

St George's CE Primary Hyde – D&T

Early Years	Laying the essential building blocks to allow children to express themselves in a creative way.	Vocabulary
Autumn	<p>Can freely explore media. Learn to join and build with blocks and construction kits. Begin to join different materials and explore different textures.</p> <p>Begin to refine ideas and develop their ability to represent them. Begin to create collaboratively, sharing ideas, resources and skills. Explore a variety of materials, tools and techniques, beginning to experiment with colour, design, texture, form and function.</p>	picture, drawing, use, experiment, change, tools, materials, idea, improve, food, meal, snack, healthy, diet
Spring	<p>Can freely explore media. Make simple 'small worlds' with blocks and construction kits. Develop their own ideas and then with support decide which materials to use to express them. Join different materials and explore different textures.</p> <p>Refine ideas and develop their ability to represent them. Create collaboratively, sharing ideas, resources and skills. Explore a variety of materials, tools and techniques, beginning to experiment with colour, design, texture, form and function. Begin to share their creations, explaining the process they have used.</p>	
Summer	<p>Make imaginative and complex 'small worlds' with blocks and construction kits. Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.</p> <p>Return to and build on their previous learning, refining ideas and developing their ability to represent them. create collaboratively, sharing ideas, resources and skills. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used. Use what they have learnt about media and materials in original ways, thinking about uses and purpose. Can talk about the need for a healthy diet</p>	
Year 1		Vocabulary
Autumn	<p>Enquiry question: <u>Where do I live?</u> <u>Make a moving vehicle or person to move along street/canal in Hyde scene.</u></p> <p>1. ASPECT OF D&T: Mechanisms</p>	slider: a knob or lever that is moved horizontally or

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<p>2. FOCUS: Sliders and Levers</p> <p>3. KEY LEARNING:</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Early experience of working with paper and card to make simple flaps and hinges. • Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape. <p>Designing</p> <ul style="list-style-type: none"> • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through drawings and mock-ups with card and paper. <p>Making</p> <ul style="list-style-type: none"> • Plan by suggesting what to do next. • Select and use tools, explaining their choices, to cut, shape and join paper and card. • Use simple finishing techniques suitable for the product they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> • Explore a range of existing books and everyday products that use simple sliders and levers. • Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement. • Know and use technical vocabulary relevant to the product. <p>4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Class/group information book, poster, display, other-specify</p> <p>5. INTENDED USERS: themselves, friends, younger children, parents, grandparents, visitor to school, other-specify</p> <p>6. PURPOSE OF PRODUCTS: event, information, educational other - specify.</p> <p>7. PROJECT TITLE: Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.</p> <p>8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):</p> <ul style="list-style-type: none"> • Children explore and evaluate a collection of books and everyday products that have moving parts, including those with levers and sliders <i>e.g. What is it? Who is it for? What is it for?</i> • Use questions to develop children's understanding e.g. <i>What do you think will move? How will you make it move? What part of the product moved and how did it move? How do you think the mechanism works? What else could move in the product? How well does it work?</i> • Introduce and develop vocabulary e.g. lever, pivot, slider, left, right, push, pull, up, down, forwards, backwards, in, out. <p>9. FOCUSED TASKS (FTs):</p> <ul style="list-style-type: none"> • Demonstrate simple levers and sliders to the children using prepared teaching aids. It is helpful if these are also used in context e.g. the slider is used to show a bus moving along a road, the lever shows the canal boat bobbing along the canal. • Use questions to develop children's understanding e.g. <i>How does the slider move? How does the lever move? Which part of the mechanism is the pivot? What does the movement of the slider and lever remind you of?</i> • Following teacher demonstration of the correct use of tools and materials, children should develop their knowledge and skills by replicating the slider and lever teaching aids. Encourage children to add pictures to their mechanisms. <p>10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)</p>	<p>vertically to control an object, such as the volume of a radio.</p> <p>lever: a rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end when pressure is applied to the other.</p> <p>pivot: the central point, pin, or shaft on which a mechanism turns or oscillates.</p> <p>slot: a long, narrow slit for something to be inserted e.g. e lever.</p> <p>Push: applying a force to move something away.</p> <p>Pull: applying a force to move something closer.</p> <p>Fulcrum, bridge/guide, card, masking tape, paper fastener, join, up, down, straight, curve, forwards, backwards, design, make evaluate, user, purpose, ideas, design</p>
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	<ul style="list-style-type: none"> Discuss with the children what they will be designing, making and evaluating e.g. <i>Who will your product be for? What will be its purpose? How do you want it to move? Will you use a lever or a slider?</i> Generate simple design criteria with the children e.g. the mechanism should work smoothly, it should make the right type of movement. Encourage the children to develop their ideas through talking, drawing and making mock-ups of their ideas with paper and card. Discuss the finishing techniques the children might use e.g. using digital text and graphics, paint, felt tipped pens or collage. As a whole class, talk about the order in which the mechanism will be made. Ask children to evaluate their developing ideas and final products against the original design criteria. <p>11. RELATED LEARNING IN OTHER SUBJECTS:</p> <ul style="list-style-type: none"> Geography: Name some of the physical features of the local area. Mathematics: Describe position, direction and movement. Use appropriate standard and non-standard measure. English: Participate in discussion about books and other products with moving parts, taking turns and listening to what others say. Ask relevant questions to extend their knowledge and understanding. Build technical and directional vocabulary. Children listen and respond appropriately to adults. Use spoken language to develop understanding through imagining and exploring ideas. Art and design: use colour, pattern, line, shape. Computing: Digital graphics and text could be incorporated into final products as the background or moving parts. <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	<p>criteria, product, function</p> 
Spring	<p>Enquiry question: <u>How is a farm different to Hyde?</u> <u>Preparing food using vegetables grown on farm. Food to plate</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Food technology FOCUS: Preparing fruit and vegetables KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance, taste and smell. Experience of cutting soft fruit and vegetables using appropriate utensils. <p>Designing</p> <ul style="list-style-type: none"> Design appealing products for a particular user; based on simple design criteria. Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. Communicate these ideas through talk and drawings. <p>Making</p> <ul style="list-style-type: none"> Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. 	<p>Vocabulary</p> <p>fruit: plant or tree's edible seed with envelope</p> <p>vegetable: plant used for food</p> <p>nutrients: all the things in food that the body needs to remain healthy</p>

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- Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create chosen product. using simple utensils and equipment.

Evaluating

- Taste and evaluate a range of fruit and vegetables to determine the intended user's preference.
- Evaluate ideas and finished products against design criteria, including intended user and purpose.

Technical knowledge and understanding

- Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.
- Understand and use the basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of *The eatwell plate*.

- Know and use technical and sensory vocabulary relevant to the project.

4. **WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE?** Fruit salad, vegetable salad, fruit and vegetable kebabs, sandwich, soup, other - specify

5. **INTENDED USERS:** themselves, friends, peers at school, parents, other-specify

6. **PURPOSE OF PRODUCTS:** to feed themselves and others, picnic, celebration, party, school event other - specify.

7. **PROJECT TITLE:** Design, make and evaluate a _____(product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.

