idea of joining pieces together to make something.		Sparkle Bright Colour Hang Ribbon Glitter Shine Ornament Festive Star	
Junk Modelling/ Construction	• Collect different items that can be used for junk modelling, like boxes, bottles, and lids. • Talk about where these items come from and why reusing them is helpful. • Think about what they want to make, like a car, a robot, or a building. • Draw a simple picture to show what they want to create. • Use the junk materials to build their model, experimenting with stacking, sticking, and joining parts. • Practice using tools like glue sticks or tape to attach pieces. • Show their model to others and talk about what they made. • Discuss what they like about their creation and how they made it. • Learn how to join different items together using glue or tape.		Build Stick Cut Glue Join Shape Create Cardboard Tape Make Model	
Explore understanding of food – A world of food	• Explore and develop skills in mixing/decorating/cutting/spreading • Begin to think of interesting ways to decorate food. • Describe differences between some food groups (i.e. sweet, vegetable etc.). • Discuss how fruit and vegetables are healthy. • Say where some foods come from, (i.e. plant or animal). • Describe textures, tastes and preferences of a variety of foods. • Know the importance of washing hands & cleaning surfaces. • Discuss the rules of food safety and hygiene.		Tasty Sweet Spicy Crunchy Sour Different Smooth Juicy Favourite	

DT Overview

Project		Disciplinary Knowledge	Substantive Knowledge	Language	SDG
Year 1					
Workbook		• Use the workbook to write down and draw simple ideas. • Record basic reasons for their design choices and share simple thoughts about what worked well. • Collect textures, patterns, and simple samples to use in their project.			
Explore understanding of food - fruits	Fruit Kebabs Smoothies Apple Crumble	**Explore and develop skills in cutting, peeling, mixing, blending** **Design/Make/Evaluate** • Begin to design and create appealing products based on some simple design criteria. • Begin to learn how to evaluate their product. • Design food that is visually appealing. **Nutrition** • Begin to know the properties of ingredients and the importance of varied diet. • Explain how food and drink are needed for active/healthy bodies. **Consumer Awareness** • Understand how a variety of food is grown and where their ingredients have come from. • Know that a variety of factors makes food appealing. **Food Safety and Hygiene** • Explain hygiene and keep a hygienic kitchen. • Know when to ask for adult help to assist in cooking and preparing food.	• To know the basic rules of kitchen safety. • To know and recognise at least 10 fruits. • To know what makes an item a fruit.	Names of equipment, name of utensil, food hygiene, hand washing, safety, fruit names, design, make, Fruit names, seasonality, products, design criteria, product	6, 2, 12
Inclusive Playground Design	Can I design, make and evaluate a new desirable playground for my local community to promote inclusion and physical wellbeing in young people?	**Research** • Explore different types of playgrounds and identify features that make them inclusive for everyone. • Learn about the materials used in playground structures and why they are chosen. **Design/Make/Evaluate** • Generate simple ideas for an inclusive playground, considering the needs of all community members. • Develop ideas through drawings, focusing on features that make the playground accessible. • Practice joining different materials to build a simple model of a playground. • Use basic tools to cut, shape, and assemble components with teacher guidance. • Compare their playground model to existing playground structures, discussing what makes it inclusive. • Talk about what works well and what could be improved. **Technical Knowledge** • Learn different methods of joining materials, such as using glue or fasteners. • Understand simple structural features like balance and support.	• To know what a free-standing structure is. • To know how to make a structure stable • To know that an accurate drawing is important when designing a product.	structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, brace, freestanding,	11, 3
Sliders and Levers – Eco Book	Can I design, make and evaluate a class information book to help explain to Reception class how to save energy, recycle	**Research** • Understand the concept of saving energy and why it is important at home and school. Explore existing books that use simple sliders and levers. **Design/Make/Evaluate** • Generate simple ideas for an energy-saving information book. • Develop ideas through drawings, including where sliders and levers can be used.	• Know what a lever/slider is. • To know what a mechanism is. • To know the importance of recycling and saving energy.	lever, slider, mechanism, pivot point, arc, slot, bridge, guide,	7

