

Design Technology Handbook



DESIGN TECHNOLOGY at Tranmere Park Primary School



Intent – What is the purpose of our Design Technology curriculum?

At Tranmere Park Primary, we recognise that Design Technology is an integral part of everyday life and can enable learners to achieve a greater understanding of the world around them. We aim to embed key life skills such as: cooking and making alongside developing design skills, learning about electronics, computing, engineering, robotics, materials, food and textile technology.

It is a challenging, rigorous and practical subject that encourages children to think creatively to solve problems in various contexts both as individuals and as members of a team. We deliver a range of innovative and practical activities that encourage our pupils to express creativity and imagination to design and make products that solve real and relevant problems in aesthetically pleasing ways. These problems are presented through specific design-criteria that evoke the need for our pupils to consider both their own as well as others' needs, wants and values. Opportunities to evaluate and reflect upon both their own work and that of the wider design technology community are also given to encourage and develop their critical thinking, resilience and bank of innovative ideas.

From EYFS to Year 6, we aim to take our pupils on a progressive journey, which will see them, overtime, acquire and develop a range of subject-specific skills that they will take into our three phased approach to the teaching of DT: designing, making and evaluating. We understand that this progressive and sequential approach is paramount to enable our pupils to build upon their skills at each key stage, seeing them leave us in Year 6 as confident, coherent pupils who possess a passion for DT and an enterprising mindset. As it is taught through topic, we try to, wherever suitable, link our Design Technology content to other subject areas such as Art, Science, History, Geography and Maths to ensure we encompass a holistic approach to its teaching.

Our Children will:

- Be intrinsically motivated – they are eager to build on their existing skills and understanding.
- Be willing to practise skills across a range of different activities and situations: alone and in small groups to meet desired design outcomes.
- Ask inquisitive questions, pose ideas and eagerly tackle tricky problems throughout the designing, making and evaluating process.
- Be resilient to mistakes and persevere when faced with a challenge; they are unflinching when tackling problems faced in any step of their projects.
- Achieve standards in DT that surpass the national expectations at each key developmental phase.
- Possess highly positive attitudes towards Design Technology and will be aspirational in their personal goals.

Our Teachers will:

- Provide a progressive and challenging curriculum which is sequenced to enable all children to develop the competence to excel within each area of design technology.
- Provide our children with a rich curriculum of carefully crafted lessons that ensures time for designing, making and evaluating.
- Provide opportunities for our children to develop ideas, test theories, think logically and structure their work systematically.
- Encourage our children to employ imagination and creativity in all stages of their projects.
- Ensure an equal variety of the design technology strands are taught – technical, textiles and cooking/nutrition.
- Encourage and promote opportunities for children to take their design technology skills into real life situations and contexts beyond the classroom.
- Create a safe and open environment where children feel confident to experiment, make mistakes and revise designs.

Implementation – How do we do it?

The Learning Journey

Through a variety of innovative and practical activities, we teach the subject-specific knowledge, understanding and skills required for pupils to engage in the process of designing, making and evaluating. Our pupils design and make products that consider purpose, function, suitability and appeal in relation to a variety of contexts. This process is enhanced by the teaching of design technology within topic, as it allows our pupils to place their learning into real life situations allowing for stronger and deeper connections with their objectives. One such example of this is during our year 5/6 Mayans topic, real temples will be studied before the design technology project begins.

When undertaking the design, make and evaluate model, our children are taught to:

Design:

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams, prototypes, pattern pieces and computer-aided design. Furthermore, they collect and use various sources of information to assist them in communicating ideas, costing products and thinking about sustainability and innovation.

Make:

- Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing, as well as chopping and slicing) accurately. In doing so, they work from their own detailed plans, checking their product as it develops and then undertake any necessary modifications.
- Select from and use a wider range of materials, ingredients and components, including construction materials, textiles and ingredients, according to their functional properties, aesthetic qualities and, where appropriate, taste.

Evaluate:

- Investigate and analyse a range of existing products with specific focus on suitability.
- Evaluate their ideas and products (clearly stating what went well and what could be improved) against their own design criteria and consider the views of others to improve their work.
- Understand how key events in design and technology have helped shape the world.

Technical knowledge:

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products.
- Understand and use electrical systems in their products.
- Apply their understanding of computing to program, monitor and control their products.

Assessment

- Short-term assessments aim to assess the children's learning informally on a lesson-by-lesson basis and are key to our curriculum. Assessment will primarily involve the observation and recording of achievement in both theoretical and practical contexts which will inform the teacher assessment at the end of a unit of work. It will be continuous and part of the normal process of teaching. These could include observations – individually, in groups or whole class. The criteria for assessment will be related to the objective of the lesson which will relate to the National Curriculum requirements.
- Medium-term assessments are completed at the end of a half-term. After each unit, staff will assess children's attainment in the key areas studied, using the Tranmere Park Foundation Stage Assessment documents.
- Long-term assessments assess our children against national expectations. These are also used to provide extra information about individual children's attainment and progress so that the teacher can report to the next teacher and the child's parent. These are entered OTrack at the end of each academic year and then analysed by the subject leader.

Impact – What knowledge and skills are obtained?

At Tranmere Park, every pupil will:

- Be given equal opportunities to fulfil their potential – within Design Technology – regardless of ethnicity, culture, class, gender or special educational needs.
- Complete each key stage with a high proficiency in each aspect of Design Technology.
- Believe that they are good at Design Technology and will have the resilience required to take part in all elements of the Design Technology curriculum.
- Be exposed to meaningful, high-quality experiences and lessons that promote choice and independent thinking thus creating naturally motivated designers and problem solvers.
- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- Learn to take risks to become resilient, resourceful, enterprising and capable individuals.
- Build and apply a repertoire of knowledge, understanding and skills to design and make high-quality prototypes and products for a wide range of users and critique, evaluate and test their ideas and products and the work of others.
- Understand and apply the principles of nutrition and learn how to cook. Children will design and make a range of

Design Technology @ Tranmere Park

At Tranmere Park, we believe every subject area is vital, therefore undertake no narrowing of the curriculum to ensure all pupils are provided with a broad and balanced educational program throughout their journey from EYFS to Y6. As our children at this school are able to master the basic skills early, we are able to not only provide such an enriched curriculum, but furthermore, deliver a program that is ambitious. We strongly believe our children should find their talents, in order to leave us significantly advantaged before

progressing with their learning journey into secondary school. To contribute towards this, the Design Technology curriculum created and implemented within Tranmere Park, both meets and surpasses the EYFS Framework and National Curriculum's expectations from Early Years to Key Stage 2. We give context to all of our learning and inspire future prospects within our children, by requiring them to undertake projects that involve real life problems and issues that they must apply their knowledge to. We prioritise cooking and nutrition from EYFS to KS2 and ensure ages undertake textile-specific units. Challenge days are also provided to extend and further inspire those who are gifted and talented within the subject area.

Cross-Curricular Links

Through the Design Technology curriculum, pupils will make links to: Reading, English, Science, Maths, Geography and History.

How We Surpass Curricular Expectations

1. All projects are related to real-life contexts and problems that require pupils to apply their knowledge and skills to relevant and real issues.
2. Further to the above, as a school, we have prioritised Cooking and Nutrition and each phase (including KS1 and EYFS) undertake a cookery unit annually focussing on carefully chosen and progressive declarative and procedural knowledge (frying, boiling, simmering, beating, separating and even budgeting).
3. Finally, the national curriculum's 'technical knowledge' does not include textiles. We weave, pin, tack, stitch, cut and decorate (applique and stitching).