8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):

- Children examine a range of fruit and vegetables. Use questions to develop children's understanding e.g. *What is this called? Who has eaten this fruit/vegetable before? Where is it grown? When can it be harvested? What are its tastes, smell, texture and appearance? What will it look like if we peel it or cut it in half? What are the different parts called?*

- Provide opportunities for children to handle, smell and taste fruit and vegetables in order to describe them through talking and drawing e.g. *What words can we use to describe the shape, colour, feel, taste?*

- Evaluate existing products to determine what the children like best; provide opportunities for the children to investigate preferences of their intended users/suitability for intended purposes e.g. *What do you prefer and why? What might we want to include in our product to meet our user's preferences? Which fruit/vegetables might be the best for our product to match the occasion/purpose?*

9. FOCUSED TASKS (FTs):

- Discuss basic food hygiene practices when handling food including the importance of following instructions to control risk e.g. *What should we do before we work with food? Why is following instructions important?*

- Demonstrate how to use simple utensils and provide opportunities for the children to practise food-processing skills such as washing, grating, peeling, slicing, squeezing e.g. *Do we eat the whole fruit? Why or why not? Which parts do we eat? What might we have to do before eating this? Why do we cut, grate, peel and slice in this way?* Discuss different effects achieved by different processes.

- Discuss healthy eating advice, including eating more fruit and vegetables; using *The eatwell plate* model talk about the importance of fruit and vegetables in our balanced diet e.g. *Why is it good to eat fruit and vegetables? How many pieces of fruit/vegetables do you eat per day? Why is it important to wash fruit/vegetables before we eat them?*

10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)

- Set a context for designing and making which is authentic and meaningful.
- Discuss with the children the possible products that they might want to design, make and evaluate and who the products will be for. Agree on design criteria that can be used to guide the development and evaluation of children's products e.g. *Who/what is the product for? What will make our product unique/different? How will we know that we designed and made a successful product?*

- Use talk and drawings when planning for a product; ask the children to develop, model and communicate their ideas e.g. *What will you need? What fruit/vegetables will you need? How much will you need? How will you present the product?*

- Talk to the children about the main stages in making, considering appropriate utensils and food processes they learnt about through IEAs and FTs.

pith: the soft white lining inside fruit such as oranges

salad: a cold dish of fresh and/or cooked vegetables or fruit

sensory evaluation: subjective testing of foods where sense are used to evaluate qualities such as appearance, smell, taste, texture (mouth/feel)

kebab: cooked and/or fresh ingredients on a skewer.

Cut, scoop, grate, soft, crunchy, juicy, stone, seed, sweet, sour, oven, cook, mix, blend, melt, pour



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	<ul style="list-style-type: none"> Evaluate as the children work through the project and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed. <p>11. RELATED LEARNING IN OTHER SUBJECTS:</p> <ul style="list-style-type: none"> Geography: physical features, including: soil, valley, vegetation, season and weather, human features, including: city, town, village, farm and shop Mathematics: carry out a simple survey to find out which are their favourite fruits/vegetables; construct and interpret the information in e.g. pictograms and bar graphs. Spoken language: Children develop and use sensory vocabulary. Ask questions to check understanding; use the correct terminology for equipment and food processes. Writing: develop descriptive writing based on first-hand experience of tasting fruit and vegetables. Instructions on how to use one of the utensils; how to prepare e.g. a fruit for eating. Children write a simple account about how they made their food product. Science: understand that plants have leaves, stems, roots, flowers and fruits; understand the importance of growing plants and how seasons affect growth. <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely and hygienically, using tools, equipment, techniques and ingredients appropriate to the task. Prior to undertaking this project risk assessments should be carried out. Including identifying where there are children who are not permitted to taste or handle and food ingredients or products.</p>	
Summer	<p>Enquiry question: <u>How is Antarctica similar/different to the UK?</u> <u>Make an Antarctic animal puppet. Could make clothes to keep them warm.</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Textiles FOCUS: Templates and joining techniques KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Explored and used different fabrics. Cut and joined fabrics with simple techniques. Thought about the user and purpose of products. <p>Designing</p> <ul style="list-style-type: none"> Design a functional, appealing product for a chosen user and purpose based on simple design criteria. Generate, develop, model and communicate ideas as appropriate through talking, drawing, templates and mock-ops. <p>Making</p> <ul style="list-style-type: none"> Select from & use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining, finishing. Select and use textiles according to their characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> Explore and evaluate a range of existing textile products relevant to the project being undertaken. Evaluate their ideas throughout and their final products against original design criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Understand how simple 3D textile products are made, using a template to create two identical shapes. Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. Know and use technical vocabulary relevant to the project. 	<p>Vocabulary</p> <p>applique: to attach a decorative fabric item onto another piece of fabric by gluing and/or sewing</p> <p>design: to generate, develop and communicate ideas for a product</p> <p>embroider: to decorate fabric with stitches</p> <p>evaluate: to judge how a product meets chosen criteria</p> <p>fray: to unravel or become worn at the edge</p>

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4. **WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE?** Glove puppet, finger puppet, simple bag, clothes for teddy/soft toy/class doll, fabric placemat, other - specify
5. **INTENDED USERS:** themselves, friends, younger children, parents, grandparents, teddy, story character, doll
6. **PURPOSE OF PRODUCTS:** plays with puppets, clothes for toys, carrying and storing items, protecting surfaces, imaginary role-play, other - specify.
7. **PROJECT TITLE:** Design, make and evaluate a _____(product) for _____(user) for _____(purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.
8. **INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):**
 - Children investigate and evaluate existing products linked to the chosen project. Explore and compare e.g. fabrics, joining techniques, finishing techniques and fastenings used.
 - Use questions to develop children's understanding e.g. *How many parts is it made from? What is it joined with? How is it finished? Why do you think these joining techniques have been chosen? How is it fastened? Who might use it and why?*
 - Make drawings of existing products, stating the user and purpose. Identify and label, if appropriate, the fabrics, fastenings and techniques used.
9. **FOCUSED TASKS (FTs):**
 - Investigate fabrics to determine which is best for the purpose of the product they are creating.
 - Using prepared teaching aids, demonstrate the use of a template or simple paper pattern. Children could make their own templates or paper patterns. If necessary, they can use ones provided by the teacher.
 - Using prepared teaching aids, demonstrate the correct use of appropriate tools to mark out, tape or pin the fabric to the templates or paper patterns and cut the relevant fabric pieces for the product.
 - Using prepared aids, demonstrate appropriate examples of joining techniques for children to practice in groups e.g. running stitch including threading own needle.
 - Using prepared teaching aids, demonstrate examples of finishing techniques for children to practise in guided groups e.g. gluing sequins or buttons, fabric pens
10. **DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)**
 - Provide children with a context that is authentic. Discuss with the children the purpose and user of the products they will be designing, making and evaluating. Design criteria developed with the teacher should be used to guide the development and evaluation of the children's products.
 - Ask the children to generate a range of ideas e.g. *What parts will the product need to have and what will it be made from? What size will it be? How will it be joined and finished?*
 - Through talk, drawings and mock-ups, ask the children to develop and communicate their ideas.
 - Talk with the children about the stages in making before assembling quality products, applying the knowledge, understanding and skills learnt through the IEAs and FTs.
 - Evaluate ongoing work and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.
11. **RELATED LEARNING IN OTHER SUBJECTS:**
 - Science: Everyday materials. Investigate physical properties of fabric types against suitability for the product to be made. Select appropriate materials for their products.
 - Mathematics: Measuring length using standard and nonstandard units.

mock-up: a model which allows children to try out ideas using cheaper materials and temporary joints

seam: a row of stitches joining two pieces of fabric

sew: to join pieces of fabric with stitches

template: a shape drawn to assist cutting out shapes.

