



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 1 Design and technology Medium Term plans

<u>Year 1</u>	<u>Dinosaurs</u> <u>Fruit Feast</u>	<u>The Great Fire of London</u> <u>London's Strongest Houses</u>	<u>Transport</u> <u>Wheels and Axles</u>
Prior learning	• Can explore different foods using their senses. • Can talk about healthy foods. • Can use simple tools safely with support. • Can make simple creations using a range of materials.	• Can build models using a variety of construction materials. • Can join materials in different ways. • Can talk about what they have made. • Can explore which materials are strong or weak.	• Can explore how everyday objects move. • Can build simple models using construction materials. • Can use simple tools safely. • Can talk about how and why things work.
Year 1	Cooking and Nutrition – Fruit Kebabs Linked Topic Enquiry Question How can we design and make a healthy fruit kebab?	Topic: Structures – Houses Enquiry Question: How can we design and build a strong house?	Topic: Mechanisms – Vehicles (Wheels and Axles) Enquiry Question: How can we design and make a vehicle that moves?
Explore 1	WALT: explore and evaluate a range of fruit products. Children: • Taste and compare different fruits. • Discuss appearance, texture and taste. • Explore examples of fruit kebabs. • Identify features they like and dislike. Skills: • Evaluates existing products. • Expresses opinions. • Identifies product features. Vocabulary: fruit, healthy, taste, texture, appearance, evaluate	WALT: explore and evaluate different types of houses and structures. Children: • Explore a range of houses and buildings. • Compare old and modern houses. • Discuss what makes a house strong. • Identify features of houses from the Great Fire of London. Skills: • Evaluates existing structures. • Identifies key features. • Expresses opinions about products. Vocabulary:	WALT: explore and evaluate a range of vehicles and how they move. Children: • Explore a variety of vehicles. • Identify different types of transport. • Investigate wheels and axles. • Discuss what makes vehicles move. Skills: • Evaluates existing products. • Identifies key features. • Explores mechanisms. Vocabulary:

		house, structure, building, strong, weak, materials	vehicle, transport, wheel, axle, mechanism, movement
Design 1	WALT: design a healthy fruit kebab using simple design criteria. Children: • Learn where fruit comes from. • Discuss healthy eating. • Generate ideas for a fruit kebab. • Draw and label a design. Skills: • Generates ideas. • Communicates ideas through drawings. • Develops simple design criteria. Vocabulary: design, plan, criteria, ingredient, healthy	WALT: design a house using simple design criteria. Children: • Discuss what their house needs to include. • Explore simple design criteria. • Draw and label a house design. • Choose materials for construction. Skills: • Generates ideas. • Communicates ideas through drawings. • Develops simple design criteria. Vocabulary: design, plan, criteria, materials, features	WALT: design a vehicle using simple design criteria. Children: • Discuss what their vehicle needs to do. • Explore simple design criteria. • Draw and label a vehicle design. • Select materials for construction. Skills: • Generates ideas. • Communicates ideas through drawings. • Develops design criteria. Vocabulary: design, plan, criteria, purpose, feature
Make 1	WALT: practise preparing fruit safely. Children: • Learn food hygiene rules. • Practise peeling and cutting fruit. • Explore safe use of equipment. • Discuss safety expectations. Skills: • Uses tools safely. • Develops food preparation skills. Vocabulary: hygiene, peel, cut, slice, safe	WALT: explore ways of joining and strengthening materials. Children: • Investigate joining card and paper. • Explore folding, rolling and layering techniques. • Test which methods make structures stronger. • Record findings through discussion. Skills: • Explores construction techniques. • Tests materials. • Identifies successful joins. Vocabulary: join, fold, strengthen, support, structure	WALT: investigate how wheels and axles work. Children: • Explore different wheels and axles. • Test how vehicles move. • Investigate what happens when wheels or axles are changed. • Discuss findings. Skills: • Investigates mechanisms. • Tests ideas. • Makes observations. Vocabulary: wheel, axle, rotate, mechanism, movement