Parental Involvement

Parents will be informed at the beginning of each half-term through knowledge organisers and homework grids about the coverage of Design Technology within the curriculum. We emphasise the need for parents to take an active role in their child's education, supporting the developing designer and encouraging open lines of communication with teachers.

Design Technology Units

KS1:

T-Shirts within Topic (All Dressed Up)

Free-standing buildings within Topic (Buildings)
Cars within Topic (From A to B)
Moving picture books within English (Fairy Tales)
Healthy pizza toppings within Topic (We Are What We Eat)
Healthy interval snacks within Topic (The Circus)

LKS2:

Juggling balls within Topic (Local History)
Kites within Topic (The Planet)
Torches within Science (It's Electric)
Mechanical Posters within Topic (The Greeks)
Bread within Topic (The Rainforest)
Pasta Bake within Science (Animals Including Humans)

UKS2:

Phone cases within Topic (Express Yourself)
Temples within Topic (The Mayans)
Automata animals within Science (Living Things and Habitats)
Viking longboats within Topic (The Vikings)
Spaghetti Bolognese within Topic (Fit for Life)
Dessert tarts within Topic (WW2)

Guidelines for Teaching Design Technology

Children will have many opportunities for Design Technology in school, through both explicit Design Technology lessons and Topic and Science. Specific skills will be taught in a blocked unit of work will enable pupils to properly undertake the process of Design Technology underpinned by an understanding of the disciplinary knowledge of the subject. Throughout each Key Stage, pupils will therefore complete vertically progressive projects that encompass the design, make and evaluate stages of Design Technology.

The expectations and knowledge for teaching Design Technology have been carefully planned into knowledge progression documents. The powerful knowledge and key skills that we expect pupils to acquire has been identified within such documents through an interconnected thread, that gives pupils the time to consolidate ideas, practise previous and new skills or tinker with projects, in order to commit their learning into their long-term memory. Further to this, whenever a project is undertaken, pupils will do so within the

following templates to piece together their learning within each stage:



1/2 DESIGN AND TECHNOLOGY at Tranmere Park



<p>Design 1</p> <p>Purpose: _____</p>	<p>Make 2</p>
'Post-make phase' Evaluation 3	
<ol style="list-style-type: none"> 1. Does your product fit its purpose? Yes / No 2. Did the design-stage go well? Yes / No 3. Did making your product go well? Yes / No 4. Were the materials you used to make your product good? Yes / No 5. Does your product look good? Yes / No 6. How could you change your product to improve it? <p>_____</p> <p>_____</p> <p>_____</p>	



3/4 DESIGN AND TECHNOLOGY at Tranmere Park



<p>Design 1</p> <p>Purpose: _____</p>	<p>Make 3</p>
'Post-make phase' Evaluation 4	
<ol style="list-style-type: none"> 1. Does your product fit its purpose? Yes / No Why? _____ 2. Can you describe each step that you took? Yes / No Why? _____ 3. Did you modify your product based on the post-design evaluation? Yes/No Why? _____ 4. Did making your product go well? Yes / No Why? _____ 5. Were the materials that you used to create your product appropriate? Yes / No Why? _____ 6. Does your product look good? Yes / No Why? _____ 7. How could you modify your product to improve it? <p>_____</p>	
'Post-design phase' Evaluation 2	
<ol style="list-style-type: none"> 1. Does your product fit its purpose? Yes / No Why? _____ 2. Does it appeal to its target audience? Yes / No Why? _____ 3. Do you think you need to edit your design before creating the product? Yes/No Why? _____ 	



Design 1

Purpose: _____

Make 3

'Post-design phase' Evaluation				
Question	Self (1-10)	Peer (1-10)	Consumer (1-10)	Comment
Does the product fit its purpose?				S: _____ P: _____ C: _____
Is it suitable for the consumer to use?				S: _____ P: _____ C: _____
Are the materials used appropriate? (Strong, Sturdy, Durable)				S: _____ P: _____ C: _____
Is the product aesthetically pleasing? Why/Why not?				S: _____ P: _____ C: _____
Will this product be successful? Should we be editing the design? How?				S: _____ P: _____ C: _____

'Post-make phase' Evaluation				
Question	Self (1-10)	Peer (1-10)	Consumer (1-10)	Comment
Can you/they describe the building process and justify their choices?				S: _____ P: _____ C: _____
Is it suitable for the consumer to use? Is it strong and stable? Is it careful and neat?				S: _____ P: _____ C: _____
Are the materials used appropriate? (Strong, Sturdy, Durable)				S: _____ P: _____ C: _____
Is the product aesthetically pleasing?				S: _____ P: _____ C: _____
How did you/they respond to feedback from the design phase?				S: _____ P: _____ C: _____

Design Technology Resources

EYFS: Resources for EYFS projects can be found within the Early Years unit.

KS1: Resources for KS1 projects can be found within the KS1 shared area.

Basics such as scissors and glue sticks are provided within each classroom.

LKS2 and UKS2: Resources for all KS2 projects can be found within the KS2 shared area. Basics such as scissors and glue sticks are provided within each classroom.

Cooking: Resources for all cooking and nutrition units can be found within the school's cooking area.