Names of existing products, joining and finishing techniques, tools, fabrics and components, pattern pieces, mark out, join, decorate, finish



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	<ul style="list-style-type: none"> • Spoken language: Ask relevant questions to build understanding and vocabulary and knowledge. Listen and respond to adults. Explain and articulate their ideas orally. • Art and design: use and develop drawing skills. Use colour, pattern, texture, and shape as appropriate. <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	
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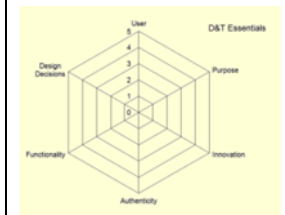
Year 2		Vocabulary
Autumn	<p>Enquiry question: <u>What was Hyde like in the past?</u></p> <p><u>Make bodies of vehicles or significant local buildings\playground</u></p> <ol style="list-style-type: none"> 1. ASPECT OF D&T: Structures 2. FOCUS: Freestanding structures 3. KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> • Experience of using construction kits to build walls, towers and frameworks. • Experience of using basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card. • Experience of different methods of joining card and paper. <p>Designing</p> <ul style="list-style-type: none"> • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through talking, mock-ups and drawings. <p>Making</p> <ul style="list-style-type: none"> • Plan by suggesting what to do next • Select and use textiles according to their characteristics. • Select new and reclaimed materials and construction kits to build their structures. • Use simple finishing techniques suitable for the structure they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> • Explore a range of existing free standing structures in the school and local environment e.g. everyday products and buildings. • Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project. <ol style="list-style-type: none"> 4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Horse cart, old cars, trams, trains, market stall, town hall, church, school, clock tower, playground equipment. 5. INTENDED USERS: themselves, school community, friends, children of different ages, general public, older people, story characters, other - specify 6. PURPOSE OF PRODUCTS: imaginary role-play, pleasure, recreation, leisure, museum, display, other - specify. 	<p>Freestanding structure: a structure that stands on its own foundation or base without attachment to anything else</p> <p>Frame structure: a structure made from thin components e.g. tent frame</p> <p>Shell structure: a hollow structure with a thin outer covering</p> <p>stability: in relation to a freestanding structure, the extent to which it is likely to fall over if a force is applied.</p> <p>buttress: a structure added to a wall, tower or framework to make it more stable and/or reinforce it.</p>

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7. **PROJECT TITLE:** Design, make and evaluate a _____(product) for _____(user) for _____(purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.
8. **INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):**
- Go on a walk and/or look at photographs of the local area/vehicles to explore structures such as playground equipment, street furniture, walls, towers and bridges e.g. *What are the structures called and what is their purpose? Who might use them? What materials have been used? Why have these been chosen? How have the parts been joined together? How have the structures been made strong enough? How have they been made stable?*
 - Where possible, ask the children to draw or photograph the structures they have been exploring and label with the correct technical vocabulary in relation to the structure, materials used and shapes e.g. wall, tower, framework, base, joint, metal, wood, plastic, brick, triangle, square, rectangle, cuboid, cube.
9. **FOCUSED TASKS (FTs):**
- Demonstrate measuring, marking out, cutting, shaping, joining and finishing techniques with a range of tools and new and reclaimed materials that children are likely to use to make their structures. Discuss the suitability of materials for their products according to their characteristics.
 - Ask the children to build and explore a variety of freestanding structures using construction kits, such as wooden blocks, interconnecting plastic bricks and those that make frameworks e.g. *How can you stop your structures from falling over? How they can be made stronger and stiffer in order to carry a load?* Children could make models of the structures they have seen in school and the local area.
 - Ask children to fold paper or card in different ways to make freestanding structures, using masking tape where necessary to make joins. Encourage them to think about how folding materials can make them stronger, stiffer, stand up and be more stable e.g. *Can they support an object on top of their structures without it falling over or breaking?*
10. **DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)**
- Discuss with the children what structure they will be designing, making and evaluating e.g. *Who will your product be for? What will be its purpose? What materials will you use? How will you make it strong and stable?*
 - Generate some simple design criteria with the children e.g. the structure should stand up on its own, it should be strong enough for to carry Teddy.
 - Encourage the children to develop their ideas through talking, drawing and making mock-ups of their ideas with construction kits and other materials.
 - As a whole class, plan the order in which the structures will be made. Children could make their final products from construction kits, new and reclaimed materials or any combination of these, according to their characteristics.
 - Ask children to evaluate their developing ideas and final products against original design criteria.
11. **RELATED LEARNING IN OTHER SUBJECTS:**
- Science: Think about the properties of materials that make them suitable or unsuitable for particular purposes.
 - Mathematics: Use appropriate standard and non-standard measures. Recognise and name common 2-D and 3-D shapes.
 - English: Participate in discussion about various structures, taking turns and listening to what others say. Ask relevant questions to extend their knowledge and understanding. Build technical vocabulary. Use spoken language to develop understanding through imagining and exploring ideas.
 - Art and design: Use colour, pattern, line, shape. Use and develop drawing skills.
 - History: How have local buildings changed over time.

brick bonding:
arranging brick in a wall to improve the importance of the structure or improve its appearance
mock-up: 3-D representation of a product

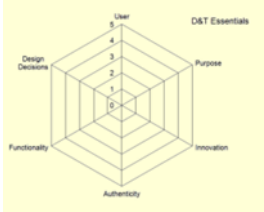
cut, fold, join, fix, , wall, tower, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder, design, make, evaluate, user, purpose, ideas, design, criteria, product, function



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	<p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	
<p>Spring</p>	<p>Enquiry question: <u>Why is Rosa Parks and why is she remembered?</u> <u>If Rosa Parks lived today, what would she wear? Design a part of her outfit</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Textiles FOCUS: Uses of everyday materials KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Explored and used different fabrics. Cut and joined fabrics with simple techniques. Thought about the user and purpose of products. <p>Designing</p> <ul style="list-style-type: none"> Design a functional, appealing product for a chosen user and purpose based on simple design criteria. Generate, develop, model and communicate ideas as appropriate through talking, drawing, templates and mock-ups. <p>Making</p> <ul style="list-style-type: none"> Select from & use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining, finishing. Select and use textiles according to their characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> Explore and evaluate a range of existing textile products relevant to the project being undertaken. Evaluate their ideas throughout and their final products against original design criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Understand how simple 3D textile products are made, using a template to create two identical shapes. Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. Know and use technical vocabulary relevant to the project. <ol style="list-style-type: none"> WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Hat, top, dress, gloves, shoes other - specify INTENDED USERS: themselves, friends, siblings, other - specify PURPOSE OF PRODUCTS: role play, museum, other - specify. PROJECT TITLE: Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. <p>Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.</p> <ol style="list-style-type: none"> INVESTIGATE AND EVALUATE ACTIVITIES (IEAs): <ul style="list-style-type: none"> Children investigate and evaluate existing products linked to the chosen project. Explore and compare e.g. fabrics, joining techniques, finishing techniques and fastenings used. Use questions to develop children's understanding e.g. <i>How many parts is it made from? What is it joined with? How is it finished? Why do you think these joining techniques have been chosen? How is it fastened? Who might use it and why?</i> Make drawings of existing products, stating the user and purpose. Identify and label, if appropriate, the fabrics, fastenings and techniques used. FOCUSED TASKS (FTs): <ul style="list-style-type: none"> Investigate fabrics to determine which is best for the purpose of the product they are creating. 	<p>Vocabulary</p> <p>applique: to attach a decorative fabric item onto another piece of fabric by gluing and/or sewing</p> <p>design: to generate, develop and communicate ideas for a product</p> <p>embroider: to decorate fabric with stitches</p> <p>evaluate: to judge how a product meets chosen criteria</p> <p>fray: to unravel or become worn at the edge</p> <p>mock-up: a model which allows children to try out ideas using cheaper materials and temporary joints</p> <p>seam: a row of stitches joining two pieces of fabric</p> <p>sew: to join pieces of fabric with stitches</p>

