



DESIGN & TECHNOLOGY

Design it. Make it. Improve it.

CREATING SOLUTIONS. SHAPING THE FUTURE.

Design and Technology inspires children to be creative problem solvers who design and make products that have purpose and meaning. Through an iterative process of designing, making, evaluating and improving, children develop practical skills, resilience and innovation to succeed in an ever-changing world.



LEADERSHIP



ORGANISATION



RESILIENCE



INITIATIVE



COMMUNICATION



KINDNESS

• OUR DT GOLDEN THREADS •



MECHANISMS AND MOVEMENT

Understanding how things move and using mechanisms to create movement in purposeful products.



TEXTILES

Exploring and using textile materials and techniques to design and make functional and decorative products.



FOOD

Preparing and cooking food, understanding nutrition and making healthy choices.



STRUCTURES

Designing and building strong, stable structures for a range of purposes and users.



THINK CREATIVELY • WORK SKILLFULLY • EVALUATE CAREFULLY • IMPROVE CONFIDENTLY



Year 3 Design and technology Medium Term plans

<u>Year 3</u>	<u>Dover Coastal Café</u>	<u>Stone Age to Iron Age Roundhouse builders</u>	<u>Romans Chariot Challenge</u>
Prior learning	• Knows that food comes from plants and animals. • Can prepare food safely and hygienically using simple tools. • Can design a food product for a specific purpose and user. • Can evaluate and improve a finished product.	• Knows that structures need to be strong, stiff and stable. • Can select suitable materials for a structure. • Can join and strengthen materials using simple techniques. • Can evaluate a finished structure against design criteria.	• Knows that wheels and axles help products move. • Can design and build a moving product for a purpose. • Can select suitable materials and components. • Can test and improve a finished product.
Year 3	Topic: Cooking and Nutrition – Coastal Café Enquiry Question: How can we design and make a healthy savoury snack using ingredients from Britain and the coast?	Topic: Structures – Roundhouse Builders Enquiry Question: How can we design and build a strong Iron Age roundhouse?	Topic: Mechanisms – Roman Chariot Challenge Enquiry Question: How can we design and make a Roman chariot that moves effectively?
Explore 1	WALT: understand the principles of a healthy and varied diet. Children: • Explore the main food groups. • Discuss the importance of a balanced diet. • Investigate foods linked to Britain and coastal regions. • Sort foods into different food groups. Skills: • Identifies food groups. • Discusses healthy choices.	WALT: investigate and evaluate Iron Age roundhouses. Children: • Explore images, diagrams and models of Iron Age roundhouses. • Identify key features of roundhouses. • Investigate the materials used, including wattle and daub, timber and thatch. • Discuss why roundhouses were suitable homes. Skills: • Evaluates existing structures. • Identifies structural features.	WALT: investigate and evaluate Roman vehicles and moving mechanisms. Children: • Explore Roman chariots, carts and other vehicles. • Identify the purpose of Roman vehicles. • Investigate wheels, axles and moving parts. • Discuss how mechanisms help vehicles move. Skills: • Evaluates existing products. • Identifies mechanisms. • Makes links between design and purpose.

	• Explores existing food products. Vocabulary: nutrition, healthy, balanced diet, carbohydrates, protein, dairy, fruit, vegetables	• Makes links between design and purpose. Vocabulary: roundhouse, structure, wattle, daub, thatch, timber	Vocabulary: mechanism, vehicle, chariot, wheel, axle, movement
Design 1	WALT: investigate and evaluate savoury food products. Children: • Explore a range of savoury snacks. • Analyse ingredients and nutritional content. • Discuss which products are suitable for different users. • Develop design criteria for a healthy savoury snack. Skills: • Evaluates existing products. • Develops design criteria. • Uses research to inform decisions. Vocabulary: ingredients, evaluate, nutritional value, design criteria, product	WALT: understand how structures can be strengthened, stiffened and reinforced. Children: • Investigate how roundhouses were constructed. • Explore how circular shapes create strength. • Test simple structures. • Discuss methods of strengthening and reinforcing. Skills: • Investigates structures. • Tests materials and designs. • Identifies successful construction methods. Vocabulary: strengthen, stiffen, reinforce, stable, support	WALT: understand how wheels and axles work. Children: • Investigate different wheeled vehicles. • Explore how wheels and axles create movement. • Test simple mechanisms. • Record observations and findings. Skills: • Investigates mechanisms. • Tests products. • Makes observations. Vocabulary: wheel, axle, rotate, movement, mechanism
Make 1	WALT: design a healthy savoury snack for a specific user. Children: • Choose a target user. • Generate ideas for a savoury snack. • Create annotated design drawings. • Explain design choices using design criteria.	WALT: develop ideas for a model Iron Age roundhouse. Children: • Generate ideas through discussion. • Create annotated sketches. • Develop design criteria. • Explain design choices using research. Skills:	WALT: design a Roman-inspired moving vehicle. Children: • Develop design criteria. • Generate ideas through discussion and sketching. • Create annotated design drawings. • Explain how the design meets its purpose. Skills:

