Design & Technology Curriculum

Y1			
	Term 1	Term 2	Term 3
Year One	Mechanisms – Sliders and Levers	Cooking & Nutrition - Sandwiches	Textiles - Puppets
NC Obj.	• Explore and use mechanisms (e.g. levers, sliders, wheels and axles) in their products.	• Use the basic principles of a healthy and varied diet to prepare dishes. • Understand where food comes from.	• Design purposeful, functional, appealing products for themselves and others. • Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing). • Explore and evaluate a range of existing products. • Build structures, exploring how they can be made stronger and more stable.
Key Learning / concepts / People	• Purposeful design: products are made for someone and for a reason. • Mechanisms: understanding how movement can be created in simple ways. • Making and joining: using a variety of tools and techniques safely. • Evaluation: talking about what went well and what could be better. • Vocabulary and diagrams: beginning to describe and record design ideas.	• Food preparation: understanding how to handle food safely and hygienically. • Nutrition: exploring the concept of a balanced diet and making healthy choices. • Design for purpose: thinking about who a dish is for and what they like. • Food origins: recognising where food comes from (plant or animal). • Evaluation: trying, tasting, and talking about food.	• Designing for a user • Joining and combining materials effectively. • Understanding the properties of materials (fabric). • Simple sewing and shaping techniques. • Purpose, function and appearance in design. • Evaluating success against intended outcomes.
Key Vocabulary	• Slider • Lever • pivot • mechanism • move • direction • push • pull • design • join • evaluate	• ingredients • healthy • sandwich • hygiene • chop • cut • spread • peel • taste • fruit • vegetable	• fabric • puppet • sew • join • needle • thread • glue • cut • decorate • character • design
Lesson Objectives (six lessons per unit)	1. What is a mechanism and how do sliders and levers work? 2. What happens when I push or pull a slider or lever? 3. What could I design that uses a slider or lever? 4. How do I make my moving picture carefully and accurately? 5. How do designers use movement and interaction in their work? 6. What worked well in my design and what would I change next time?	1. What foods do I like and what makes a healthy sandwich? 2. Where does our food come from? 3. What ingredients will I use in my sandwich and who is it for? 4. How do we prepare food safely and make a sandwich carefully? 5. What can we learn from chefs like Nadiya Hussain? **6.** What do I think about my sandwich and what did I learn?	1. What is a puppet and how are they made? 2. What will my puppet be and who is it for? 3. How do I join fabric to make my puppet? 4. How do I make and decorate my puppet? 5. How do artists like Faith Ringgold use fabric to tell stories? 6. What do I think of my puppet and what would I change next time?
End of unit assessment	Can you explain how your moving picture works and what makes it move?	Can you explain what you put in your sandwich, why it's healthy, and how you made it?	Can you explain who your puppet was made for, how you joined the materials, and what you would improve next time?

Design & Technology Curriculum

Y2			
	Term 1	Term 2	Term 3
Year Two	Structures - Fairgrounds	Cooking & Nutrition – Grow and eat your own healthy food	Mechanisms – Wheels & Axles
NC Obj.	• Build structures, exploring how they can be made stronger, stiffer and stable. • Design purposeful, functional, appealing products based on design criteria. • Select from and use a wide range of materials and components, including construction materials. • Evaluate own ideas and products against criteria.	• Use the basic principles of a healthy and varied diet to prepare dishes. • Understand where food comes from.	• Explore and use mechanisms (e.g. wheels and axles) in their products. • Design purposeful, functional, appealing products for themselves and other users. • Select from and use a wide range of materials and components. • Evaluate their ideas and products against design criteria.
Key Learning / concepts / People	• Structural strength and stability. • Designing with a purpose. • Choosing and using appropriate materials. • Problem-solving and testing. • Evaluating against original design ideas.	• Understanding food origins: identifying which foods grow and where. • Healthy eating: recognising the parts of a healthy diet. • Food preparation: washing, chopping, combining and presenting ingredients. • Sustainability: learning that food can be grown locally. • Evaluation and reflection: developing language to describe taste and choice.	• Mechanisms: understanding how wheels and axles work. • Function and purpose: designing with user needs in mind. • Problem solving: testing and adjusting designs. • Construction skills: joining, shaping, cutting materials accurately. • Evaluation: reflecting on what worked and what didn't.
Key Vocabulary	• Structure • Stable • Strong • Base • Join • Build • Test • Fairground • Ride • Tower	• Grow • Harvest • Healthy • Fruit, Vegetable • Chop • Mix • Wash • Peel • Garden • Seed • Local	• Wheel • Axle • Mechanism • Rotate • Chassis • Fix • Design • Test • Vehicle • Join
Lesson Objectives (six lessons per unit)	1. What is a structure and how do we make it strong and stable? 2. What are fairgrounds and what rides do they have? 3. What materials will I need to build a fairground ride model? 4. How will I design and build my own ride for a mini fairground? 5. What can we learn from designers like Isambard Kingdom Brunel? 6. How did my ride turn out and what would I improve next time?	1. Where does our food come from and how does it grow? 2. What makes a healthy meal or snack? 3. What ingredients will I use in my healthy dish? 4. How do I safely prepare and combine ingredients? 5. How can growing food help us and others? (Ron Finley focus) 6. How did I make my dish, and how would I improve it?	1. What is a wheel and axle, and how do they work together? 2. What do vehicles look like and how are they used? 3. What materials do I need to make a wheeled model? 4. How do I make my moving vehicle? 5. Who was Bertha Benz and how did she help change transport? 6. What worked well in my design, and what would I change next time?
End of unit assessment	Can you explain how you made your ride strong and stable, and what you'd do differently next time?	Can you explain how your food was healthy, where the ingredients came from, and how you made it?	Can you explain how you used wheels and axles in your vehicle, and what you'd do differently next time?