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	<ul style="list-style-type: none"> Remind children of the skills they learnt in Year 1. Using prepared teaching aids, demonstrate the use of a template or simple paper pattern. Children could make their own templates or paper patterns. If necessary, they can use ones provided by the teacher. Using prepared teaching aids, demonstrate the correct use of appropriate tools to mark out, tape or pin the fabric to the templates or paper patterns and cut the relevant fabric pieces for the product. Using prepared aids, demonstrate appropriate examples of joining techniques for children to practice in groups e.g. running stitch including threading own needle, stapling, lacing and gluing. Talk about the advantages and disadvantages of each technique. Using prepared teaching aids, demonstrate examples of finishing techniques for children in practise in guided groups e.g. sewing buttons, 3-D fabric paint, gluing sequins, printing. <p>10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)</p> <ul style="list-style-type: none"> Provide children with a context that is authentic. Discuss with the children the purpose and user of the products they will be designing, making and evaluating. Design criteria developed with the teacher should be used to guide the development and evaluation of the children's products. Ask the children to generate a range of ideas e.g. <i>What parts will the product need to have and what will it be made from? What size will it be? How will it be joined and finished?</i> Through talk, drawings and mock-ups, ask the children to develop and communicate their ideas. Talk with the children about the stages in making before assembling quality products, applying the knowledge, understanding and skills learnt through the IEAs and FTs. Evaluate ongoing work and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed. <p>11. RELATED LEARNING IN OTHER SUBJECTS:</p> <ul style="list-style-type: none"> Science: Everyday materials. Investigate physical properties of fabric types against suitability for the product to be made. Select appropriate materials for their products. Mathematics: Measuring length using standard and nonstandard units. Spoken language: Ask relevant questions to build understanding and vocabulary and knowledge. Listen and respond to adults. Explain and articulate their ideas orally. Art and design: use and develop drawing skills. Use colour, pattern, texture, and shape as appropriate. <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	<p>template: a shape drawn to assist cutting out shapes.</p> <p>Names of existing products, joining and finishing techniques, tools, fabrics and components, pattern pieces, mark out, join, decorate, finish</p> 
<p>Summer</p>	<p>Enquiry question: <u>How has transport changed?</u></p> <p><u>Create a vehicle either from the past, present or future.</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Mechanisms FOCUS: Wheels and axles KEY LEARNING: 	<p>Vocabulary</p> <p>axle: a rod that enables a wheel to rotate. The wheel can rotate freely on the axle or be fixed to, and turn with, the axle</p>

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Prior learning

- Assembled vehicles with moving wheels using construction kits.
- Explored and used toys with wheels and axles in play.
- Gained some experience of designing, making and evaluating products for a specified user and purpose.
- Developed some cutting, joining and finishing skills with card.

Designing

- Generate initial ideas and simple design criteria through talking and using own experiences.
- Develop and communicate ideas through drawings and mock ups.

Making

- Select from and use a range of appropriate tools and equipment to perform practical tasks.
- Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.

Evaluating

- Explore and evaluate a range of products with wheels and axles.
- Evaluate their ideas throughout and their products against original criteria.

Technical knowledge and understanding

- Explore and use wheels, axles and axle holders.
 - Distinguish between fixed and freely moving axles.
 - Know and use technical vocabulary relevant to the project.
4. **WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE?** A toy of a vehicle either from the past or present, that can be pushed along, e.g bike, cart, car, bus, train, tram, tractor.
 5. **INTENDED USERS:** themselves, friends, younger children, older children, story character
 6. **PURPOSE OF PRODUCTS:** pleasure, moving objects, museum display, other – specify
 7. **PROJECT TITLE:** Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.
 8. **INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):**
 - Explore and evaluate a range of wheeled products such as toys and everyday objects. Through questioning, direct children's observations e.g. the number, size, position and methods of fixing wheels and axles. *How do you think the wheels move? How do you think the wheels are fixed on? Why do you think the product has this number of wheels? Why do you think the wheels are round?*
 - Draw an example of a wheeled product, stating the used and purpose, and labelling the main parts e.g. body, chassis, wheels, axles and axle holders.
 - Walk around the school building and grounds, recording how wheels and axles are used in daily life. Perhaps visit a local garage.
 - Read a story or non-fiction book that includes a wheeled product. Use this to introduce relevant vocabulary and to emphasis user and purpose.
 9. **FOCUSED TASKS (FTs):**
 Using construction kits with wheels and axles, ask children to make a product that moves.
 Demonstrate to children how wheels and axles may be assembled as either fixed axles or free axles.
 Show different ways of making axle holders and stress the importance of making sure the axles run freely within the holders.
 Ensure that children are taught how to mark out, hold, cut and join materials and components correctly.

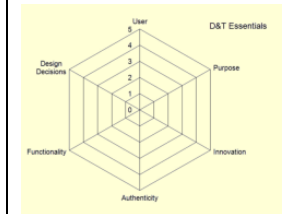
chassis: the frame or base on which a vehicle is built on.

axle holder: the component through which an axle fits and rotates

friction: resistance which is encountered when two things rub together

dowel: wooden rods used for making axles to hold wheels

vehicle
wheel
body
cab



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	<p>Using samples of materials and components they will use when designing and making, ask the children to assemble some examples of wheel, axle, axle holder combinations. Display the work completed as a reference for their DMEA.</p> <p>10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)</p> <p>Discuss with the children what they will be designing, making and evaluating within an authentic context.</p> <p>With the children identify a user and purpose for the product and generate simple criteria.</p> <p>Ask children to generate, develop and communicate their ideas as appropriate e.g. through talk and drawing. Talk about, evaluate and share ideas with other children/adults.</p> <p>Make their wheel and axle product using their design ideas and criteria as an ongoing guide.</p> <p>Discuss how the children might add finishing techniques to their product with reference to their design ideas and criteria. Direct the children to ICT opportunities such as clip art, word processing, paint or simple drawing programs.</p> <p>Ask children to evaluate their finished product, communicating how it works and how it matches their design criteria, including any changes they made.</p> <p>11. RELATED LEARNING IN OTHER SUBJECTS: Science: working scientifically: ask simple questions and observe closely. Explore use of everyday materials.</p> <p>Mathematics: number of wheels, more than, less than, equal. Measuring length using standard and nonstandard units.</p> <p>Spoken language: use of technical vocabulary. Ask relevant questions to extend understanding and build vocabulary and knowledge. Give well-structured descriptions and explanations. Develop speaking and listening skills. Use spoken language to develop understanding through imagining and exploring ideas.</p> <p>Art and design: use a range of media and materials creatively to design and make products.</p> <p>History: Purpose of different modes of transport. Why was there a need for transport? What did it help? Discuss a range of scenarios and how they might have been overcome, eg. wanting to move a large load, wanting to travel a long distance, wanting to move a large number of people.</p> <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	
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Year 3		Vocabulary
Autumn	<p>Enquiry question: <u>What makes a river?</u></p> <p><u>Make a lighthouse</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Electrical systems FOCUS: Simple circuits and switches KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Cut and joined a variety of construction materials such as wood, card, plastic, reclaimed materials and glue. <p>Designing</p>	<p>circuit: path through which electricity passes</p> <p>conductor: a material which allows an electrical current to pass through it</p>