DT Overview

	and look after the planet?	• Plan and suggest the next steps in making their book. Create sliders and levers, using tools to cut and attach pieces accurately. • Test how well the sliders and levers work in the book. Discuss how their book helps communicate saving energy effectively. **Technical Knowledge** • Understand how sliders and levers work to create movement. Use correct terms like "lever," "slider," and "pivot."	• To know that different mechanisms produce different types of movement.	lever, pivot, slider, left, right, push, pull, up, down, forwards, backwards, arc, straight	
Project		**Disciplinary Knowledge**	**Substantive Knowledge**	**Language**	**SDG**
Year 2					
Workbook		• Plan and explore simple ideas by drawing and writing. • Gather and record textures, patterns, and samples used in their work. • Suggest simple improvements for their own projects. • Use simple words to describe their work, starting to develop a design vocabulary.			
All-Terrain Litter Trolley (Wheels and Axles)	Can I design, make and evaluate a stable vehicle for litter collection over various terrains?	**Research** • Learn about different ways to collect litter and why a cart might be better than carrying by hand. • Explore different wheel types and how they work on different surfaces. **Design/Make/Evaluate** • Use prior knowledge of levers to develop ideas for a litter trolley. • Draw and label the trolley design, showing where wheels and axles will be used.. • Plan the building process step-by-step. • Use tools to measure, cut, and join parts to create a moving trolley, choosing materials based on their properties. • Test the trolley on different surfaces to see how well it moves. • Identify strengths and suggest improvements to make the trolley more effective. **Technical Knowledge** • Understand how wheels and axles function, including fixed vs. freely moving axles. • Use the vocabulary for parts like "axle," "wheel," and "chassis."	• Know what an axle is and its function. • To know that wheels and axles can be assembled in different ways. • To know what a chassis is and its function.	Net, axle holder vehicle, wheel, chassis, body, dowel, masking tape, hacksaw, vice.	6
Glove Puppet for Mental Health (Monster Hand Puppet)	Can I design, Make and Evaluate a glove puppet for themselves to promote mental health through role play?	**Research** • Learn about mental health and why it is important for everyone, including ways we can talk about feelings. • Explore different types of glove puppets and how they can help express emotions. **Design/Make/Evaluate** • Generate ideas for a monster hand puppet that can be used to promote mental health. • Draw a design for the puppet, labelling colours, materials, and features. • Follow the design to sew the puppet, using running stitch or whip stitch. • Use safe techniques for cutting fabric and joining parts. • Test the puppet and discuss how well it represents emotions. • Compare the finished puppet to the original design, suggesting any improvements. **Technical Knowledge** • Learn how to use basic stitches like running stitch and whip stitch. • Understand the properties of different fabrics and why they are suitable for the puppet.	• To know appropriate ways to join fabric. • To know what a template it. • To know ways to embroider/decorate their product.	Needle, thread, scissors, template, puppet, fabric, design, purpose, glove puppet, finger puppets, marionettes, rod puppet needle, thread, design, embroider, evaluate, fray, hand puppet Seam, sew, components,	3

DT Overview

Explore understanding of food – vegetables	Vegetable Soup Hummus and fresh Vegetables Coleslaw	**Explore and develop skills in Cutting/chopping, peeling, mashing, grating, mixing, heating** **Design/Make/Evaluate** • Make products look attractive. • Carefully select ingredients considering taste and texture. • Evaluate products made based on their own likes/dislikes. **Nutrition** • Describe how healthy diet equals variety/balance of food/drinks. • Think about how to grow plants to use in cooking. • Explore eat well plate; explain there are groups of food, describe "five a day".. **Consumer Awareness** • Begin to understand food comes from UK and wider world, needing different environments/climate. • Explore branding of food and drink products. • Begin to explore the seasonality of food. **Food Safety and Hygiene** • Use a greater variety equipment safely including asking for help when heating or preparing food. • Explain the basics of food hygiene including clean hands, surfaces, hair, jewellery, nail varnish**.**	• Recognise at least 20 vegetables. • Know what makes an item a 'vegetable'. • Know what the 'Eat-well' plate is and recommended proportions of food consumed. • Know that different fruit and vegetables grow in different seasons.	, Taste, texture, like, dislike, balance, healthy, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria, 30 x vegetable names.	2, 6