	Skills: • Generates ideas. • Communicates ideas through annotated sketches. • Designs for a purpose and user. Vocabulary: design, user, purpose, annotate, criteria	• Generates ideas. • Uses annotated sketches. • Develops design criteria. Vocabulary: design, criteria, annotate, purpose, function	• Develops design criteria. • Generates ideas. • Uses annotated sketches to communicate designs. Vocabulary: design, criteria, annotate, purpose, function
Make 2	WALT: select ingredients and prepare food safely. Children: • Explore where ingredients come from. • Consider seasonality and sourcing. • Practise food preparation techniques. • Use tools safely and hygienically. Skills: • Selects ingredients appropriately. • Uses tools safely. • Demonstrates food preparation skills. Vocabulary: seasonality, sourcing, hygiene, preparation, technique	WALT: create a detailed design for a roundhouse. Children: • Produce a final design plan. • Select appropriate materials. • Consider appearance, strength and historical accuracy. • Justify design decisions. Skills: • Produces detailed plans. • Selects materials appropriately. • Makes informed design decisions. Vocabulary: materials, plan, structure, appearance, authentic	WALT: select materials and plan the construction of a moving vehicle. Children: • Investigate suitable materials and components. • Consider strength, durability and appearance. • Refine designs. • Justify material choices. Skills: • Selects appropriate materials. • Refines designs. • Makes informed decisions. Vocabulary: materials, components, durability, chassis, structure
Make 3	WALT: prepare and make a healthy savoury snack. Children: • Follow a recipe and design plan. • Measure and prepare ingredients accurately. • Apply cooking and preparation techniques. • Present the finished product.	WALT: construct a model Iron Age roundhouse. Children: • Follow their design plan. • Select and use tools safely. • Construct the roundhouse structure. • Apply techniques to strengthen and reinforce the model.	WALT: construct a Roman chariot using wheels and axles. Children: • Follow a design plan. • Build the chassis and body. • Assemble wheels and axles. • Test movement throughout construction.

	Skills: • Follows a plan. • Measures accurately. • Creates a finished food product. Vocabulary: measure, prepare, recipe, presentation, product	Skills: • Uses tools safely. • Constructs a stable structure. • Applies strengthening techniques. Vocabulary: construct, assemble, reinforce, stable, framework	Skills: • Uses tools safely and accurately. • Constructs a moving product. • Applies understanding of mechanisms. Vocabulary: construct, assemble, chassis, axle, wheel
Reflect 1	WALT: evaluate a savoury snack against design criteria. Children: • Taste and evaluate products. • Compare products with original designs. • Gather feedback from others. • Suggest improvements. Skills: • Evaluates products. • Reflects on decisions. • Uses feedback to improve designs. Vocabulary: evaluate, feedback, improve, criteria, successful	WALT: evaluate a roundhouse against design criteria. Children: • Compare finished roundhouses with original designs. • Evaluate strength, appearance and function. • Gather feedback from others. • Suggest improvements. Skills: • Evaluates products. • Reflects on decisions. • Uses feedback to improve designs. Vocabulary: evaluate, criteria, feedback, improve, successful	WALT: evaluate a Roman chariot against design criteria. Children: • Test completed chariots. • Compare products with original designs. • Gather feedback from others. • Identify strengths and improvements. Skills: • Evaluates products. • Reflects on decisions. • Uses feedback to improve designs. Vocabulary: evaluate, criteria, feedback, improve, successful
Assessment	Enquiry Question: How can we design and make a healthy savoury snack using ingredients from Britain and the coast? Children will demonstrate understanding by: • Understanding the principles of a healthy diet.	Enquiry Question: How can we design and build a strong Iron Age roundhouse? Children will demonstrate understanding by: • Exploring and evaluating historical structures. • Understanding how structures are strengthened and reinforced. • Designing for a specific purpose.	Enquiry Question: How can we design and make a Roman chariot that moves effectively? Children will demonstrate understanding by: • Exploring and evaluating moving vehicles. • Understanding how wheels and axles work. • Designing for a specific purpose. • Constructing a moving vehicle. • Evaluating a finished product.