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<ul style="list-style-type: none"> • Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross sectional and exploded diagrams. <p>Making</p> <ul style="list-style-type: none"> • Order the main stage of making. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Select from and use materials and components including construction materials and electrical components according to their functional properties and aesthetic qualities. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and analyse a range of existing battery-powered products. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand and use electrical systems in their products, such as series circuits incorporating bulbs. • Apply their knowledge of computing to program and control their products. • Know and use technical vocabulary relevant to the project. <p>4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Lighthouse, illuminated sign, torches, hands free head lamp, other – specify.</p> <p>5. INTENDED USERS: themselves, younger children, older children, teenagers, siblings, parents, grandparents, friends, other - specify</p> <p>6. PURPOSE OF PRODUCTS: safety and security, utility, other – specify</p> <p>7. PROJECT TITLE: Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.</p> <p>8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):</p> <ul style="list-style-type: none"> • Discuss, investigate and where practical, disassemble different examples of relevant battery-powered products, including those which are commercially available e.g. <i>Where and why they are used? How does the product work? What are its key features and components? How does the switch work? Is the product manually controlled or controlled by a computer? What materials have been used and why? How is it suited to its intended user and purpose?</i> • Ask children to investigate examples of switches, including those that are commercially available, which work in different ways e.g. push-to-make, push-to-break, toggle switch. Let the children use them in simple circuits e.g. <i>How might different types of switches be useful in different types of products?</i> <p>9. FOCUSED TASKS (FTs):</p> <ul style="list-style-type: none"> • Teach the children how to make manually controlled, simple series circuits with batteries and different types of switches, bulbs and buzzers. Discuss which of the components in the circuit are input devices e.g. switches, and which are output devices e.g. bulbs and buzzers. • Demonstrate how to find a fault in a simple circuit and correct it, giving pupils opportunities to practice. • Use a simple computer control program with an interface box or standalone control box to physically control output devices e.g. bulbs and buzzers. • Ask the children to make a variety of switches by using simple classroom materials e.g. card, corrugated plastic, aluminium foil, paper fasteners and paper clips. Encourage children to make switches that operate in different ways e.g. when you press them, when you turn them, when you push them from side to side. Ask the children to test their switches in a simple series circuit. 	<p>insulator: a material which does not easily allow electric current to pass through it</p> <p>prototype: a model made to test whether a design will work</p> <p>push to break switch: a switch turned off by pressing it</p> <p>push to make switch: a switch turned on by pressing it</p> <p>reed switch: a switch operated by a magnet</p> <p>toggle switch: a switch operated when a lever is pressed</p> <p>system: a set of related parts or components that together achieve a desired outcome</p> <p>output devices: components that produce an outcome e.g. bulbs and buzzers</p> <p>input devices: components that are used to control an electrical circuit e.g. switches</p>
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	<ul style="list-style-type: none"> Teach children how to avoid making short circuits. <p>10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)</p> <ul style="list-style-type: none"> Develop a design brief with the children within a context that is authentic and meaningful. Discuss with the children the purpose of the battery-powered products that they will be designing and making and who they will be for. Ask the children to generate a range of ideas, encouraging realistic responses. Agree on design criteria that can be used to guide the development and evaluation of the children's products, including safety features. Using annotated sketches, cross-sectional and exploded diagrams, as appropriate, ask the children to develop, model and communicate their ideas. Ask the children to consider the main stages in making and testing before assembling high quality products, drawing on the knowledge, understanding and skills learnt through IEAs and FTs. Evaluate throughout and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed. <p>11. RELATED LEARNING IN OTHER SUBJECTS:</p> <ul style="list-style-type: none"> Science: Know how to construct simple series circuits and have a basic understanding of conductors, insulators and open and closed switches. Computing: Design, write and debug programs that accomplish specific goals, including controlling physical systems. <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project</p>	<p>series circuit, fault, connection, battery, battery holder, bulb, bulb holder wire, crocodile clip</p> <p>control, program,</p> 
<p>Spring</p>	<p>Enquiry question: <u>What makes a mountain?</u> <u>Design and make a healthy packed lunch to take on a hike.</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Food technology FOCUS: Healthy and varied diet KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Knows some ways to prepare ingredients safely and hygienically. Have some basic knowledge and understanding about healthy eating and The eatwell plate. Have used some equipment and utensils and prepared and combined ingredients to make a product. <p>Designing</p> <ul style="list-style-type: none"> Generate and clarify ideas through discussion with peers and adults to develop criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> Plan the main stage of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. 	<p>Vocabulary</p> <p>appearance: how the food looks to the eye</p> <p>texture: how the product feels to the mouth</p> <p>sensory evaluation: evaluating food products in terms of the taste, smell, texture and appearance</p> <p>preference test: trying different foods and deciding which you like best</p> <p>processed food: ingredients that have</p>

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- Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Technical knowledge and understanding

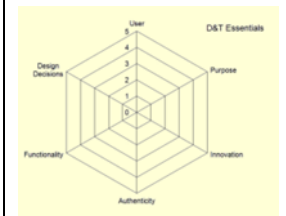
- Know how to use appropriate equipment and utensils to prepare and combine food.
 - Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.
 - Know and use relevant technical and sensory vocabulary appropriately.
- 4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE?** Sandwiches, wraps, rolls, pitta pockets
 - 5. INTENDED USERS:** themselves, classmate, other - specify
 - 6. PURPOSE OF PRODUCTS:** picnic, off-site, healthy living, celebration, other – specify
 - 7. PROJECT TITLE:** Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.
 - 8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):**
 - Children investigate a range of food products e.g. the content of their lunchboxes over a week, a selection of food provided for them, food from a visit to a local shop. Link to the principles of a varied and healthy diet using The eatwell plate e.g. *What ingredients have been used? Which food groups do they belong to? What substances are used in the products e.g. nutrients, water and fibre?*
 - Carry out sensory evaluations on the contents of the food from e.g. a variety of bought food products such as a range of wraps or sandwiches. Record results, for example using a table. Use appropriate words to describe the taste/smell, texture, appearance e.g. *How do the sensory characteristics affect your liking of the food?*
 - Gather information about existing products available relating to your product. Visit a local supermarket and/or use the internet.
 - Find out how a variety of ingredients used in products are grown and harvested, reared, caught and processed e.g. *Where and when are the ingredients grown? Where do different meats/fish/cheese/eggs come from? How and why are they processed?*
 - 9. FOCUSED TASKS (FTs):**
 - Learn to select and use a range of utensils and use a range of techniques as appropriate to prepare ingredients hygienically including the bridge and claw technique, grating, peeling, chopping, slicing, mixing, spreading, kneading and baking.
 - Food preparation and cooking techniques could be practiced by making a food product using an existing recipe.
 - Discuss basic food hygiene practices when handling food including the importance of following instructions to control risk e.g. *What should we do before we work with food? Why is following instructions important?*
 - 10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)**
 - Discuss the purpose of the products that the children will be designing, making and evaluating and who the products will be for.
 - Develop and agree on design criteria with the children within a context that is authentic and meaningful. This can include criteria relating to healthy eating and a varied diet e.g. *What do you need to consider to make it part of a balanced diet? How do we select the ingredients? How could we make it appealing to eat?*
 - Ask children to generate a range of ideas encouraging realistic responses.
 - Using discussion, annotated sketches and information and communication technology if appropriate, ask the children to develop and communicate their ideas.
 - Ask children to consider the main stage in making the food product, before preparing/cooking the product including the ingredients and the utensils they need.
 - Evaluate as the assignment proceeds and the final product against the intended purpose and user, reflecting on the design criteria previously agreed. Consider what others think of the product when considering how the work might be improved.

been changed in some way to enable them to be eaten or used in food preparation and cooking

Names of products, names of equipment, utensils, techniques and ingredients

Texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury

Hygienic, edible, grown, reared, caught, frozen, tinned, seasonal, harvested, healthy/varied, diet