Project	**Disciplinary Knowledge**	**Substantive Knowledge**	**Language**	**SDG**
Year 3				
Workbook	• Observe and record different materials, experimenting with them. • Use a design brief to come up with ideas for projects. • Plan and record the materials used for prototypes. • Explain decisions made, giving reasons for choices. • Add comments to show how to improve their work and reflect on what worked or didn't. • Use simple annotated sketches to communicate ideas.			
Picture Frame as a Gift	Can I design, make and evaluate a sturdy picture frame as a gift.	• To know what items can be recycled and reused • To know how to design a functional product that is fit for purpose. • To know how to accurately measure and cut • To know different ways of attaching materials.	Stability Reinforce Frame Joinery Structure Upright Horizontal Strength Balance Secure	12

Research
- Investigate different types of picture frames, focusing on how they are constructed and reinforced.
- Consider what makes a picture frame visually appealing.

Design/Make/Evaluate
- Create ideas for a picture frame, taking into account strength and aesthetics.
- Develop and communicate ideas through annotated sketches, indicating where reinforcement is needed.
- Plan the building process, listing materials and tools needed.
- Accurately measure, cut, and join wood to build a strong frame.
- Apply finishing touches to make the frame visually appealing as a gift.
- Compare their picture frame to existing products, focusing on strength and appearance.
- Discuss strengths and areas for improvement based on their design goals.

Technical Knowledge
- Learn how to reinforce materials to make them stronger.

DT Overview

		• Use correct terminology for materials and methods, such as "reinforcement," "join," and "aesthetic."			
Shadow Puppet Character (Levers and Linkages)	Can I design, make and evaluate a mechanical shadow puppet using levers and linkages	**Research** • Investigate different types of shadow puppets and how they use movement. • Compare different types of linkages used in puppets to create motion. **Design/Make/Evaluate** • Develop ideas for a shadow puppet using their knowledge of levers from Year 1. • Create annotated sketches showing where linkages will create movement. • Create linkages using card and split pins to allow movement. • Assemble the puppet, ensuring each part moves as intended. • Test the puppet to see how effectively it moves and creates a shadow. • Discuss how the linkages improved the movement of the character. **Technical Knowledge** • Understand how linkages create movement by connecting levers. • Use terms like "linkage," "lever," and "pivot" accurately.	• To know what a pivot mechanism is, and how it is used • To know what a lever and linkage is. • To know what a prototype is. • To know the design process.	Mechanism, lever, linkage, pivot, slot, bridge, Guide, Input Movement, Output Movement Fixed pivot Loose pivot Evaluate	
Explore understanding of food – carbohydrates	An investigation into world flour Flat Bread, Scones and Pasta	**Explore and develop skills in cutting, peeling, mixing, blending, grating. Kneading, baking, weighing and measuring** **Design/Make/Evaluate** • Think about presenting product in interesting/ attractive ways. • Explore how using different ingredients and methods can change the taste/texture of products. • Evaluate products made by themselves and others. **Nutrition** • Describe eat well plate and how a healthy diet equals variety / balance of food and drinks. • Explain importance of food and drink for active, healthy bodies. **Consumer Awareness** • To explore the reason for consumer choices • Begin to know that food is marketed specifically at consumers. **Food Safety and Hygiene** • Know the importance of how to be safe/hygienic. • Understand how to use a greater variety of kitchen equipment safely. • Understand that food allergies affect safe food preparation**.**	• To know what a carbohydrate is. • To know what a consumer is. • To know different foods, have a different cost and come from different places. • To know the importance of how to be safe and hygienic • To know key ingredients can be exchanged. • To know an increased variety of cooking techniques.	hygiene, ingredients, dough, flour, wholemeal, unleavened, nutrition, varied, gluten, carbohydrate, harvest, grain, knead, bake, weigh, measure, consumer, allergy, allergen	6, 2, 12

Project	**Disciplinary Knowledge**	**Substantive Knowledge**	**Language**	**SDG**
Year 4				
Workbook	• Collect and record visual information from different sources. • Plan and try out ideas, thinking about materials and techniques. • Use specific criteria to guide design choices and show how it will work through annotations. • Adapt and improve original ideas as they develop, recording changes in the workbook. • Keep notes to explain their intentions and innovations. • Use cross-sectional diagrams to show details. • Evaluate their product and suggest improvements to make it more appealing. • Start to use basic technical vocabulary to describe their work.			