	• Evaluating existing food products. • Designing for a specific user. • Preparing food safely and hygienically. • Evaluating a finished product.	• Constructing a stable model. • Evaluating a finished product.	
End Point	Children design, make and evaluate a healthy savoury snack inspired by foods from Britain and coastal regions. By the end of this unit, children will understand the importance of a healthy and varied diet and how food products are designed for specific users and purposes. They will design, prepare and evaluate a healthy savoury snack using appropriate ingredients and food preparation techniques.	Children design, make and evaluate a model Iron Age roundhouse that is strong, stable and historically inspired. By the end of this unit, children will understand how Iron Age roundhouses were designed and built using available materials. They will know how structures can be strengthened, stiffened and reinforced and will apply this knowledge to create and evaluate their own roundhouse model.	Children design, make and evaluate a Roman-inspired chariot that uses wheels and axles to move effectively. By the end of this unit, children will understand how mechanisms such as wheels and axles enable movement. They will know how Roman vehicles were designed for different purposes and will apply this knowledge to design, make and evaluate a moving Roman chariot.
Substantive Knowledge (What children need to remember)	Children will know: • The main food groups and their functions within a healthy diet. • A balanced diet includes a variety of foods. • Ingredients come from different sources and may be seasonal. • Food products are designed for specific users and purposes. • Hygiene and safety are important when preparing food. • Design criteria help designers evaluate success.	Children will know: • Iron Age roundhouses were built using timber, wattle, daub and thatch. • Roundhouses were designed to provide shelter and protection. • Circular structures help distribute weight and improve stability. • Structures can be strengthened, stiffened and reinforced. • Design criteria help designers make decisions. • Products can be improved through evaluation.	Children will know: • Mechanisms help products perform functions. • Wheels and axles work together to create movement. • Roman chariots were designed for transport, racing and warfare. • Different materials have different properties. • Design criteria help designers make decisions. • Products can be improved through testing and evaluation.

Disciplinary Knowledge (Thinking like a designer)	Children will: • Research and evaluate existing food products. • Use research to create design criteria. • Design for a specific user and purpose. • Select ingredients appropriately. • Use food preparation techniques safely. • Evaluate and improve products.	Children will: • Investigate and evaluate existing structures. • Use research to inform designs. • Develop and communicate ideas through annotated sketches. • Select materials based on function and appearance. • Apply construction techniques purposefully. • Evaluate and improve products.	Children will: • Investigate and evaluate existing products. • Use research to inform designs. • Develop ideas through annotated sketches. • Select materials and components appropriately. • Construct products using mechanisms. • Test, evaluate and improve products.
Adaptive Teaching	Support • Design templates and planning frames. • Visual vocabulary cards. • Adult support during food preparation. • Step-by-step recipe guides. • Pre-measured ingredients where appropriate. Challenge • Adapt recipes for different users. • Justify ingredient choices using nutritional knowledge. • Consider seasonality when selecting ingredients. • Suggest multiple improvements based on evaluation.	Support • Pre-drawn design templates. • Visual examples of roundhouses. • Adult support with construction techniques. • Vocabulary mats and labelled diagrams. • Step-by-step construction guides. Challenge • Incorporate additional historical features. • Explore different strengthening methods. • Justify material choices in detail. • Explain how structural features improve stability. • Suggest multiple improvements following evaluation.	Support • Pre-drawn design templates. • Visual examples of Roman vehicles. • Adult support during construction. • Vocabulary mats and labelled diagrams. • Pre-prepared wheel and axle systems where appropriate. Challenge • Create more complex vehicle designs. • Adapt mechanisms to improve performance. • Justify material choices in detail. • Explain how wheels and axles work using technical vocabulary. • Suggest multiple improvements following evaluation.
Assessment for Learning	Throughout the unit, teachers will assess understanding through: • Design drawings and annotations. • Discussion and questioning. • Observation of food preparation skills. • Evaluation activities. • Reflection discussions.	Throughout the unit, teachers will assess understanding through: • Design sketches and annotations. • Discussion and questioning. • Observation of construction techniques. • Testing of structures. • Product evaluations.	Throughout the unit, teachers will assess understanding through: • Design sketches and annotations. • Discussion and questioning. • Observation of construction techniques. • Testing activities. • Product evaluations.