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	<p>11. RELATED LEARNING IN OTHER SUBJECTS:</p> <ul style="list-style-type: none"> • Science: using and developing skills of observing and questioning. Humans get nutrition from what they eat. Discuss changes of state if heat is used. • Spoken language: developing relevant vocabulary e.g. sensory descriptors, names of utensils and techniques. Ask relevant questions to extend their knowledge. Consider and evaluate different viewpoints. Use discussion to develop understanding through exploring ideas. • Mathematics: mass kg/g <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely and hygienically, using tools, equipment, techniques and ingredients appropriate to the task. Risk assessments should be carried out prior to undertaking this project, including whether there are children who are not permitted to taste or handle any food ingredients or products</p>	
<p>Summer</p>	<p>Enquiry question: <u>Why would you visit Hyde?</u> <u>Create packaging for Fairtrade food items.</u></p> <ol style="list-style-type: none"> 1. ASPECT OF D&T: Structures 2. FOCUS: Shell structures (box for Fairtrade item) 3. KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> • Experience of using different joining, cutting and finishing techniques with paper and card. • A basic understanding of 2D and 3D shapes in maths and the physical properties and everyday uses of materials in science. <p>Designing</p> <ul style="list-style-type: none"> • Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. • Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> • Order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain Their choice of materials according to functional properties and aesthetic qualities. • Use finishing techniques suitable for the product they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate & evaluate a range of existing structures including the materials, components & techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Develop and use knowledge of how to construct strong, stiff structures. • Know and use technical vocabulary relevant to the project. <ol style="list-style-type: none"> 4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Gift boxes/containers, packaging 5. INTENDED USERS: themselves, siblings, parents, relatives, friends, other - specify 6. PURPOSE OF PRODUCTS: display, celebration, storage, packaging, protection, marketing, presentation, other – specify 7. PROJECT TITLE: Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10. 8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs): <ul style="list-style-type: none"> • Children investigate some display stands ort shell structures including packaging. Use questions to develop children's understanding e.g. <i>What is the purpose of the structure – protecting, containing, presenting, displaying What material is it made from? How has it been constructed? Are the materials</i> 	<p>Vocabulary</p> <p>cuboid: a solid body with rectangular sides</p> <p>edge: where two surfaces meet at an angle</p> <p>face: a surface of a geometric shape</p> <p>font: a printer's term meaning the style of lettering being used</p> <p>net: the flat or opened-out shape of an object such as a box</p> <p>prism: a solid geometric shape with ends that are similar, equal and parallel</p> <p>scoring: cutting a line or mark into sheet material to make it easier to fold</p>

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recyclable or reusable? How has it been stiffened i.e. folded, corrugated, ribbed, laminated? What size/shape/colour is it? What information does it show and why? How attractive is the design?

- Children take a small package apart identifying and discussing parts of a net including the tabs e.g. *How are different faces of the package arranged? How are the tabs used to join the 'free' edges of the net?*
- Evaluate existing products to determine which designs children think are the most effective. Provide opportunities for the children to judge the suitability of the structures for their intended users and purposes. Discuss graphics including colours/impact of style/logo/size of font e.g. *What do you prefer and why? What style of graphics and lettering might we want to include in our product to meet users' preferences and its intended purpose? Which packaging might be the best for...?*

9. FOCUSED TASKS (FTs):

- Children use kit parts with flat faces to construct nets. Practise making nets out of card, joining flat faces with masking tape to create 3-D shapes. Experiment with assembling in nets in numerous ways.
- Demonstrate skills and techniques of scoring, cutting out and assembling using pre-drawn nets. Then allow children to practise by constructing a simple box. Show how a window could be cut out and acetate sheet added.
- Demonstrate how to use different ways of stiffening and strengthening their shell structures e.g. folding and shaping, corrugating, ribbing and laminating. Provide opportunities for the children to practice these and to carry out tests to find out where their structure might need to be strengthened or stiffened.
- Children discuss and explore the graphics techniques and media that could be used to achieve the desired appearance of their products.
- Practise using computer-aided design (CAD) software to design the net, text and graphics for their products according to purposes.

10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)

- Develop a design brief with the children within a context which is authentic and meaningful.
- Discuss with the children the uses and purposes of their structures e.g. *What does the product need to do? Who is it aimed at? How will the purpose and user affect your design decisions? Agree on design criteria that can be used to guide the development and evaluation of children's products e.g. How will we know that we have designed and made successful products?*
- Ask the children to use annotated sketches and prototypes to develop, model and communicate their ideas for the product e.g. *What will you need to include in your design? How can you improve it? What materials will you use? How will you make sure your product works well and has the right appearance?*
- Ask children to identify the main stages of making and the appropriate tools and skills they learnt through focused tasks. Encourage the children to work with accuracy, using computer-aided design (CAD) where appropriate.
- Evaluate throughout and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.

11. RELATED LEARNING IN OTHER SUBJECTS:

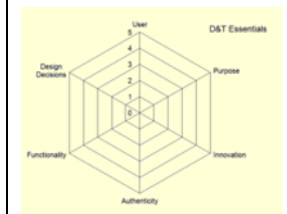
- **Science:** discuss the properties and suitability of materials for particular purposes.
- **Mathematics:** compare and sort common 2-D and 3-D shapes in everyday objects. Recognise 3-D shapes in different orientations and describe them.
- **English:** ask relevant questions to extend knowledge and understanding. Build their technical vocabulary. Write for real purposes and audiences.
- **Art and design:** use and develop drawing skills.

- **12. HEALTH AND SAFETY:** Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.

shell structure: a hollow structure with a thin outer covering

vertex: used to refer to the corners of a solid geometric shape, where edges meet


three dimensional shape, cube, length, width, breadth, capacity, marking out, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, lettering, text, graphics, decision, evaluating, design brief, design criteria, innovative, prototype



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Year 4		Vocabulary
Autumn	<p>Enquiry question: <u>How did life in Britain change when the Romans ruled?</u></p> <p><u>Design and make clothes for a Roman</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Textiles FOCUS: 2-D shape to 3-D product KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Have joined fabric in simple ways by gluing and stitching. Have used simple patterns and templates for marking out. Have evaluated a range of textile products <p>Designing</p> <ul style="list-style-type: none"> Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. Produce annotated sketches, prototypes, final product sketches and pattern pieces. <p>Making</p> <ul style="list-style-type: none"> Plan the main stages of making. Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. <p>Evaluating</p> <ul style="list-style-type: none"> Investigate a range of 3-D textile products relevant to the product. Test their product against the original design criteria and with the intended user. Take into account others' views. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Know how to strengthen, stiffen and reinforce existing fabrics. Understand how to securely join two pieces of fabric together. Understand the need for patterns and seam allowances. Know and use technical vocabulary relevant to the project. <ol style="list-style-type: none"> WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Caligae (Roman shoes/sandals), focal (scarf), tunic, loculus (satchel), <u>paludamentum</u>, (cloak or cape fastened at one shoulder, worn by military commanders) INTENDED USERS: themselves, friends, other - specify PURPOSE OF PRODUCTS: museum display, other – specify PROJECT TITLE: Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs): <ul style="list-style-type: none"> Children investigate a range of shoes and sandals, scarfs, tunics etc that have a selection of stiches, joins, fabrics, finishing techniques and fastenings. Research Roman clothes and find out how they were made and what they were made from. If possible give children the opportunity to disassemble appropriate textiles products to gain an understanding of 3-D shape, patterns and seam allowances. Use questioning to develop understanding e.g. <i>What is its purpose? Which one is most suited to its purpose? What properties/characteristics does the fabric have? Why has this material been chosen? How has it been joined together? How effective are its fastenings? How has it been decorated? What are its measurements? How might you change the product?</i> 	<p>appliqué: means 'applied' - describes method of stitching/gluing patches onto fabric (originally to mend holes in worn clothes) to provide decoration.</p> <p>pattern/template: a shape drawn to exact shape and size and used to assist cutting out.</p> <p>Seam: a line of stitching that joins pieces of fabrics together.</p> <p>seam allowance: extra fabric allowed for joining together - usually 1.5cm.</p> <p>prototype: a model that is made to test whether a design will work.</p> <p>aesthetic: the way in which the product looks with the nature and expression of beauty.</p> <p>Fabric, names of fabrics and other materials, fastening, structure, finishing technique, strength, weakness, stiffening, stitch, user,</p>