Design Technology Progressions Y1 – 6

		<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <h3>Powerful Knowledge</h3> <p>Year 1/2 Design and Technology</p> </div> </div>				
		Designing	Making	Evaluating	Technical Knowledge	Cooking and Nutrition
K e y k n o w l e d g e - w h a t d o w e w a n t o u r c h i	<p>POWERFUL KNOWLEDGE: Our pupils will:</p> <p>DT1 - Use their imaginations to design a purposeful product (car, moving picture book, tower and t-shirt) whilst planning each step of the production process.</p> <p>DT2 - Describe how their own idea will work and can explain why they have chosen specific textiles/materials and develop their ideas through: talk, drawings, observations, modelling and labelled parts whilst creating plans.</p> <p>DT3 - Make templates and mock ups of their ideas whilst designing a product (car and picture book) that moves.</p> <p>DT4 - Explain how their design solves a problem or fits a purpose.</p> <p>HOW DOES THIS LOOK AT TRANIMERE? Cycle 1 Spring 1: From A to B (Topic) -Design a purposeful, functional and appealing car that will transport a small-world/Lego.</p> <ol style="list-style-type: none"> 1) 'Maggie' ideas for a moving car based on examples. 2) Explore mechanisms (axles and wheels and joints) 3) Generate, develop, model and communicate their plans through sharing ideas, labelled sketches and mock-ups of their moving car. 4) Discuss how their finished car will work, why specific materials are going to be chosen and how their design fits its purpose. <p>Cycle 1: (English-Fairy Tales) *Twinkl Unit* - Design a purposeful, functional and appealing moving picture book based on a traditional English tale for a younger child:</p> <ol style="list-style-type: none"> 1) Evaluate and magpie ideas from a range of existing moving picture books. 2) Explore using mechanisms (sliders and pivots) 3) Generate, develop, model and communicate their plans through sharing ideas, annotated sketches and mock-ups of their moving picture book. 4) Discuss how their ideas and finished picture book will work, why specific materials are going to be chosen and how their design fits its purpose. <p>Cycle 2 Spring 2: Buildings (Topic) -Design a functional tower that will stand up on its own.</p> <ol style="list-style-type: none"> 1) 'Maggie' ideas for a house based on examples shown by teacher. 2) Explore strengthening techniques (the strength of triangles, wider base, buttress, layering, twisting, rolling, folding and so it will free-stand. 3) Generate, develop, model and communicate their plans through sharing ideas, thoughts, labelled sketches and mock-ups of their tower. 4) Discuss how their ideas and finished tower will work, why specific materials are going to be chosen and how their design fits its purpose. <p>Cycle 2 Autumn 2: All Dressed Up (Topic) -Design a purposeful, functional and appealing decorative t-shirt.</p> <ol style="list-style-type: none"> 1) Evaluate and magpie ideas from a range of existing products (both decorative t-shirts and fabrics pieces). 2) Explore and evaluate a range of different joining techniques (gluing, (running) stitching, stapling and safety pinning) 3) Generate, develop, model and communicate their plans through sharing ideas, thoughts, labelled sketches of their t-shirt design. 3) Discuss why specific materials / designs have been chosen to fit its purpose 	<p>POWERFUL KNOWLEDGE: Our Pupils will:</p> <p>DT5 - Create a moving product (car and picture book) and choose appropriate resources and tools to make it (paper, card, wheels and axels, glue, scissors, ruler, split-pins, lollipop sticks, fabrics, felt, ruler, buttons, beads, sequins, braids, ribbons, paints, thread, needles, tape, safety pins, scissors, and staplers).</p> <p>DT6 - Master more than one joining technique. (e.g. Gluing – PVA, taping, safety pinning, simple flaps, stapling, running stitch and tabs)</p> <p>DT7 - Measure (in cm) materials and use them in a model, structure or textile piece.</p> <p>DT8 - Build structures (car and tower), exploring how they can be made stronger, stiffer and more stable whilst choosing appropriate finishing techniques (decoration and colours) – their books and t-shirts.</p> <p>DT9 - With help, cut and score paper, card and fabrics with accuracy.</p> <p>HOW DOES THIS LOOK AT TRANIMERE? Cycle 1 Spring 1: From A to B (Topic) 1) Choose appropriate resources and tools (paper, card, wheels and axels, glue, scissors, ruler) based on rationale from the design stages, to make their car.</p> <ol style="list-style-type: none"> 2) Measure (in cm) the card /paper pieces needed to make their car's body. 3) With help, cut and score (with accuracy) their card/paper templates to make their car's body. 4) Use joining techniques (e.g. Gluing – PVA, taping, simple flaps and tabs) to create the body of their car. 5) Use wheels and axels (mechanisms) to make their car move. 6) Whilst building, explore how it can be made stronger, stiffer and more stable by experimenting with structure shape. <p>Cycle 1: (English-Fairy Tales)*Twinkl Unit* 1) Choose appropriate resources and tools (paper, card, split pins, lollipop stick, glue and scissors) based on rationale from the design stages, to make their book.</p> <ol style="list-style-type: none"> 2) Measure (cm) the card / paper pieces needed 3) With help, cut and score (with accuracy) their card/paper templates 4) Use joining techniques (e.g. Gluing – PVA, taping, simple flaps and tabs) to attach pictures /picture parts 5) Use sliders and pivots (mechanisms) to make their pictures move. 6) Choose appropriate finishing techniques (these can be decorative decisions using all resources available to them) to ensure the final book fits their criteria of being appealing for their audience <p>Cycle 2 Spring 2: Buildings (Topic) 1) Choose appropriate resources (cocktail sticks, spaghetti, midget gems, marshmallows and art straws), based on rationale from the design stages, to make their tower.</p> <ol style="list-style-type: none"> 2) Use joining techniques (e.g. Gluing – PVA, taping, simple flaps and tabs) to create the 3D structure 3) Whilst building their tower, explore how it can be made stronger, stiffer and more stable to be able to free-stand, through experimenting with structure shape - adapting designs where necessary as a result. 4) Apply their new-found strengthening knowledge by testing their structure shape on more fragile resources (spaghetti, marshmallows and art straws). <p>Cycle 2 Autumn 2: All Dressed Up (Topic) 1) Choose appropriate resources and tools (fabrics, felt, ruler, buttons, beads, sequins, braids, ribbons, paints, thread, needles, tape, glue, safety pins, scissors, and staplers) based on rationale.</p> <ol style="list-style-type: none"> 2) Use a technique or range of techniques to enhance their t-shirt base (painting, printing, weaving, colling and fringing) 3) Measure (cm) any material/fabric pieces. 4) With help, cut any pieces of fabrics needed. 5) Use joining techniques (taping, gluing, safety pinning, stapling, (running) stitching) to attach decorative pieces (buttons, beads, sequins, braids and ribbons) to their t-shirt. 6) Choose appropriate finishing techniques (see point 5) to ensure the final t-shirt fits their criteria. 	<p>POWERFUL KNOWLEDGE: Our pupils will:</p> <p>DT10 - Describe how their products (car, moving picture book and tower) work and explain what went well and not so well with their products (car, moving picture book, tower and t-shirt) and modify any of these if necessary.</p> <p>DT11 - Evaluate their own product (car, moving picture book, tower and t-shirt) against a simple scale (yes or no) and against existing products.