DT Overview

Litter Picker (Hydraulics and Pneumatics)	Can I apply my knowledge of hydraulic with levers to create a litter picker to clean up my local area.	**Research** • Explore different types of litter pickers and their mechanisms. • Learn how hydraulics and pneumatics are used in everyday products to create movement. **Design/Make/Evaluate** • Develop ideas for a litter picker using prior knowledge of levers and linkages. • Create a design that incorporates either a hydraulic or pneumatic mechanism. • Formulate a step-by-step plan for making the litter picker. • Assemble materials, incorporating a simple hydraulic or pneumatic system for grabbing. • Test the litter picker to evaluate its reach, strength, and ease of use. • Identify what worked well and suggest improvements. **Technical Knowledge** • Understand the basic principles of hydraulics and pneumatics. • Use terms like "hydraulic," "pneumatic," and "cylinder" accurately.	• To know what a pneumatic and hydraulic mechanism is, and how they are used • To know what a lever and linkage is. • To know what a prototype is. • To know how to apply the design process to create a	Inflate Deflate Input movement Output movement Pressure Compression Pneumatic system Tubing Syringe Plunger Pump Seal Airtight	15
Teddy Bear from Recycled School Uniform	Can I design, make and evaluate a new repurposed product from a second-hand pillowcase to promote a sustainable culture?	**Research** • Explore the importance of recycling and repurposing old items to reduce waste. • Investigate different styles of teddy bears and the materials used to make them. **Design/Make/Evaluate** • Create a design for a teddy bear made from old school uniforms, considering the shape and features. • Include details on how different parts will be joined and reinforced. • Use a range of stitches, including back stitch, to sew the teddy bear. • Carefully cut pieces from old uniforms and join them securely, ensuring a neat and strong finish. • Compare the teddy bear to the original design, discussing its appearance and sturdiness. • Reflect on how well the recycled materials worked and suggest any improvements. **Technical Knowledge** • Learn to use a variety of stitches, including back stitch, for different purposes. • Understand how to use different fabrics effectively and how to make strong joints.	• To know that materials can be recycled into new products. • To know a range of different fastenings and how to join them. • To know a variety of stitches. • To know the design process. • To know what a template is and how to use it.	Fabric, names of fabrics, finishing technique, running stitch, backstitch, whipstitch, seam, seam allowance, stitch. recycling, upcycling and repurposing	12
Explore understanding of food – herbs and spices	Tomato Sauce Biscuits Spring Rolls (sweet and savoury)	**Explore and develop skills in cutting, peeling, mixing, blending, grating, baking, weighing and measuring, rolling/folding, frying/boiling/reducing** **Design/Make/Evaluate** • Know that preparing foods in different ways produces a variety of outcomes, in terms of appearance and appeal. • Use a greater variety of preparation techniques. • Design, make and evaluate products made by themselves. • Evaluate products made by themselves and others, offering suggestions for improvement. **Nutrition** • Know that different foods affect bodily and oral health. • Know that some people have allergies or intolerances to specific foods or food groups. • Explore how food contains different amounts of energy, knowing which foods are energy dense.	• To know the name for different cooking methods. • To know the correlation between seasonality, location and cost of foods. • To know food can travel far and this impacts the cost/climate. • To know what Fairtrade is. • To know the names of at least 8 herbs and spices and their effect upon a dish.	spice, savoury, cinnamon, nutmeg, flavour, ginger, zest identifiable flavour characteristics - cooling, earthy, floral, fruity, herbaceous, hot, nutty, piney, pungent, spicy, woody Source, journey, health benefits, origins	12, 2, 9