Design & Technology Curriculum

Y3			
	Term 1	Term 2	Term 3
Year Three	Textiles – Felt Cap	Structures – Build a House with Natural Materials	Cooking & Nutrition – Bread
NC Obj.	• Select from and use a wider range of tools and equipment to perform practical tasks (cutting, shaping, joining and finishing). • Select from and use a wider range of materials and components, including textiles. • Generate, develop, model and communicate ideas through discussion, annotated sketches, prototypes and pattern pieces. • Evaluate their ideas and products against their own design criteria.	• Apply understanding of how to strengthen, stiffen and reinforce more complex structures. • Generate, develop and communicate ideas through discussion, annotated sketches, and mock-ups. • Select from and use a wider range of tools and equipment to perform practical tasks accurately. • Evaluate their ideas and products against their own design criteria and consider the views of others.	• Understand and apply the principles of a healthy and varied diet. • Prepare and cook a variety of predominantly savoury dishes using a range of techniques. • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
Key Learning / concepts / People	• Textile construction: using joining, shaping, and finishing techniques • Accuracy and quality: cutting and shaping materials with increasing precision • Design for function and purpose: understanding the product's user and role • Historical and cultural links in design • Evaluation and improvement mindset	• Structures and stability: how to make buildings stand securely • Strengthening and reinforcing: improving weak joins and materials • Selecting appropriate materials: choosing for strength, flexibility, and suitability • Problem solving and evaluation: making adjustments when building	• Food preparation and hygiene • Bread-making techniques (mixing, kneading, shaping, baking) • Design for purpose and taste • Food origins and seasonality • Evaluation of taste, texture and appearance
Key Vocabulary	• Textile, Fabric • Felt • Seam • Stitch • Pattern • Template • Shape • Join • Fasten • Durable • Decorate	• Structure • Frame • Stability • Reinforce • Natural • Material • Join • Test • Base • Upright • Strength	• Ingredients • dough • knead • prove • yeast • mix • bake • grain • flour • risen • evaluate
Lesson Objectives (six lessons per unit)	1. What do we wear on our heads and why? 2. How can we join fabric to make a cap? 3. How will I design my felt cap? 4. How do I make my felt cap? 5. How do designers like Stephen Jones turn hats into works of art? 6. How well did my cap turn out and how could I improve it?	1. What are houses from the Stone and Iron Age like? 2. How can we make a stable frame? 3. How will I design my natural material house? 4. How do I build my Stone Age house using natural materials? 5. How does Francis Kéré design sustainable buildings using local materials? 6. What worked well in my structure and what would I improve?	1. Where does bread come from and how is it made? 2. What ingredients do we need to make bread? 3. How do we mix, knead and shape bread dough? 4. How do we bake and finish our bread? 5. How do expert bakers like Paul Hollywood make great bread? 6. How did my bread turn out and what did I learn?
End of unit assessment	How well did my cap turn out and how could I improve it?	What worked well in my design and how could I improve it?	What is the process for making bread and how might you improve