	• Retrieval of key vocabulary and knowledge.	• Reflection discussions. • Retrieval of key vocabulary and knowledge.	• Reflection discussions. • Retrieval of key vocabulary and knowledge.
National Curriculum coverage	Pupils should be taught to: • Understand and apply the principles of a healthy and varied diet. • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. • Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. • Generate, develop and communicate ideas through discussion and annotated sketches. • Evaluate existing products and their own ideas and products.	Pupils should be taught to: • Generate, develop and communicate ideas through discussion, annotated sketches and prototypes. • Select from and use a wider range of tools and equipment accurately. • Select from and use a wider range of materials according to their functional properties. • Apply understanding of how to strengthen, stiffen and reinforce more complex structures. • Evaluate their ideas and products against design criteria.	Pupils should be taught to: • Generate, develop and communicate ideas through discussion, annotated sketches and prototypes. • Select from and use a wider range of tools and equipment accurately. • Select from and use a wider range of materials and components according to their functional properties. • Understand and use mechanical systems in their products. • Evaluate their ideas and products against design criteria.

DT PROGRESSION TIMELINE EYFS-YEAR 6

Building knowledge, skills and creativity through design, make, evaluate and improve.



OUR JOURNEY	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
EXPLORING & UNDERSTANDING ↓ DESIGNING ↓ MAKING ↓ EVALUATING ↓ EVERY CHILD WILL...	Explore materials, foods and existing products through play and discussion.	Explore a range of products and materials. Talk about how and why things are made.	Explore more complex products and ingredients. Identify features and how they work.	Research products and ingredients in depth. Understand purpose and user.	Investigate how products work and are made. Understand systems and structures.	Analyse products in detail. Consider function, aesthetics, sustainability and user needs.	Investigate, research and question widely. Understand innovation and impact.
	Generate simple ideas and make choices with support. Begin to plan.	Design purposeful products for a specific user using simple design criteria.	Develop ideas and designs. Choose materials and explain choices.	Create detailed plans and sketches with annotations. Use design criteria.	Use research to inform designs. Create prototypes and refine ideas.	Produce detailed designs and plans. Consider function, form and sustainability.	Develop innovative designs with clear purpose. Plan using advanced tools.
	Use tools and materials safely to make simple models and food products.	Make products following a plan. Use a range of tools and materials.	Use tools and techniques to make quality products.	Apply skills and techniques with increasing independence.	Use a wider range of tools and techniques with accuracy.	Work confidently and accurately. Combine techniques and select appropriate materials.	Use advanced techniques and technology to make high-quality products.
	Talk about what they like and dislike. Begin to suggest changes.	Evaluate products against design criteria. Suggest simple improvements.	Evaluate against criteria and user needs. Identify what worked well.	Test and evaluate products. Make improvements based on feedback.	Evaluate function, quality and appearance. Improve designs.	Critically evaluate products. Consider sustainability and impact. Refine ideas.	Evaluate thoroughly and make considered improvements. Reflect on learning.
	Be curious, explore and enjoy using tools and materials safely.	Design and make simple products for a purpose.	Apply skills to create functional and appealing products.	Test their knowledge to solve problems and create quality products.	Design and make products that are fit for purpose and well made.	Work confidently and creatively to design innovative products with purpose.	Become independent, creative problem solvers and critical evaluators.

OUR DT GOLDEN THREADS



MECHANISMS AND MOVEMENT

Understanding how things move and using mechanisms to create purposeful products.



TEXTILES

Exploring and using fabrics and techniques to design and make functional and decorative products.