DT Overview

		Consumer Awareness • Explore an understanding that food is grown, reared or caught in the UK or wider world and brought to the UK. • Understand ingredients can be fresh, pre-cooked or processed. • Develop an understanding of consumer choices. • Explore understanding of portion size. **Food Safety and Hygiene** • Explain how to be safe / hygienic and follow guidelines. • Know that food packaging and labels provide a source of information • Explore the importance of correct food storage			
Project		**Disciplinary Knowledge**	**Substantive Knowledge**	**Language**	**SDG**
Year 5					
Workbook		Pupils use sketchbooks to: • Record research notes and simple diagrams • Produce annotated design sketches • List materials and tools • Record test results and evaluations • Record research into existing products • Develop and annotate design ideas • Note construction steps • Reflect on finished outcomes • Record research on ingredients • Plan dishes Record • Evaluations and reflections	Expectation: • Clear annotations using correct vocabulary • Evidence of thinking and learning • Sketchbooks used as **working documents**, not presentation pieces • Clear reasoning for design choices • Accurate labelling of materials and features		
Mechanisms	**(Mini Trebuchet)** **Outcome:** A working mini trebuchet designed to launch a projectile accurately and safely **Focus:** Mechanisms, forces, accuracy, control	Research: • Simple lever-based mechanisms (e.g. catapults, see-saws, cranes) • How changing pivot position affects movement and force • Basic historical and modern uses of levers Design: • Produce annotated sketches of their trebuchet design • Identify key components (arm, pivot, base) • Agree simple success criteria (e.g. stability, distance, accuracy) Make • Construct a stable base and pivot mechanism • Assemble a lever arm securely • Work safely with basic tools and materials Evaluate • Test their trebuchet and record results • Evaluate performance against success criteria • Suggest realistic improvements Technical Knowledge	• What a lever is and how it works • How pivot position affects force and movement • Basic principles of stability and balance • Safe construction methods	Lever Pivot Counterweight Force Accuracy Stability Trajectory Evaluate	

DT Overview

		• Apply understanding of levers, pivots, and forces • Use correct technical vocabulary accurately • Understand how design choices affect performance			
Construction	**Textiles (Keyring or Pencil Case Monster)** **Term:** Spring **Outcome:** A small textile product designed for a specific user **Focus:** Textiles construction, joining, durability, user needs	Research • Simple textile products and their features • Basic fabric types and their properties • How products are made durable Design • Design a textile product for a named user • Use annotated sketches to show size, shape, and decoration • Identify simple success criteria (fit for purpose, durability) Make • Cut fabric accurately • Use basic joining techniques securely • Assemble a finished product with attention to neatness Evaluate • Evaluate their product against success criteria • Reflect on durability and appearance • Suggest improvements Technical Knowledge • Apply understanding of fabric properties • Use joining techniques appropriately • Use correct textile vocabulary	• Properties of different fabrics • Simple construction techniques • How joining methods affect durability • Decorative vs functional features	Durable Seam Reinforce Stitch Template Functional Join Finish	
Food Technology	**Dairy, Fats and Sugars** **Term:** Summer **Outcome:** A range of dishes demonstrating understanding of dairy, fats, and sugars **Focus:** Nutrition, preparation, evaluation, safety	Research • Where dairy, fats, and sugars come from • Their role in the diet • How they affect texture and taste Design • Design simple dishes using specific ingredients • Consider taste, texture, and appearance • Set success criteria related to flavour and structure Make • Prepare and cook dishes safely • Apply correct techniques • Follow and adapt simple recipes Evaluate • Evaluate dishes based on taste, texture, and appearance • Compare outcomes and suggest improvements Technical Knowledge	• The function of dairy, fats, and sugars in cooking • Basic nutritional understanding • Safe food preparation techniques	Function Texture Nutrition Emulsify Balance Portion Hygiene Evaluate	