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	<p>9. FOCUSED TASKS (FTs):</p> <ul style="list-style-type: none"> • Demonstrate a range of stitching techniques and allow children to practice sewing two small pieces of fabric together, demonstrating the use of, and need for, seam allowance. • Allow children to use a show they have taken apart to create a paper pattern using 2-D shapes. • Provide a range of materials – children to consider whether materials are suitable for the chosen purpose and user. • Use questioning to develop understanding e.g. <i>Which joining techniques are the strongest? Why? Which stitch is appropriate for the purpose? How can you stiffen your material? What is the purpose of the fastenings? Which one is most suited to the purpose and user? What decorative techniques have been used? What effect do they have?</i> <p>10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)</p> <ul style="list-style-type: none"> • Children to create a design brief, supported by the teacher, set within a context which is authentic and meaningful. Discuss the intended user, purpose and appeal of their product. Create a set of design criteria. • Ask children to sketch and annotate a range of possible ideas, constantly encouraging creative thinking. Produce mock-ups and prototypes of their chosen product. • Plan the main stage of making e.g. using a flowchart or storyboard. • Children to assemble their product using their existing knowledge, skills and understanding from IEAs and FTs. Encourage children to think about the aesthetics and quality finish of their product. • Evaluate as the process is undertaken and the final product in relation to the design brief and criteria. The product should be tested by the intended user and for its purpose and others views sought to help with identifying possible improvements. <p>11. RELATED LEARNING IN OTHER SUBJECTS:</p> <ul style="list-style-type: none"> • Science: physical properties of materials. Identify and compare the suitability of a variety of different materials for particular purpose. • Mathematics: nets of shapes and accurate measurements mm/cm. • English: asking and answering questions to develop understanding. Through discussion, participate actively initiating and responding to comments. Develop technical vocabulary. Give well-structured descriptions of e.g. finishing techniques. Consideration and evaluation of others' viewpoint. Written evaluation of their product, organizing it under e.g. headings, subheadings. • Art and design: investigate visual and tactile qualities of materials. Develop sketching techniques. • History: researching textile products from age being studied. <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	<p>purpose, design, model, evaluate, annotated sketch, functional, innovative, investigative, label, drawing, function, pattern pieces.</p>  <p>(STEM Cosy shoes planning)</p>
<p>Spring 2</p>	<p>Enquiry question: <u>Why would you visit Spain?</u> <u>Design and make a Spanish meal</u></p> <ol style="list-style-type: none"> 1. ASPECT OF D&T: Food technology 2. FOCUS: Healthy and varied diet 3. KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> • Knows some ways to prepare ingredients safely and hygienically. 	<p>Vocabulary appearance: how the food looks to the eye. texture: how the product feels in the mouth.</p>

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<ul style="list-style-type: none"> • Have some basic knowledge and understanding about healthy eating and The eatwell plate. • Have used some equipment and utensils and prepared and combined ingredients to make a product. <p>Designing</p> <ul style="list-style-type: none"> • Generate and clarify ideas through discussion with peers and adults to develop criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> • Plan the main stage of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately. <p>4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Sandwiches, wraps, rolls, pitta pockets</p> <p>5. INTENDED USERS: themselves, classmate, other - specify</p> <p>6. PURPOSE OF PRODUCTS: picnic, off-site, healthy living, celebration, other – specify</p> <p>7. PROJECT TITLE: Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.</p> <p>8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):</p> <ul style="list-style-type: none"> • Children investigate a range of food products e.g. the content of their lunchboxes over a week, a selection of food provided for them, food from a visit to a local shop. Link to the principles of a varied and healthy diet using The eatwell plate e.g. <i>What ingredients have been used? Which food groups do they belong to? What substances are used in the products e.g. nutrients, water and fibre?</i> • Carry out sensory evaluations on the contents of the food from e.g. a variety of bought food products such as a range of wraps or sandwiches. Record results, for example using a table. Use appropriate words to describe the taste/smell, texture, appearance e.g. <i>How do the sensory characteristics affect your liking of the food?</i> • Gather information about existing products available relating to your product. Visit a local supermarket and/or use the internet. • Find out how a variety of ingredients used in products are grown and harvested, reared, caught and processed e.g. <i>Where and when are the ingredients grown? Where do different meats/fish/ cheese/eggs come from? How and why are they processed?</i> <p>9. FOCUSED TASKS (FTs):</p> <ul style="list-style-type: none"> • Learn to select and use a range of utensils and use a range of techniques as appropriate to prepare ingredients hygienically including the bridge and claw technique, grating, peeling, chopping, slicing, mixing, spreading, kneading and baking. • Food preparation and cooking techniques could be practiced by making a food product using an existing recipe. • Discuss basic food hygiene practices when handling food including the importance of following instructions to control risk e.g. <i>What should we do before we work with food? Why is following instructions important?</i> <p>10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)</p> <ul style="list-style-type: none"> • Discuss the purpose of the products that the children will be designing, making and evaluating and who the products will be for. 	<p>sensory evaluation: evaluating food products in terms of the taste, smell, texture and appearance.</p> <p>preference test: trying different foods and deciding which you like best.</p> <p>processed food: ingredients that have been changed in some way to enable them to be eaten or used in food preparation and cooking</p> <p>Names of products, names of equipment, utensils, techniques and ingredients</p> <p>Texture, taste, sweet, sour, hot, spicy, smell, greasy, moist, cook, fresh, savoury</p> <p>Hygienic, edible, grown, reared, caught, frozen, tinned, seasonal, harvested, healthy/varied, diet</p>
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	<ul style="list-style-type: none"> Develop and agree on design criteria with the children within a context that is authentic and meaningful. This can include criteria relating to healthy eating and a varied diet e.g. <i>What do you need to consider to make it part of a balanced diet? How do we select the ingredients? How could we make it appealing to eat?</i> Ask children to generate a range of ideas encouraging realistic responses. Using discussion, annotated sketches and information and communication technology if appropriate, ask the children to develop and communicate their ideas. Ask children to consider the main stage in making the food product, before preparing/cooking the product including the ingredients and the utensils they need. Evaluate as the assignment proceeds and the final product against the intended purpose and user, reflecting on the design criteria previously agreed. Consider what others think of the product when considering how the work might be improved. <p>11. RELATED LEARNING IN OTHER SUBJECTS:</p> <ul style="list-style-type: none"> Science: using and developing skills of observing and questioning. Humans get nutrition from what they eat. Discuss changes of state if heat is used. Spoken language: developing relevant vocabulary e.g. sensory descriptors, names of utensils and techniques. Ask relevant questions to extend their knowledge. Consider and evaluate different viewpoints. Use discussion to develop understanding through exploring ideas. Mathematics: mass kg/g <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely and hygienically, using tools, equipment, techniques and ingredients appropriate to the task. Risk assessments should be carried out prior to undertaking this project, including whether there are children who are not permitted to taste or handle any food ingredients or products.</p>	
<p>Summer 2</p>	<p>Enquiry question: <u>How can I be a good citizen of the world</u> <u>Design and make a litter picker</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Mechanisms FOCUS: Lever and linkages KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Explored and used mechanisms such as flaps, sliders and levers. Gained experience of basic cutting, joining and finishing techniques with paper and card. <p>Designing</p> <ul style="list-style-type: none"> Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. Use annotated sketches and prototypes to develop, model and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> Order the main stages of making. Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. Select from and use finishing techniques suitable for the product they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> Investigate and analyse books, and where available, other products with lever and linkage mechanisms. Evaluate their own products and ideas against criteria and user needs, as they design and make. 	<p>Vocabulary</p> <p>mechanism: a device used to create movement in a product.</p> <p>lever: a rigid bar which moves around a pivot. Levers are used in many everyday products. In this project children will use card strips for levers and paper fasteners for pivots.</p> <p>linkage: the card strips joining one or more levers to produce the type of movement required. The term 'linkage' is also used to describe the lever and</p>