</p> <p>HOW DOES THIS LOOK AT TRANIMERE? Cycle 1 Spring 1: From A to B (Topic) -Present their finished car, describing how it works and evaluate their car using a simple scale (yes or no) around the questions below:</p> <ol style="list-style-type: none"> 1) If their car meets its purpose (transporting a Lego character) 2) What went well and what didn't go so well (strengths and weaknesses) 3) Describe how their car could be modified to either, more appropriately fit its purpose or, just generally be improved based on self-evaluation. 4) If necessary, modify their toy car based on the above. <p>Cycle 1: (English-Fairy Tales) *Twinkl Unit* -Present their finished car, describing how it works and evaluate their picture book using a simple scale (yes or no), deciding upon the following:</p> <ol style="list-style-type: none"> 1) If their book meets its purpose. 2) What went well and what didn't go so well (strengths and weaknesses). 3) How does their book compare to the existing products 4) Describe how their book could be modified 5) If necessary, modify their book based on the above. <p>Cycle 2 Spring 2: Buildings (Topic) -Evaluate their tower using a simple scale (yes or no), deciding upon the following:</p> <ol style="list-style-type: none"> 1) If their tower meets its purpose (can free-stand on its own) 2) What went well and what didn't go so well (strengths and weaknesses) 3) Describe how their tower could be modified to either, more appropriately fit its purpose or, just generally be improved based on self-evaluation. 4) If necessary, modify their tower based on the above. <p>Cycle 2 Autumn 2: All Dressed Up (Topic) -Present their finished t-shirt, describing their creation and evaluate their t-shirt using a simple scale (yes or no), deciding upon the following:</p> <ol style="list-style-type: none"> 1) If their t-shirt meets its purpose 2) What went well and what didn't (strengths and weaknesses) 3) Describe how their t-shirt could be modified to either, more appropriately fit its purpose or, just generally be improved based on self-evaluation. 4) If necessary, modify their t-shirt based on the above. 	<p>POWERFUL KNOWLEDGE: Our Pupils will:</p> <p>Technical DT12 - Make their own model (car and moving picture book) stronger and more stable.</p> <p>DT13 - Make a product (moving picture book and car) which has two moving mechanisms (levers, sliders, hinges, wheels and axels)</p> <p>DT14 - Fold, tear and cut paper and card and use a hole punch and insert paper fasteners for card linkages.</p> <p>DT15 - Create simple sliders, levers and hinges and investigate joining techniques – temporary, fixed and moving.</p> <p>Textile: DT16 - Create a template and produce a fabric t-shirt.</p> <p>DT17 - Join fabrics using running stitch (create a seam), glue, staples, over sewing and tape (t-shirts).</p> <p>DT18 - Colour fabrics using a range of techniques (fabric paints, printing, painting) and decorate fabrics with buttons, beads, sequins, braids and ribbons (t-shirts).</p> <p>HOW DOES THIS LOOK AT TRANIMERE? Cycle 1 Spring 1: From A to B (Topic) -Technical skills demonstrated through the following:</p> <ol style="list-style-type: none"> 1) Make their car stronger and more stable, by exploring different materials, to ensure the secure transportation of their Lego-person. 2) Fold and cut paper and card 3) Use joining techniques (e.g. Gluing – PVA, taping, simple flaps and tabs) to fix together their car's body and the body to their wheels and axels. <p>Cycle 1: (English-Fairy Tales) *Twinkl Unit* -Technical skills demonstrated through the following:</p> <ol style="list-style-type: none"> 1) Fold, tear and cut paper and card to create their moving picture book. 2) Create and use sliders in their book. 3) Use joining techniques (e.g. Gluing – PVA, taping, simple flaps and tabs) to fix together their book and its moving pictures. 4) Use hole punches and paper fasteners to attach pictures, levers and/or hinges. <p>Cycle 2 Spring 2 Buildings (Topic) -Technical skills demonstrated through the following:</p> <ol style="list-style-type: none"> 1) Experiment with the most stable resources and structure shape, adapting designs as the structures are built to make their tower stronger to free-stand on its own. 2) Use joining techniques (e.g. Gluing – PVA, taping, simple flaps and tabs) to attach their tower structure together. <p>Cycle 2 Autumn 2: All Dressed Up (Topic) -Textile skills demonstrated through the following:</p> <ol style="list-style-type: none"> 1) Colour their t-shirts using paints and printing. 2) Add to / modify their t-shirt through colling, fringing and weaving. 3) Decorate their t-shirts using buttons, beads, sequins, braid and ribbons. 	<p>POWERFUL KNOWLEDGE: Our pupils will:</p> <p>DT19 - Explain why a healthy diet is important and start to sort foods into the five food groups using the Eatwell plate.</p> <p>DT20 - Know to eat at least five portions of fruit and vegetables a day.</p> <p>DT21 - Begin to know the difference between a healthy portion of food and an unhealthy portion of food and apply this in a practical context (pizza toppings)</p> <p>DT22 - Understand where foods come from – both plant and animal based.</p> <p>DT23 - Plan and prepare simple dishes (pizzas, dips and dippers and savoury muffins) safely and hygienically without using a heat source.</p> <p>DT24 - With assistance chop (bridge and claw), grate, peel, snip and tear, spread, scoop, mash, juice, zest, pour, mix, beat and arrange ingredients safely and hygienically.</p> <p>DT25 - With assistance weigh ingredients using balancing scales and measure ingredients using spoons and cups.</p> <p>DT26 - Describe the ingredients used when making a dish.</p> <p>HOW DOES THIS LOOK AT TRANIMERE? Cycle 2 Summer 1: We Are What We Eat (Topic) 1) Understand a balanced diet through discussions around the eat-well plate.</p> <ol style="list-style-type: none"> 2) Discuss the 5 a day rule and brainstorm how this could be achieved in a diet. 3) Write a food diary and create an Eatwell plate of the food's children ate, placing the foods in the correct food group. 4) Focusing on the key practical skills (assisted) – weighing, measuring, chopping (bridge and claw), grating, peeling, scooping, juicing, zesting, pouring and mixing, make a fruit salad as a way of demonstrating an idea of how the above can be achieved. 5) Plan how to make a pizza healthier/balanced. 6) Focusing on the key skills (assisted) – weighing, measuring, chopping (bridge and claw), grating, peeling, snipping and tearing, spreading and arranging, make a healthier pizza. (Children provided with base to change the toppings and adults to cook pizzas) 7) Describe the ingredients used when making their fruit salads and pizzas (senses). Where have these ingredients come from? <p>Cycle 1 Spring 1: The Circus is Coming to Town (Topic) *Twinkl Unit Included* 1) Plan a healthy dips and dippers interval snack to take to the circus.</p> <ol style="list-style-type: none"> 2) Focusing on the key skills (assisted) – weighing, measuring, chopping (bridge and claw), scooping, mashing, juicing, mixing, pouring and beating, make some savoury dips and dippers for a circus interval snack. 4) Describe the ingredients used when making their savoury muffins and dips and dippers (senses). <p>PSHE Y2 Physical Health and Wellbeing unit: What Keeps Me Healthy Pupils will elaborate on the importance of 5 a day and the choices we make to stay healthy.</p> <p>Science Cycle 2: Plants (Y2 Units) Pupils will study which fruit and veg can be grown in a garden and the children grow their own potatoes.</p> <p>Science Cycle 2: Plants (Y2 Units) Pupils will study where both plant-based and animal-based foods come from.</p>	