FOOD

Preparing and cooking a variety of dishes. Understanding nutrition, seasonality and where food comes from.



STRUCTURES

Designing and building strong, stable structures for a range of purposes and users.



THINK CREATIVELY



WORK SKILLFULLY



COMMUNICATE IDEAS



EVALUATE CAREFULLY



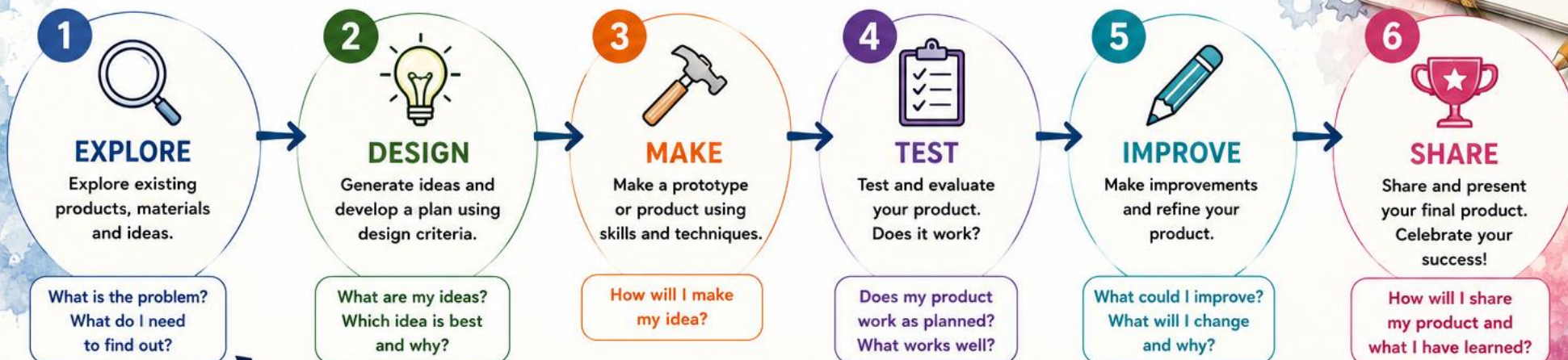
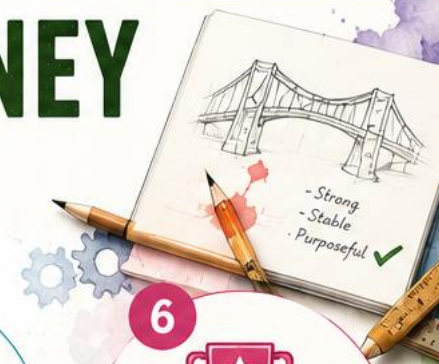
IMPROVE CONFIDENTLY

**DESIGN IT.
MAKE IT.
IMPROVE IT.**

DT DESIGN PROCESS JOURNEY

Design it. Make it. Improve it.

WE ARE DESIGNERS • WE ARE MAKERS • WE SOLVE PROBLEMS



DESIGN IS AN ITERATIVE PROCESS – WE KEEP IMPROVING!



MECHANISMS AND MOVEMENT

Understanding how things move and using mechanisms to create movement in purposeful products.

Examples: levers, linkages, gears, wheels and axles, electrical systems.



TEXTILES

Exploring and using fabrics and techniques to design and make functional and decorative products.

Examples: sewing, stitching, joining, embellishing, finishing.



FOOD

Preparing and cooking a variety of dishes. Understanding nutrition, seasonality and where food comes from.

Examples: cooking techniques, flavour, presentation, hygiene.



STRUCTURES

Designing and building strong, stable structures for a range of purposes and users.

Examples: frameworks, shells, bridges, buildings, 3D forms.

AS DESIGNERS
AND MAKERS
WE...



THINK CREATIVELY

We explore ideas and solve problems.



WORK SKILLFULLY

We use the right tools, materials and techniques.



COMMUNICATE IDEAS

We share our thoughts and listen to others.



EVALUATE CAREFULLY

We look at what works well and what could improve.



IMPROVE CONFIDENTLY

We learn from mistakes and keep improving.

EVERY DESIGN STARTS WITH AN IDEA. EVERY PRODUCT TELLS A STORY. EVERY IMPROVEMENT MAKES US BETTER.