Design & Technology Curriculum

Y4			
	Term 1	Term 2	Term 3
Year Four	Cooking – Adapting a Recipe (Roman Honey Biscuits)	Electrical Systems – Torches	Structures – Viking Longboats
NC Obj.	• Understand and apply the principles of a healthy and varied diet. • Prepare and cook a variety of predominantly savoury and sweet dishes using a range of techniques. • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	• Understand and use electrical systems in their products (e.g. series circuits inc. switches, bulbs, buzzers, motors). • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. • Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes, and pattern pieces. • Evaluate ideas and products against own design criteria.	• Apply understanding of how to strengthen, stiffen and reinforce more complex structures. • Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes, pattern pieces and computer-aided design. • Select from and use a wider range of materials and components. • Evaluate their ideas and products against their own design criteria.
Key Learning / concepts / People	• Adapting recipes to suit taste, dietary needs or resources. • Ingredient knowledge – understanding food origins and properties. • Food preparation techniques – measuring, mixing, combining, baking. • Evaluating taste, texture, appearance • Historical food links – comparing modern and ancient recipes.	• Simple electrical circuits and components. • Design for function and purpose. • Construction techniques for strength and stability. • Problem solving and testing. • Evaluating working products.	• Structural strength and stability. • Designing for purpose and user • Joining and reinforcing materials. • Problem-solving and adapting designs. • Historical and functional understanding of product design.
Key Vocabulary	• recipe • adapt • ingredients • measure • mix • bake • ancient • modern • texture • flavour • evaluate	• circuit • bulb • battery • wire • switch • conductor • insulator • join • structure • test • evaluate	• structure • hull • mast • sail • keel • stability • strengthen • reinforce • waterproof • float • evaluate
Lesson Objectives (six lessons per unit)	1. What did people eat in Ancient Rome? 2. What ingredients do we need for Roman honey biscuits? 3. How do we follow the recipe and bake the biscuits? 4. How could I adapt the recipe to make it my own? 5. How have people adapted recipes throughout history? (Apicius Focus) 6. What did I learn about adapting recipes and Roman cooking?	1. What is a torch and how does it work? 2. How do simple electrical circuits make a torch work? 3. How will I design a torch that is strong and works well? 4. How do I make and test my torch? 5. How can young inventors like Ann Makosinski improve everyday products? 6. How well does my torch work and how could I improve it?	1. What made Viking longboats strong and fast? 2. How can I make a strong, stable structure for my longboat? 3. How will I design my Viking longboat? 4. How do I build and test my Viking longboat? 5. How did Viking shipbuilders solve problems when designing longboats? 6. How well does my longboat float and look like a Viking ship?
End of unit assessment	What was the process for making Roman biscuits and how could I improve mine?	How well does my torch work and how could I improve it?	What properties did Viking longboats have that made them so effective?

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Y5			
	Term 1	Term 2	Term 3
Year Five	Levers, Pulleys & Gears – Drawbridge	Structure – Earthquake Resistant Building	Cooking - Pasta
NC Obj.	• Understand and use mechanical systems in their products (e.g. gears, pulleys, cams, levers) • Generate, develop, model, and communicate their ideas through discussion, sketches, prototypes, pattern pieces, and CAD. • Apply understanding of how to strengthen, stiffen, and reinforce structures. • Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities.	• Apply understanding of how to strengthen, stiffen and reinforce structures. • Generate, develop, model, and communicate ideas through discussion, annotated sketches, prototypes, pattern pieces, and CAD • Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities. • Evaluate their ideas and products against their own design criteria.	• Understand and apply the principles of a healthy and varied diet. • Prepare and cook a variety of predominantly savoury dishes using a range of techniques. • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught, and processed.
Key Learning / concepts / People	• Mechanical systems: how levers, pulleys, and gears transfer force and movement • Structures and stability: strengthening and reinforcing to ensure working mechanisms • Design for purpose: user, strength, and aesthetics • Problem-solving: testing, refining, and improving. • Evaluating: does the product meet the criteria?	• Structural strength and stability • Design for real-world purpose (surviving environmental challenges) • Material selection based on properties • Problem-solving and iterative design • Evaluating success through testing	• Food preparation and hygiene • Making fresh pasta from scratch • Understanding food origins and traditions • Adapting recipes and making choices for health and taste • Evaluating taste, texture, and appearance
Key Vocabulary	• lever • pulley • gear • mechanism • transfer • force • strength • stability • join • structure • evaluate	• structure • stability • strength • flexible • earthquake • resistant • foundation • join • reinforce • test • evaluate	• pasta • dough • knead • roll • shape • cook • ingredients • hygiene • fresh • evaluate • adapt
Lesson Objectives (six lessons per unit)	1. How do levers, pulleys and gears help us lift and move things? 2. How can I use pulleys and levers to lift a drawbridge? 3. How will I design my drawbridge with working mechanisms? 4. How do I build and test my drawbridge? 5. How did inventors like Leonardo da Vinci design machines to solve problems? 6. How well does my drawbridge work and what would I improve?	1. What makes buildings strong and stable? 2. How do earthquakes affect buildings? 3. How will I design a building to resist earthquakes? 4. How do I build and test my earthquake-resistant structure? 5. How do architects like Shigeru Ban design for strength and safety? 6. How well did my structure resist the earthquake and what would I improve?	• Where does pasta come from and how is it made? • What ingredients and equipment do we need to make pasta? • How do we make and shape fresh pasta? • How do we cook and serve our pasta? • How do chefs like Gennaro Contaldo keep traditional pasta-making alive? • What did I learn about making pasta, and what would I do differently?
End of unit assessment	How does my drawbridge work using levers, gears and pulleys?	What are the most important elements in earthquake resistant buildings?	What are the ingredients and steps involved in making pasta?