Powerful Knowledge
Year 3/4 Design and Technology



Key Knowledge – what do we want our children to know before they leave our phase?

Designing	Making	Evaluating	Technical Knowledge	Cooking and Nutrition
<p>POWERFUL KNOWLEDGE: Our pupils will: DT1 - Use research to design a purposeful, functional and appealing product (mechanical information poster, kite, torch and juggling balls) whilst planning a written step-by-step production plan. They will produce a labelled product design with detailed descriptions about choices around materials, components, functions and aesthetics. E.g. labelling why their material is both suitable and appealing. DT2 - Develop, model and communicate their ideas through: annotated sketches, cross-sectional diagrams and prototypes, proving that their designs meet a set criterion DT3 - Draw upon and discuss ideas from the designs of others then persevere whilst refining their designs.</p> <p>HOW DOES THIS LOOK AT TRANSMER? Cycle 2 Spring 1: Active Planet (Topic) *Twinkl Unit Included* -Design a purposeful, functional and appealing mechanical poster to inform children about volcanoes. 1) Research, test and understand existing lever, hinges, sliders, pivots and linkage mechanisms. 2) Generate annotated sketches and prototypes, labelling their designs with detailed descriptions about choices around materials, components, functions, equipment and aesthetics (e.g. demonstrate they can choose a material for both its suitability and appearance when making their mechanical poster). 3) Prove that their mechanical poster fits the set criterion whilst engaging in prototype evaluations (self, peer and against existing products) and refine their ideas accordingly before making. *See evaluation column for more detail*</p> <p>Cycle 1 Spring 2: Gateway to the World (Topic) *Twinkl Unit Included* -Design a purposeful and functional kite to cross a body of water. 1) Research a purposeful and functional kite, exploring and evaluating Homan Walsh and the story of how he used a kite to help build the Niagara Falls Bridge. 2) Investigate and analyse a range of existing kites, exploring: the parts, the functions and the shapes, exploring how their kite could be made stiffer and stronger. 3) Generate annotated sketches (materials, components, functions, suitability) to show their plans for their kite, creating a plan of the making process – outlining an equipment and materials list, and the different stages / steps.</p> <p>Cycle 1 Summer 2: Local History (Topic) *Twinkl Unit Included* -Design functional and appealing juggling balls for Sooty and Sweep. 1) Research and learn about Harry Corbett and Sooty and Sweep's comeback tour discussing that some of his special guests will be doing circus trick (hence juggling balls.) 2) Juggling balls: which colour, shape, size, textiles/materials, decoration. Study Tie-Dye as a decorative technique (dye old white fabric squares or a t-shirt). Then, trial and decide upon juggling ball fillings (dried beans, lentils, rice and sand) 3) Decide upon the best stitch: cross-stitching and running-stitch for creating a seam and hem whilst, generating annotated sketches with detailed descriptions about choices around materials, components, functions and aesthetics (e.g. demonstrate they can choose a material for both its suitability and appearance when making their juggling balls).</p> <p>Cycle 2 Autumn 1: It's Electric (Science) *Twinkl Unit Included* - Design a purposeful and functional torch for personal use. 1) Investigate and analyse how series circuits and how switches can be used to make a bulb light. 2) Investigate different designs of torches (shape/handles) 3) Generate annotated sketches and cross-sectional diagrams to show their plans for their torch along with instructions and equipment needed.</p>	<p>POWERFUL KNOWLEDGE: Our Pupils will: DT4 - Follow a step-by-step plan for their mechanical information poster, kite, torch and juggling balls, choosing the right equipment and materials for each stage. DT5 - Know which tools are most appropriate for a task, select these and show knowledge of how to handle it (e.g. scissors vs hacksaw or pritt-stick glue vs hot glue-gun). Furthermore, know which techniques are most appropriate for a task, use these competently (e.g. choosing to join materials by taping, tying, or gluing) DT6 - Work accurately to measure (cm and mm), mark out, cut, score and make holes in materials needed for their models (with assistance when using hacksaws and hand drills). DT7 - Work accurately to join and assemble components (with assistance when using the hot glue-gun), paying particular attention to finishing techniques used for aesthetics and detail. Furthermore, they apply their previous learning around stiffening and strengthening to build and join strong frame structures and bodies in their kites.</p> <p>HOW DOES THIS LOOK AT TRANSMER? Cycle 2 Spring 1: Active Planet (Topic) *Twinkl Unit Included* 1) Follow their design selecting the right tools (scissors, glue, tape, rulers, pens and pencils) and materials (split pins, lollipop sticks, paper and card). 2) Demonstrate that they know and understand how to handle the tools (e.g. handling and using scissors and split pins correctly) 3) Accurately measure (cm and mm) the card/ paper pieces and independently, mark out, cut and score, with accuracy, their card/paper templates to make their poster. 4) Independently make holes, join and assemble (with accuracy) the levers and linkages for their poster. 5) At each stage, consider aesthetics and detail with a particular focus on their audience and their design.</p> <p>Cycle 1 Spring 2: Gateway to the World (Topic) *Twinkl Unit Included* 1) Follow their design, selecting the right tools (pencils, rulers, scissors, glue, hot glue-gun, stapler, hacksaws, bench hooks and sandpaper) and materials (tape, elastic bands, string, stapler, plastic bags, newspaper, tissue paper, card, dowels, decorative materials), demonstrating that they can handle the tools (e.g. handling and using a hacksaw correctly). 2) Accurately measure (cm and mm) the Kite's body & structure dowels and independently, mark out and score it and with support, use hacksaws and bench hooks to saw their dowel frames to the correct length, sanding if necessary. 3) Join the kite structure and body together using appropriate joining techniques (masking tape, string, elastic bands, holes/slots or plastic tubing), focusing on structure strength.</p> <p>Cycle 1 Summer 2: Local History (Topic) *Twinkl Unit Included* 1) Follow their design selecting the right tools (needle, thread, pins) and materials for each stage. Demonstrating that they know how to handle the tools (e.g. sewing needle and thread) then accurately measure (cm and mm) the felt/fabric. 2) Independently, mark out and cut (with accuracy) their felt/fabric templates and use a running-stitch or cross-stitch to create a hem to join their juggling balls together. 3) Use a range of media and materials (fabrics, fabric pens, paints and brushes, dyes, pipettes/syringing bottles) to decorate their JB's focusing on the aesthetics to ensure their product fits the criterion</p> <p>Cycle 2 Autumn 1: It's Electric (Science) *Twinkl Unit Included* 1) Follow their design, selecting the right tools (scissors, hot glue-gun, rulers, pencils, hacksaws and bench hooks and wire cutters) and materials (bulbs, bulb holders, batteries, wire with crocodile clips, split pins, paper-clips, cardboard, masking tape and plastic bottles) 2) Accurately and independently measure (cm and mm) and mark out the amount of bottle needed for the reflection spout and hole for the switch. Then, with support, use hacksaws to cut the reflection spout and switch hole 3) Create the circuit to create a working electrical system (torch) 4) Use appropriate joining techniques (e.g. Gluing – PVA, supervised glue gun, taping, safety pinning/brass fasteners) to fix the circuit in place.</p>	<p>POWERFUL KNOWLEDGE: Our pupils will: DT8 - Present their products (mechanical information poster, kite, torch and juggling balls), giving a demonstration and description of how their products work. DT9 - In the design stage, engage in self, peer and against existing-product evaluations, using simple scales (yes or no) with extended explanations to give reasons as to why conclusions were made. Explain how to improve their designs and/or prototypes and if necessary, modify. DT10 - Complete finished product evaluations to show an awareness of whether their design brief has been met, knowing how and why their model did or did not meet it. Explain how to improve their finished products and if necessary, modify. DT11 - Research and explain how Homan Walsh used a kite to help build the Niagara Falls Bridge and how kites have been used to influence to design of aeroplanes. DT12 - Research and explain the developments of 'light' throughout history, in particular how Thomas Edison created the light bulb.