DT Overview

		• Apply knowledge of ingredient function • Use correct food vocabulary • Work hygienically and safely			
Project		**Disciplinary Knowledge**	**Substantive Knowledge**	**Language**	**SDG**
Year 6					
Workbook		Pupils use sketchbooks to: • Analyse existing games • Develop and refine designs • Record measurements and layout planning • Record testing results and evaluation notes • Record research into cam types • Annotate design diagrams • Record changes and refinements • Evaluate final movement • Record research and comparisons • Plan dishes • Record evaluations and reflections	Expectation: • Clear reasoning for design decisions • Increasing technical accuracy in drawings • Evidence of improvement over time • Clear mechanical labelling • Evidence of reasoning and improvement • Clear justification of choices • Increasing independence and maturity in evaluation		
Construction	**Woodwork (Ball Bearing Game)** **Term:** Autumn **Outcome:** A wooden ball-bearing game with controlled movement and accurate construction **Focus:** Wood properties, accuracy, structure, reliability	Research • Research existing ball-bearing and tabletop games • Identify how accuracy, layout, and structure affect playability • Investigate how wood is used in small-scale products Design • Develop detailed annotated sketches showing layout and pathways • Consider dimensions, spacing, and structure • Set success criteria linked to reliability and usability Make • Measure, mark, and cut wood accurately • Drill holes and assemble components securely • Refine work during construction to improve quality Evaluate • Test the game for playability and reliability • Evaluate accuracy of construction and structure • Suggest realistic improvements based on testing Technical Knowledge • Apply knowledge of wood properties and reinforcement • Select appropriate tools and techniques • Use correct technical vocabulary consistently	• Properties of wood and why it is used in products • Measuring, marking out, and drilling techniques • Structural reinforcement and stability • How accuracy affects function	Accuracy Measure Reinforce Structure Tolerance Stability Align Evaluate	

DT Overview

Mechanisms	**Cams (Victorian-Style Cam Toy)** **Term:** Spring **Outcome:** A working cam-driven toy inspired by Victorian designs **Focus:** Rotary motion, mechanical systems, control	Research • Research Victorian toys and cam mechanisms • Explore different cam shapes and their effects on movement • Analyse how rotation creates repeated motion Design • Design a cam system using labelled diagrams • Select cam types to achieve desired movement • Consider aesthetics alongside function Make • Construct a cam and follower accurately • Assemble components so movement is smooth and reliable • Adjust components to improve performance Evaluate • Test movement for smoothness and consistency • Evaluate reliability and visual impact • Suggest improvements based on performance Technical Knowledge • Apply understanding of rotary motion • Use correct terminology (cam, follower, shaft) • Select appropriate materials for moving parts	• How cams convert rotary motion into linear movement • Differences between cam types • How mechanical systems repeat motion • Relationship between design and outcome	Cam Follower Rotary motion Linear motion Shaft Repeat Mechanism Control	
Food Technology	**Breakfasts Around the World** **Term:** Summer **Outcome:** A culturally informed breakfast dish **Focus:** Culture, nutrition, informed food choices	Research • Research breakfast traditions from different cultures • Explore nutritional balance and cultural context • Compare ingredients and preparation methods Design • Design a breakfast dish informed by research • Consider nutrition, taste, and cultural authenticity • Set success criteria linked to balance and suitability Make • Prepare and cook dishes independently and safely • Apply appropriate techniques • Adapt methods where necessary Evaluate • Evaluate dishes for taste, nutrition, and cultural relevance • Justify improvements using evidence Technical Knowledge • Apply prior hygiene and safety knowledge independently • Apply nutritional understanding accurately • Use appropriate food vocabulary	• Cultural influences on food choices • Nutritional balance across meals • How preparation methods vary globally • Relationship between culture and diet	Culture Tradition Balance Nutrition Ingredient Authentic Prepare Evaluate	