Design & Technology Curriculum

Y6			
	Term 1	Term 2	Term 3
Year Six	Design & Make a Vehicle to Transport a Load with Sphero	Cooking – Adapt a Recipe (WW2 Link)	Textiles – Upcycling Old Clothes
NC Obj.	• Apply understanding of how to strengthen, stiffen, and reinforce more complex structures. • Understand and use mechanical systems in their products (e.g. gears, pulleys, cams, levers, linkages). • Understand and use electrical systems in their products. • Apply computing to program, monitor, and control products.	• Understand and apply the principles of a healthy and varied diet. • Prepare and cook a variety of predominantly savoury dishes using a range of techniques. • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught, and processed.	• Select from and use a wider range of tools and equipment to perform practical tasks (cutting, shaping, joining and finishing) accurately. • Select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities. • Apply understanding of how to strengthen, stiffen and reinforce textiles. • Evaluate their ideas and products against criteria.
Key Learning / concepts / People	• Structural strength and stability • Designing with a clear purpose (transporting a load) • Understanding simple mechanisms and control systems • Combining design, construction, and programming • Problem-solving and iterative improvement	• Cooking and food preparation techniques • Adapting recipes based on availability of ingredients and taste • Understanding historical and cultural context of food (WW2 rationing) • Nutritional awareness • Evaluating taste, texture, and appearance	• Textile construction and finishing techniques • Upcycling and sustainable design • Creative problem-solving • Function and aesthetic in design • Evaluation for improvement
Key Vocabulary	• structure • chassis • load • axle • motor • control • program • Stability • Reinforce • Test, evaluate	• rationing • ingredients • adapt • nutrition • measure • seasonality • grow • process • taste • evaluate	• upcycling • textile, fabric • stitch • reinforce • join • decorate • sustainability • waste • reuse • evaluate
Lesson Objectives (six lessons per unit)	1. What makes a vehicle strong, stable, and able to carry a load? 2. How can we use a Sphero to power and control vehicles? 3. How will I design a vehicle to transport a load using a Sphero motor? 4. How do I build and test my Sphero-powered vehicle? 5. How do innovators like Mary Barra improve vehicle design? 6. How well does my vehicle transport a load using the Sphero motor?	1. What was food like during World War Two? 2. How can I adapt a WW2 recipe using ingredients available today? 3. How do I safely prepare my adapted recipe? 4. How do I cook, serve, and taste my dish? 5. How did Marguerite Patten help people cook with rations? 6. How well did I adapt my recipe and what would I change?	1. What is upcycling and how can it help the planet? 2. What techniques can we use to adapt and improve old clothes? 3. How will I design my upcycled product? 4. How do I make and strengthen my upcycled product? 5. How do designers like Stella McCartney create sustainable fashion? 6. How successful is my upcycled product and how would I improve it?
End of unit assessment	What were the key elements to ensure your vehicle could carry a load securely?	What were the restrictions on recipes during WW2 and how well did you adapt your recipe for today?	How successful is my upcycled product and how would I improve it?