</p> <p>HOW DOES THIS LOOK AT TRANSMER? Cycle 2 Spring 1: Active Planet (Topic) *Twinkl Unit Included* -Within the design stage and at the post make stage, use a simple scale (yes or no) with extended explanations to evaluate their mechanical poster prototype against existing products, individual-self and peer opinions to judge against the criteria below: Cycle 1 Spring 2: Gateway to the World (Topic) *Twinkl Unit Included* -Learns about the story of Homan Walsh and how he used a kite to help build the Niagara Falls bridge (Canada). Further investigate through self-led research how the design of kites influenced the design of aeroplanes. -Within the design stage and at the post make stage, use a simple scale (yes or no) with extended explanations (why yes or no) to evaluate their kite design against existing products, individual-self and peer opinions to judge against the criteria below: Cycle 1 Summer 2: Local History (Topic) *Twinkl Unit* -Within the design stage and at the post make stage, use a simple scale (yes or no) with extended explanations (why yes or no) to evaluate their juggling ball design against existing products, individual-self and peer opinions to judge against the criteria below: Cycle 2 Autumn 1: It's Electric (Science) *Twinkl Unit Included* -Research the key changes overtime around lighting and lighting a home, particularly focusing on key figures (Thomas Edison). Also, consider the future of lighting. -Within the design stage and at the post make stage, use a simple scale (yes or no) with extended explanations (why yes or no) to evaluate their torch design against existing products, individual-self and peer opinions to judge against the criteria below: Within the design phase considerations: -Has their product been successful? Does it appeal to its audience? Is it fit for purpose? If so, why? If not, why? - Can you explain why your product will or will not be successful, and develop improvements which should be made to specifically target these areas? Look here specifically at the design criteria to recognise where their prototype does or does not fit the bill then modify. Post make phase considerations: - Can you describe your work and the process involved in creating it justifying your choices? - Were the materials used appropriate? Were they functional/aesthetically pleasing? - Can you explain how you developed your finished product based upon feedback from the design phase?</p>	<p>POWERFUL KNOWLEDGE: Our Pupils will: Technical DT13 - Know how to strengthen their kite by stiffening a given part or reinforce a part of the structure. DT14 - Create a prototype of their mechanical information poster. DT15 - Cut slots and internal shapes in their mechanical information posters. Use lolly sticks, card and split pins to make levers and linkages when making their mechanical information posters. Further to this, create neat, functional links and hinges. DT16 - Link scientific knowledge by using lights and switches to make their torch using series and parallel circuits, diagnosing faults when necessary.</p> <p>Textile DT17 - Can use textiles to create simple patterns on their juggling balls (applique: glued or simple stitches), whilst measuring (using cm and mm), mark and cut fabric/felt materials accurately. DT18 - Join fabrics using running-stitch or cross-stitch when making their juggling ball and understand seam allowance and create a hem using a running stitch or cross stitch when joining their juggling balls together.</p> <p>HOW DOES THIS LOOK AT TRANSMER? Cycle 2 Spring 1: Active Planet (Topic) *Twinkl Unit Included* 1) Measure (cm and mm) mark and cut their poster pieces accurately. 2) Use lolly sticks/card and split pins to make levers and linkages. Further to this, create neat, functional links, hinges, sliders and pivots. 3) Create prototypes of their posters.</p> <p>Cycle 1 Spring 2: Gateway to the World (Topic) *Twinkl Unit Included* 1) Know how to strengthen their kite by stiffening a given part or reinforcing. 2) Cut slots and internal shapes to connect the kite structure together. 3) Measure, mark and cut the materials needed to make their kite accurately to 1mm. Cycle 1 Summer 2: Local History (Topic) *Twinkl Unit Included* 1) Measure, mark and cut the materials needed to make their juggling balls accurately to 1mm 2) Use textiles and tie-dye to create patterns (applique- glued or simple stitches). 3) Understand seam allowance and create a hem using a running stitch. 4) Join fabrics using running stitch or cross-stitch, stating why they chose one over the other. Cycle 2 Autumn 1: It's Electric (Science) 1) Link scientific knowledge by using bulbs, wires and home-made switches 2) Use series circuits to create a torch, diagnosing faults when necessary.</p>	<p>POWERFUL KNOWLEDGE: Our pupils will: DT19 - Know the correct proportions for a balanced diet and understand that when we don't eat a balanced meal, knowing the characteristics of a poor diet, this can contribute to an unhealthy lifestyle. DT20 - Know the difference between sweet and savoury foods. DT21 - Know when a food is ready for harvesting (seasonality) and where and how ingredients are grown and captured, explaining how a variety of ingredients are reared and caught. DT22 - Follow a recipe to plan, prepare and make simple dishes (tomato pesto pasta and bread) safely and hygienically, being assisted when using a heat source (oven and hob). DT23 - With supervision, chop (bridge and claw) grate and finely grate, peel, strip and tear, spread, juice, zest, mix, pour, stir, drain, cook (boil), garnish, sieve/str, knead, divide, shape, glaze and bake safely and hygienically. DT24 - With supervision, weigh ingredients (g) using digital and spring balance scales and measure ingredients using spoons, cups and jugs (ml). DT25 - Explain why you might use a cooking technique (microwave vs hob, grater vs peeler).</p> <p>HOW DOES THIS LOOK AT TRANSMER? Cycle 1 Autumn 1: Rainforest, including chocolate (Topic) *Twinkl Unit Included* 1) Research the bread (sweet and savoury) and plan to create a new bread product which contains chocolate (from the rainforest) and other ingredients (e.g., raisins, mixed dried fruit, cinnamon, banana, carrot, chili, apple, honey, orange, lemon, lime, ginger, cheese etc.) 2) Focusing on the key practical skills (supervised) – weighing, measuring, chopping (bridge and claw), grating and finely grating, peeling, spreading, juicing, zesting, mixing, pouring, sieving/sifting, kneading, dividing, shaping and glazing, prepare and make a new bread product. 3) Whilst mixing, choose and justify techniques for adding ingredients (e.g., grating the chocolate to make fine sprinkles to avoid dense chunks.) 4) With assistance, use the oven to bake the bread, focusing on safety procedures and controlling temperature.</p> <p>Cycle 2 Summer 1: What's on the Menu (Topic) *Twinkl Unit Included* 1) Research and present about correct proportions for a balanced diet using the Eatwell plate. 2) Research how ingredients can be used to make both sweet and savoury dishes by investigating eggs. 3) Research into the different types of farming in the UK (arable and pastoral) and discuss the origins of food from the farm to school. 4) Research into locally grown seasonal food (summer) and collectively grow some tomatoes and basil together then use these to plan a balance main meal (pesto and tomato pasta bake) 5) Focusing on the key skills (supervised) measuring, weighing, chopping (bridge and claw), grating and fine grating, peeling, snapping and tearing, stirring, draining and garnishing, prepare and make their dish. 6) With assistance, cook (boil) and bake using the hob and oven, focusing on safety procedures and controlling temperature. 7) Explain why certain techniques were chosen (e.g., grating cheese finely or using an oven to bake the pasta).</p> <p>PSHE (Y3 and 4): Physical Health and Wellbeing Pupils will evaluate unhealthy choices and explore why they are made and the consequences. They will learn about moral reasoning and seasonality (alongside other factors such as religion and health reasons) that influence peoples food choices.</p> <p>Science Cycle 1 Summer 2: Animals Including Humans, Keeping Healthy (Y3) Pupils will develop their understanding of the nutritional properties of the 5 food groups and plan balanced diets based on statistical analysis.</p>