DT Overview

Project		Disciplinary Knowledge	Substantive Knowledge	Language	SDG
Year 7					
Workbook		Pupils are expected to: • Record structured research (images, notes, comparisons) • Use **CAFÉ** to analyse and develop ideas • Apply **QUE** to refine and evaluate decisions • Produce annotated sketches and **introductory isometric drawings** • Record reflections and evaluations throughout the process • Document research and design development • Show internal structures and mechanisms using annotated sketches and isometric drawings • Record evaluation and refinements • Record cultural research • Plan dishes and evaluate outcomes • Reflect on how research informed design	Expectation: • Clear reasoning • Correct technical vocabulary • Evidence of thinking over time, not finished presentation pages • Sketchbooks clearly show **design development**, not just outcomes • Clear links between research and final outcome		

Construction	**Decorative Materials – Jewellery (Pewter Casting or Enamelling)**
	Term: Autumn
	Outcome: A finished piece of jewellery designed for a specific user
	Focus: Specialist materials, aesthetics, precision, design intent
		Research
		• Research existing jewellery products and decorative styles
		• Explore how materials, finish, and form affect appearance and suitability
		• Identify user preferences and constraints
		Design
		• Develop design ideas using **CAFÉ**:
		  ○ **C**ustomer (user needs and preferences)
		  ○ **A**esthetics (style, colour, finish)
		  ○ **F**unction (wearability, durability)
		  ○ **E**rgonomics (comfort, size, safety)
		• Use **QUE** to refine decisions:
		  ○ **Q**uality
		  ○ **U**ser
		  ○ **E**nvironment
		• Produce annotated design sketches
		• Introduce **isometric drawings** to communicate 3D form
		Make
		• Apply specialist processes safely and accurately
		• Work with increasing precision and attention to finish
			• Properties and behaviour of specialist decorative materials
			• Surface finishing and decorative techniques
			• Health and safety considerations when using heat or specialist tools
			• How aesthetics and material choice influence product appeal
				Aesthetic
				Finish
				Form
				Precision
				Ergonomic
				Material behaviour
				Decorative
				Refine	

DT Overview

		• Follow a planned sequence of making Evaluate • Evaluate final products against CAFÉ and QUE criteria • Assess quality, durability, and suitability for the user • Suggest informed improvements Technical Knowledge • Apply knowledge of material behaviour and decorative processes • Use correct specialist vocabulary • Understand how process choices affect outcome			
Construction	**Textiles with Mechanisms (Ugly Toy / 'Puglie')** **Term:** Spring **Outcome:** A self-standing promotional toy incorporating textiles and movement **Focus:** Applied textiles, internal structure, simple mechanisms	Research • Research novelty toys, branding, and promotional products • Explore how movement, structure, and materials are combined • Identify target audience and purpose Design • Develop ideas using **CAFÉ**, focusing on user and function • Use **QUE** to consider quality and environmental impact • Produce annotated sketches showing internal structure and movement • Use **isometric drawings** to communicate 3D form and components Make • Construct a textile product with internal support • Integrate a simple mechanism effectively • Adapt construction methods to solve problems Evaluate • Test stability, movement, and durability • Evaluate suitability for promotional purpose • Suggest improvements linked to design intent Technical Knowledge • Apply knowledge of textile properties and joining methods • Apply understanding of simple mechanisms • Use appropriate technical vocabulary accurately	• How textiles can be structured and reinforced • How simple mechanisms can be integrated into soft materials • How construction choices affect stability and movement • Relationship between design intent and build method	Structure Mechanism Reinforce Prototype Movement Function User Durability	
Food Technology	**Meat Alternatives** **Term:** Summer **Outcome:** A savoury dish using meat alternatives, designed for a specific context **Focus:** Sustainability, nutrition, informed choice	Research • Research meat alternatives and protein sources • Explore sustainability and dietary needs • Compare nutritional information Design • Design a dish using a meat alternative • Consider taste, texture, nutrition, and suitability • Set success criteria linked to purpose Make	• Different types of meat alternatives • Nutritional value of protein sources • Environmental impact of food choices	Protein Sustainability Texture Alternative Nutrition Source Impact Evaluate	