			WALT: To explore sliders and levers as mechanisms. Children: Explore books with moving parts. Investigate slider and lever mechanisms. Create a simple moving picture of a vehicle. Compare wheels and axles with sliders and levers. Vocabulary: slider, lever, mechanism, pivot, movement
Make 2	WALT: make a fruit kebab following a design. Children: • Select ingredients. • Cut fruit safely. • Assemble fruit onto skewers. • Follow their design plan. Skills: • Selects ingredients appropriately. • Assembles ingredients. • Follows a design. Vocabulary: assemble, ingredient, skewer, arrange	WALT: construct a house using a range of materials. Children: • Follow their design. • Cut and join materials. • Build the main structure. • Check stability throughout construction. Skills: • Uses tools appropriately. • Constructs a simple structure. • Follows a design plan. Vocabulary: construct, build, stable, structure, assemble	WALT: construct a vehicle using wheels and axles. Children: • Follow their design plan. • Select materials and components. • Assemble the vehicle structure. • Attach wheels and axles. Skills: • Uses tools and materials appropriately. • Assembles components. • Follows a design plan. Vocabulary: assemble, construct, attach, structure, component
Make 3	WALT: improve and present a fruit kebab. Children: • Review finished products. • Make improvements where possible. • Consider presentation. • Prepare products for evaluation.	WALT: improve and finish a house. Children: • Add details such as windows, doors and roofs. • Strengthen weak areas. • Review against design criteria. • Complete the finished house.	WALT: test and improve a vehicle. Children: • Test whether vehicles move successfully. • Identify problems. • Make improvements. • Refine designs.

	Skills: • Refines products. • Makes purposeful choices. Vocabulary: improve, presentation, attractive	Skills: • Refines products. • Makes purposeful improvements. • Evaluates work during construction. Vocabulary: improve, detail, roof, window, door	Skills: • Tests products. • Solves problems. • Improves designs. Vocabulary: test, improve, problem, solution, refine
Reflect 1	WALT: evaluate a fruit kebab against design criteria. Children: • Taste and evaluate products. • Discuss what worked well. • Compare finished product to design. • Suggest improvements. Skills: • Evaluates products. • Reflects on decisions. Vocabulary: evaluate, criteria, success, improve	WALT: evaluate a house against design criteria. Children: • Compare finished houses. • Test how stable their structures are. • Discuss strengths and weaknesses. • Suggest improvements for future designs. Skills: • Evaluates products. • Reflects on decisions. • Identifies improvements. Vocabulary: evaluate, criteria, stable, improve, successful	WALT: evaluate a vehicle against design criteria. Children: • Compare finished vehicles. • Test movement and effectiveness. • Discuss strengths and weaknesses. • Suggest improvements for future designs. Skills: • Evaluates products. • Reflects on decisions. • Identifies improvements. Vocabulary: evaluate, criteria, successful, improve, effectiveness
Assessment	Enquiry Question: How can we design and make a healthy fruit kebab? Children will demonstrate understanding by: • Designing a healthy product. • Using tools safely. • Preparing fruit independently. • Following a design. • Evaluating a finished product.	Enquiry Question: How can we design and build a strong house? Children will demonstrate understanding by: • Exploring existing structures. • Designing a house for a purpose. • Joining materials successfully. • Constructing a stable structure. • Evaluating a finished product.	Enquiry Question: How can we design and make a vehicle that moves? Children will demonstrate understanding by: • Exploring existing vehicles. • Understanding how wheels and axles work. • Designing a vehicle for a purpose. • Constructing a moving vehicle. • Evaluating a finished product.

End Point	Children design, make and evaluate a healthy fruit kebab. By the end of this unit, children will understand that fruit is part of a healthy diet and that products are designed for a purpose. They will design, make and evaluate a healthy fruit kebab using simple food preparation skills.	Children design, make and evaluate a model house inspired by buildings from the Great Fire of London. By the end of this unit, children will understand that structures need to be strong and stable. They will design, build and evaluate a model house using simple construction techniques and explain how their design met its purpose.	Children design, make and evaluate a vehicle with wheels and axles that can move independently.
Substantive Knowledge (What children need to remember)	Children will know: • Fruit comes from plants grown in different places. • Fruit is part of a healthy diet. • Different fruits have different tastes and textures. • Hygiene is important when preparing food. • Products are designed for a purpose.	Children will know: • Structures are built for a purpose. • Different materials have different properties. • Folding and joining can make structures stronger. • Stable structures are less likely to fall over. • Designers improve products through testing and evaluation.	Children will know: • Vehicles are designed for different purposes. • Wheels and axles are mechanisms that help vehicles move. • Mechanisms are parts that make products work. • Different materials can be used to build vehicles. • Products can be improved through testing and evaluation.
Disciplinary Knowledge (Thinking like a designer)	Children will: • Explore existing products. • Design a product for a purpose. • Select ingredients appropriately. • Use tools safely. • Evaluate a finished product.	Children will: • Explore existing structures. • Design a product to meet a need. • Select appropriate materials. • Test and improve structures. • Evaluate finished products.	Children will: • Explore existing products. • Investigate how mechanisms work. • Design a product for a purpose. • Select materials and components. • Test and improve products. • Evaluate finished products.
Adaptive Teaching	Support • Picture design templates. • Adult support when cutting. • Visual vocabulary cards. • Pre-prepared fruit where appropriate. Challenge • Create more complex fruit patterns. • Justify ingredient choices. • Explain healthy eating choices.	Support • Pre-drawn design templates. • Adult support with cutting and joining. • Visual examples of houses. • Simple step-by-step instructions. Challenge • Create more detailed structures. • Explore multiple strengthening techniques.	Support • Pre-drawn design templates. • Adult support with assembly. • Visual examples of vehicles. • Step-by-step instructions. • Pre-made wheel and axle sets where appropriate. Challenge • Create more complex vehicle designs. • Explore different wheel sizes.