Powerful Knowledge Year 5/6 Design and Technology					
	Designing	Making	Evaluating	Technical Knowledge	Cooking and Nutrition
Key Knowledge – what do we want our children to know before they leave our phase?	<p>POWERFUL KNOWLEDGE: DT1 - Use market research to inform the design of purposeful, functional and appealing products (automata animal, phone case and temple). DT2 - Label their product designs, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design, with detail, demonstrating that culture and society are considered in plans and designs. Then, follow and refine their plans. DT3 - Prove and explain how their product will meet their set criterion.</p> <p>HOW DOES THIS LOOK AT TRANSMERE? Cycle 1 Autumn 1 and 2: Anglo-Saxons and Vikings (Topic) -Use consumer research to design a moving Viking longboat toy. 1) Carry out market research on the consumer (young child) 2) Investigate and analyse how pulley systems and motors can be used to make a product move. 3) Generate detailed annotated sketches and cross-sectional diagrams. 4) Prove their design fits the set criterion- engage in design stage evaluations (self and peer) and refine ideas accordingly *See evaluation column for more detail* 5) Create a plan of the making process – outlining an equipment and materials list, and the different stages/steps.</p> <p>Cycle 1 Spring 1: Express Yourself (Topic) *Twinkl included* -Use research to design a phone case for own personal use. 1) Create a design-criteria that fits their personal wants/needs through analysing and evaluating a range of existing phone cases. 2) Test a range of stitches (running, back, whip and blanket) to inform design choices. *Exposure to sewing machine* 3) Explore fastenings and recreate some (sew on buttons and make loops) 4) Generate detailed annotated sketches, pattern pieces and prototypes. 5) Prove their design fits the set criterion- engage in prototype evaluations (self and peer) and refine ideas accordingly *See evaluation column for more detail* 6) Create a plan of the making process – outlining an equipment and materials list, and the different stages/steps.</p> <p>Cycle 2 Autumn 1 and 2: The Mayans (Topic) -Use research to design their own Chicken Itza. 1) Investigate Mayan temples – structure, design, materials etc. 2) Explore how to strengthen, stiffen and reinforces more complex structures. 3) Generate detailed annotated sketches (computer based), exploded diagrams (computer based) and prototypes. 4) Prove their design fits the set criterion- engage in prototype evaluations (self and peer) and refine ideas accordingly *See evaluation column for more detail* 5) Create a plan of the making process – outlining an equipment and materials list, and the different stages/steps.</p> <p>Cycle 2 Spring 1: Living Things and their Habitats (Science) *Twinkl included* -Use market research to design an automata animal for sorting. 1) Carry out market research on the consumer (Y5/Y6 children) 2) Understand and use cams to test movement ideas. 3) Generate detailed annotated sketches and prototypes. 4) Prove their design fits the set criterion- engage in prototype evaluations (self and peer) and refine ideas accordingly *See evaluation column for more detail* 5) Create a plan of the making process – outlining an equipment and materials list, and the different stages/steps.</p>	<p>POWERFUL KNOWLEDGE: DT4 - In the design stage, create prototypes of their automata animal, phone case and temple before making a final vision, continuously modifying their plans as they go. DT5 - Follow a step-by-step plan for their AA, PC and temple, competently selecting and using the tools/materials which suit specific practical tasks and enhance the aesthetics. DT6 - Competently measure (cm and mm), mark out, cut, score and make holes in materials needed for their models (with supervision when using hacksaws and hand drills). DT7 - Competently join and assemble components (with supervision when using the hot glue-gun), paying attention to finishing techniques used for aesthetics and detail. DT8 - Build a free-standing temple with permanent joints that are strong and stable; applying their previous learning and understanding of stiffening and strengthening to build and adapt their temple.</p> <p>HOW DOES THIS LOOK AT TRANSMERE? Cycle 1 Autumn 1 and 2: Anglo-Saxons and Vikings (Topic) 1) Follow their design, selecting and competently using the right tools (ruler, pencil scissors, hacksaw and bench hook, hot glue gun, sandpaper, glue) and materials (battery holder, battery snap, toggle switch, motor and mount, crocodile leads, cable ties pulleys, wheels, straws, card, dowels, wood, paper, pens) 2) Accurately measure (cm and mm) mark out and cut (hacksaws) with supervision, the wood, dowels and straws needed to make their motor structure. 3) Use appropriate joining techniques (hot glue gun and triangle card jina) to assemble the structure base, wheels and dowel axels/straws. 4) Assemble and join (rubber bands, cable ties, crocodile clips) the pulley and motor system. 5) Accurately measure (cm and mm), mark out and cut their longboat design template. 6) With Supervision, join their longboat to their pulley-motor system using a hot glue gun. 7) At each stage, consider aesthetics and their audience when finishing their design.</p> <p>Cycle 1 Spring 1: Express Yourself (Topic) *Twinkl included* 1) Follow their design, selecting and competently using the right tools (ruler, scissors, needle) and materials (felts, threads, buttons, Velcro) 2) Accurately measure (cm and mm), mark out and cut their phone case templates. 3) Join their template together using the stitches decided upon during the design stage. 4) Join further materials for decoration using appropriate joining techniques (stitching, gluing, stapling). 5) At each stage, consider aesthetics and their audience when finishing their design.</p> <p>Cycle 2 Autumn 1 and 2: The Mayans (Topic) 1) Follow their design, selecting and competently using the right tools (hot glue-gun, hacksaws and bench hooks, sandpaper, rulers) and materials (wood, corrugated card) 2) Accurately measure (cm and mm) and mark out the wood and corrugated card pieces needed and with supervision (hacksaws), cut these. 3) With supervision [joining techniques = flange, slots and cuts, slots and tabs, hot-glue gun], assemble their temple, considering aesthetics when doing so. 4) At each stage, consider aesthetics and their audience when finishing their design.</p> <p>Cycle 2 Spring 1: Living Things and their Habitats (Science) *Twinkl included* 1) Follow their design, selecting and competently using the right tools (hot glue-gun, hacksaws and bench hooks, hand drills, rulers, cams, glue, scissors, paints, pens) and materials (wood, plastic tubing, dowels, card) 2) Competently measure (cm and mm), mark out and cut the wood frames and dowels for mechanism structure (with supervision) and card pieces for animals (independently). 3) Use card pieces to make their animal. 4) With supervision, drills holes in the frame structure and assemble / join together using a hot glue-gun. 5) Assemble the cams system and animal, using appropriate joining techniques (flange, slots and cuts, slots and tabs, glue gun, plastic tubing, hot glue gun or PVA glue). 6) At each stage, consider aesthetics and their audience when finishing their design.</p>	<p>POWERFUL KNOWLEDGE: DT9 - Know and explain how to test and evaluate their AA, PC and temple (prototype evaluations). DT10 - In the design stage, explore and evaluate free-standing Mayan temples and existing phone cases and explain what gives them strength, reinforcement, stability, aesthetic value and dress sales. Then, record modifications in design edits – adding to their drawings and labels. DT11 - In the design stage, engage in self, peer and when appropriate, consumer evaluations, using a numbered scale (1-10) with extended explanations to give reasons as to why conclusions were made. DT12 - Complete finished product evaluations to show an awareness of whether their design brief has been met, knowing how and why their model did or did not meet it and present their finished products (automata animal, temple and phone case), giving a demonstration and description, whilst also suggesting alternative plans: outlining the positive features and the draw backs.