DT Overview

		• Prepare and cook dishes safely and independently • Apply appropriate techniques for chosen ingredients • Adapt methods where needed Evaluate • Evaluate dishes based on taste, texture, nutrition, and sustainability • Justify improvements using evidence Technical Knowledge • Apply prior food hygiene and safety knowledge independently • Apply understanding of nutrition and protein sources • Use accurate food vocabulary	• How ingredient choice affects outcome		
Project		**Disciplinary Knowledge**	**Substantive Knowledge**	**Language**	**SDG**
Year 8					
Workbook		Sketchbooks are used to: • Analyse systems and subsystems • Record testing and refinements • Communicate ideas using **confident isometric drawings** • Apply CAFÉ and QUE independently • Central planning and thinking tools • Used to document research, design decisions, and testing • Used to show **iteration, refinement, and evaluation** • Record research and comparisons • Plan and evaluate designs • Reflect critically on outcomes	Expectation: • Sketchbooks clearly evidence **systems-level thinking** • Diagrams explain *how things work*, not just what they look like • Confident use of **isometric paper** • CAFÉ and QUE embedded without prompting • Clear evidence of design development over time • Mature, evidence-based evaluation • Clear links between research and redesign		
Mechanisms (incl. electrical/electronic systems)	**Preparation Unit** **Term:** Autumn **Outcome:** Tested mechanical and electrical subsystems ready for application **Focus:** Systems thinking, revisiting and applying prior technical knowledge	Research • Research fairground rides and moving systems • Analyse how mechanisms and electrical systems work together • Identify constraints such as safety, stability, and reliability Design • Design and plan mechanical and electrical subsystems • Use **CAFÉ** and **QUE** to justify design choices • Produce annotated sketches and **isometric drawings** showing component interaction Make • Construct and test subsystems • Refine designs based on testing • Work with increasing independence and responsibility Evaluate	• How mechanical systems interact • How simple electrical components support movement or control • Reliability, safety, and system efficiency	System Subsystem Input Output Control Reliability Component Refine	

DT Overview

		• Evaluate subsystem performance • Identify weaknesses and propose improvements • Reflect on reliability and safety Technical Knowledge • Apply previously taught knowledge of mechanisms and basic electronics • Select appropriate components and techniques • Use technical vocabulary accurately and consistently			
Large scale Construction and Mechanisms (Structures)	**Fairground Ride (Mechanisms & Electronics)** **Term:** Spring **Outcome:** A working fairground ride model incorporating movement and control **Focus:** Integration, collaboration, independence	Research • Research existing fairground rides and mechanical systems • Analyse user experience, safety, and movement • Identify constraints and design challenges Design • Develop a coherent design using **CAFÉ** and **QUE** • Plan components, roles, and construction stages • Communicate ideas through annotated sketches and **isometric drawings** Make • Build and assemble multiple components • Integrate mechanisms and electrical elements Evaluate • Evaluate function, reliability, and user experience • Reflect on teamwork and problem-solving • Propose informed improvements Technical Knowledge • Apply accumulated knowledge of materials, mechanisms, and electronics • Make informed technical decisions independently • Use technical language fluently	• Mechanical systems knowledge • Basic electronics understanding • Structural principles • Safety and reliability considerations This unit is **application-led**, not content-led.	Integrate Mechanism Structure Stability Control Reliability Safety Evaluate	
Food Technology	**Fake-away** **Term:** Summer **Outcome:** A healthier version of a popular takeaway meal **Focus:** Critical food literacy, health, cost, lifestyle	Research • Research popular takeaway foods • Analyse nutritional content, cost, and frequency of consumption • Consider lifestyle and health implications Design • Redesign a takeaway meal to be healthier • Consider nutrition, portion size, and appeal • Set success criteria linked to health and suitability Make • Prepare and cook dishes independently and safely • Adapt recipes to improve outcomes • Apply appropriate techniques confidently Evaluate	• Pupils deepen understanding of: • Nutrition and health • Cost and accessibility of food • Lifestyle choices and long-term impact	Nutrition Portion Adapt Health Cost Processed Compare Justify	

DT Overview

		• Compare original and redesigned meals • Evaluate nutritional value, taste, and affordability • Justify improvements using evidence Technical Knowledge • Apply food hygiene and safety knowledge independently • Apply nutritional understanding critically • Use appropriate technical vocabulary			