		• Justify material choices. • Explain why structures are stable.	• Explain how mechanisms work. • Suggest improvements based on testing.
Assessment for Learning	Throughout the unit, teachers will assess understanding through: • Design drawings. • Discussion and questioning. • Observation of tool use. • Product evaluation. • Reflection activities.	Throughout the unit, teachers will assess understanding through: • Design drawings. • Discussion and questioning. • Observation of construction techniques. • Testing and evaluation activities. • Reflection discussions.	Throughout the unit, teachers will assess understanding through: • Design drawings. • Discussion and questioning. • Observation of construction techniques. • Vehicle testing activities. • Product evaluations. • Reflection discussions.
Curriculum coverage	Pupils should be taught to: • Design purposeful products. • Generate, develop and communicate ideas. • Select from and use a range of tools and equipment. • Select from and use ingredients according to their characteristics. • Understand where food comes from.	Pupils should be taught to: • Design purposeful products based on design criteria. • Generate, develop and communicate ideas through talking and drawing. • Select from and use a range of tools and materials. • Build structures and explore how they can be made stronger, stiffer and more stable. • Evaluate existing products and their own ideas and products.	Pupils should be taught to: • Design purposeful products based on design criteria. • Generate, develop and communicate ideas through talking and drawing. • Select from and use a range of tools and materials. • Explore and use mechanisms such as wheels and axles. • Evaluate existing products and their own ideas and products.

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	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.
DESIGNING	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.
MAKING	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.
EVALUATING	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.
EVERY CHILD WILL...	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



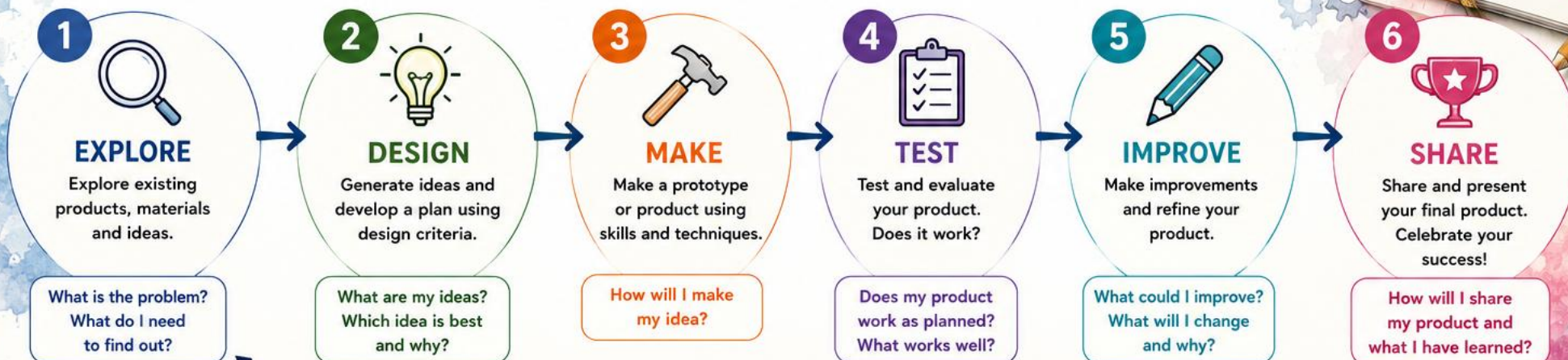
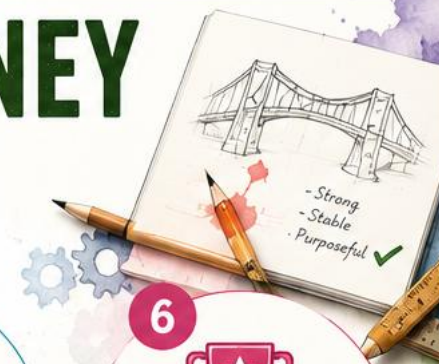
IMPROVE CONFIDENTLY

**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.