</p> <p>HOW DOES THIS LOOK AT TRANSMERE? Cycle 1 Autumn 1 and 2: Anglo-Saxons and Vikings (Topic) -Within the design stage and the post make stage, use a numbered scale (1-10) with extended explanations to evaluate (self, peer and consumer) their moving Viking longboat design against existing products, individual-self and peer opinions to judge against the criteria below: Cycle 1 Spring 1: Express Yourself (Topic) *Twinkl included* - Within the design stage and the post make stage, use a numbered scale (1-10) with extended explanations to evaluate (self, peer and consumer) their phone case prototype against existing products, individual-self and peer opinions to judge against the criteria below: Cycle 2 Autumn 1 and 2: The Mayans (Topic) - Within the design stage and the post make stage, use a numbered scale (1-10) with extended explanations to evaluate (self, peer and consumer) their Mayan Temple against existing products, individual-self and peer opinions to judge against the criteria below: Cycle 2 Spring 1: Living Things and their Habitats (Science) *Twinkl included* - Within the design stage and the post make stage, use a numbered scale (1-10) with extended explanations to evaluate (self, peer and consumer) their automata animals against existing products, individual-self and peer opinions to judge against the criteria below: Within the design phase considerations: -Has their product been successful? Does it work as it should? Does it appeal to its audience? Is it fit for purpose? Is it aesthetically pleasing? If so, why? If not, why? - Can you explain why your product will or will not be successful, and develop improvements which should be made to specifically target these areas? Look here specifically at the design criteria to recognise where their prototype does or does not fit the bill then modify. Post make phase considerations: - Can you describe your work and the process involved in creating it justifying your choices? - Are you pleased with the finished design? Is it strong and stable? Has the stitching been done carefully, neatly and methodically? - Were the materials used appropriate? Were they functional/aesthetically pleasing? - Can you explain how you developed your finished product based upon feedback from the design phase? - Did you test your product before presenting it to the consumer?</p>	<p>POWERFUL KNOWLEDGE: Technical DT13 - Create a prototype for their phone case, temple, Viking longboat and automata animal using j cloths, paper or card. DT14 - Use cams and a framework (wood and card) to create an automata animal. DT15 - Use electrical pulley-motors and switches to enhance a Viking longboat toy that relies upon a framework (wood and card). DT16 - Cut materials with precision to the nearest mm and refine the finish with appropriate tools (such as sanding wood after cutting), paying close attention to aesthetics when cutting, assembling and creating joints. DT17 - Cut slots and cut accurately and safely to make a marked line. DT18 - Use a hand drill to create tight and loose fit holes. DT19 - Use IT to design, create, evaluate, monitor and control a product and its advertising website.</p> <p>Textile DT20 - Pin and tack fabric pieces together before stitching then decorate textiles appropriately. Explore fastenings and recreate some (sew on buttons and make loops) DT21 - Have exposure to a sewing machine. They can sew in a straight, uniform line using one. DT22 - Pay close attention to aesthetics when cutting, assembling and creating joints. DT23 - Select an appropriate stitching for the job and hand, explaining why this was chosen over others.</p> <p>HOW DOES THIS LOOK AT TRANSMERE? Cycle 1 Autumn 1 and 2: Anglo-Saxons and Vikings (Topic) -Make a prototype -Use electrical motors and switches to enhance a Viking longboat toy. -Cut slots and cut accurately and safely to make a marked line. -Use a hand drill to create tight and loose fit holes. -Pay close attention to aesthetics when cutting, assembling and creating joints. -Build frameworks for their Viking longboat using a range of materials (wood, card). Cycle 1 Spring 1: Express Yourself (Topic) *Twinkl included* -Make a prototype -Cut felt templates with precision to the nearest mm. -Pay close attention to aesthetics when cutting, assembling and creating joints with their felt. -exploring and using fastenings (sew on buttons and make loops) -Pin and tack fabric pieces together before stitching. -Decorate their case appropriately. -Have exposure to a sewing machine. They can sew in a straight, uniform line using one. -Test a range of stitches (running, back, whip and blanket) to inform design choices. Cycle 2 Autumn 1 and 2: The Mayans (Topic) -Make a prototype -Cut wood and corrugated card with precision to the nearest mm and refine the finish with appropriate tools (e.g. sanding wood) -Cut slots in wood accurately and safely to make a marked line. -Pay close attention to aesthetics when cutting, assembling and creating joints with wood. Cycle 2 Spring 1: Living Things and their Habitats (Science) *Twinkl included* -Make a prototype -Use cams correctly and accurately to make their animal move. -Cut wood and card materials with precision to the nearest mm and refine the finish with appropriate tools (e.g. sanding wood) -Cut slots in wood accurately and safely to make a marked line. -Use a hand drill to create tight and loose fit holes. -Pay close attention to aesthetics when cutting, assembling and creating joints in their wood and card. -Build frameworks for their automata animal using a range of materials (wood, card). ICT Summer 2: Skills Showcase Pupils will use IT to design, create, evaluate, monitor and control a product and its advertising website. See IT planning for details</p>	<p>POWERFUL KNOWLEDGE: DT24 - Know the correct proportions for a balanced meal and how a poor diet can contribute towards health conditions such as obesity and heart disease. DT25 - Understand the difference between a savoury and a sweet dish. DT26 - Know where various foods and ingredients are from, globally, and when they are in season ready for harvest. Furthermore, explain how a variety of ingredients are reared, caught and processed. DT27 - Explain how food ingredients should be stored and give reasons (specifically the correct storage and heating of meat and fish and of rice using knowledge of spores, bacteria and causes of food poisoning.) DT28 - Research and plan a, budgeted (price per head), seasonal, savoury recipe, following this to prepare and make complex dishes (spaghetti meatballs and French custard tarte) safely and hygienically, being assisted when using a heat source (oven and hob). DT29 - With supervision, chop and finely chop (bridge and claw), grate and finely grate, peel, spread, mix, pour, stir, drain, cook (boil), fry, simmer, melt (bain-marie), bake, crack beat and separate eggs, shape spoon, whisk, sieve/sift, cream, fold, roll, shape, divide garnish and season safely and hygienically. DT30 - With supervision, weigh ingredients using digital scales and spring balances and measure ingredients using spoons, cups and jugs. DT31 - Explain why you might use a cooking technique (e.g., Bain-marie).</p> <p>HOW DOES THIS LOOK AT TRANSMERE? Cycle 1 Spring 2: Fit for Life (topic) *Twinkl included* 1) Research how different foods are reared, caught and processed. 2) Create a seasonality calendar for fruit and veg in the UK and taste some foods in season. 3) Research and understand the correct proportions to make a balanced meal. 4) Specifically look into plate proportions of proteins (how much, its importance, how its reared and processed, how its stored). 5) Plan a budgeted, healthy, balanced meal (Spaghetti Bolognese) that contains the correct proportions of the different food groups. 6) Focusing on the key skills (supervised) – weighing, measuring, chopping and finely chopping (bridge and claw), grating and finely grating, cracking and beating an egg, peeling, spreading, mixing, pouring, stirring, draining, garnishing and seasoning, prepare and make their dish. 7) With assistance, cook (boil), fry and simmer using the hob, focusing on safety procedures and controlling temperature. Cycle 2 Spring 1 and 2: WW2 (topic) *Twinkl Unit Included* 1) Research, sample and explore foods from around the world. (source, seasonality, how it's used). 2) Research and explore the ways people in different countries create balanced meals (meal proportions). 3) Compare and contrast the differences between meals in Britain during WW2 and now. (Use the Eatwell plate). 4) Research traditional French dishes (sweet and savoury) 5) Plan a budgeted, traditionally French dessert dish (French custard tarte). 6) Focusing on the key skills – weighing, measuring, whisking, cracking, beating and separating an egg, creaming, folding, sieving/sifting, rolling and shaping, prepare and make their dish. 7) With assistance, melt (bain-marie) and bake using the hob and oven, focusing on safety procedures and controlling temperature. 8) Explain why techniques were chosen (e.g., bain-marie over microwave)</p>