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<p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Know and use technical vocabulary relevant to the project. <p>4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? A litter picker, information book, poster, class display, greetings card, other -specify</p> <p>5. INTENDED USERS: themselves, friends, younger children, older children, teenagers, parents, grandparents, visitor to school, other - specify</p> <p>6. PURPOSE OF PRODUCTS: celebration event, information, pleasure, interests, hobbies, campaign, education, display, other – specify</p> <p>7. PROJECT TITLE: Design, make and evaluate a _____(product) for _____(user) for _____(purpose). To be completed by the teacher. Use the project title to set the scene for children’s learning prior to activities in 8, 9 and 10.</p> <p>8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):</p> <ul style="list-style-type: none"> • Children investigate, analyse and evaluate litter pickers, books, and where available other products which have a range of lever and linkage mechanisms. • Use questions to develop children’s understanding e.g. <i>Who might it be for? What is its purpose? What do you think will move? How will you make it move? What part moved and how did it move? How do you think the mechanism works? What materials have been used? How effective do you think it is and why? What else could move?</i> <p>9. FOCUSED TASKS (FTs):</p> <ul style="list-style-type: none"> • Demonstrate a range of lever and linkage mechanisms to the children using prepared teaching aids. • Use questions to develop children’s understanding e.g. <i>Which card strip is the lever? Which card strip is acting as the linkage? Which part of the system is the input and which part the output? What does the type of movement remind you of? Which are the fixed pivots and which are the loose pivots?</i> • Demonstrate the correct and accurate measuring, marking out, cutting, joining and finishing skills and techniques. • Children should develop their knowledge and skills by replicating one or more of the teaching aids. <p>10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)</p> <ul style="list-style-type: none"> • Develop a design brief with the children within a context which is authentic and meaningful. • Discuss with children the purpose of the products they will be designing and making and who the products will be for. Ask the children to generate a range of ideas, encouraging creative responses. Agree on design criteria that can be used to guide the development and evaluation of the children’s products. • Using annotated sketches and prototypes, ask the children to develop, model and communicate their ideas. • Ask the children to consider the main stages in making before assembling high quality products, drawing on the knowledge, understanding and skills learnt though IEAs and FTs. • Evaluate the final products against the intended user, drawing on the design criteria previously agreed. <p>11. RELATED LEARNING IN OTHER SUBJECTS:</p> <ul style="list-style-type: none"> • Spoken language: participate in discussion and evaluation of products with moving parts. Ask relevant questions to extend knowledge and understanding. Build technical vocabulary. Consider and evaluate different viewpoints. • Mathematics: use the vocabulary of position, direction and movement. Use a ruler to measure to the nearest cm, half cm or mm. • Art and design: use colour, pattern, line, shape. Use and develop drawing technique. <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	<p>linkage mechanism as a whole.</p> <p>slot: the hole through which a lever is placed to enable part of a picture to move.</p> <p>guide or bridge: a short card strip used to keep lever and linkage mechanisms in place and control movement.</p> <p>loose pivot: a paper fastener that joins card strips together.</p> <p>fixed pivot: a paper fastener that joins card strips to the backing card.</p> <p>system: a set of related parts or components used to create an outcome. Systems have an input, process and an output. In a lever and linkage mechanism, the ‘input movement’ is where the user pushes or pulls a card strip. The ‘output movement’ is where one or more parts of the picture move</p> <p>Linear, rotary, oscillating, reciprocating</p> <p>User, purpose, function</p>
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		<p>Prototype, design criteria, innovative, appealing, design brief</p> 
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Year 5		Vocabulary
Autumn	<p>Enquiry question: <u>Why are biomes important to the world? (Arctic/Antarctica/Polar regions)</u></p> <p><u>Electricity</u></p> <ol style="list-style-type: none"> ASPECT OF D&T: Electricity FOCUS: More complex switches and circuits KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Understanding of the essential characteristics of a series circuit and experience of creating a battery powered, functional, electrical product. Initial experience of using computer control software and an interface box or a standalone box, e.g. writing and modifying a program to make a light flash on and off. <p>Designing</p> <ul style="list-style-type: none"> Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost. Generate and develop innovative ideas and share and clarify these through discussion. Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. <p>Making</p> <ul style="list-style-type: none"> Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. Create and modify a computer control program to enable an electrical product to work automatically in response to change in the environment. <p>Evaluating</p> <ul style="list-style-type: none"> Continually evaluate and modify the working features of the product to match the initial design specification. Test the system to demonstrate its effectiveness for the intended user and purpose. Investigate famous inventors who developed ground-breaking electrical systems and components. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products. 	<p>modelling: to realise and manipulate ideas in a tangible form.</p> <p>open switch: when a switch is positioned such that electricity cannot flow through it.</p> <p>closed switch: when a switch is positioned such that electricity can flow through it.</p> <p>normally open: the term used to describe when a switch is in the off position, i.e. the switch is open and no electricity can flow when the button on not pressed.</p> <p>normally closed: the term used to describe</p>

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<ul style="list-style-type: none"> • Know and use technical vocabulary relevant to the product. 4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE?, vehicle alarm, security lighting system, alarm for valuable artefact, automatic nightlight, polar bear vicinity alarm, movement alarm for nature photographers, other - specify 5. INTENDED USERS: explorers, other - specify 6. PURPOSE OF PRODUCTS: safety, protection, security, detection, warning, comfort, illumination, other - specify 7. PROJECT TITLE: Design, make and evaluate a _____(product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10. 8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs): <ul style="list-style-type: none"> • Using research, discuss a range of relevant products that respond to changes in the environment using a computer control program such as automatic nightlights, alarm systems, security lighting e.g. <i>Who have the products been designed for and for what purpose? How and why is a computer control program used to operate the products? What input devices, e.g. switches, and output devices, e.g. bulbs have been used?</i> • Investigate electrical sensors such as light dependent resistors (LDAs) and a range of switches such as push-to-make switches, micro switches and reed switches. To gain an understanding of how they are operated by the user and how they work, ask the children to use each component to control a bulb in a simple circuit. Remind the children about the dangers of mains electricity. • Children could research famous inventors related to the project e.g. Thomas Edison – light bulb. 9. FOCUSED TASKS (FTs): <ul style="list-style-type: none"> • Through teacher demonstration and explanation, recap measuring, marking out, cutting and joining skills with construction materials that children will need to create their electrical products. • Demonstrate and enable children to practice methods for making secure electrical connections e.g. using automatic wire strippers, twist and tape electrical connections, screw connections and connecting blocks. • Drawing on science understanding, ask children to explore a range of electrical systems that could be used to control their products, including a simple series circuit where a single output device is controlled, a series circuit where two output devices are controlled by one switch and, where appropriate, parallel circuits where two output devices are controlled independently by two separate switches. • Drawing on related computing activities, ensure that children can write computer control programs that include inputs, outputs and decision making. Test out the program using electrical components connected to interface boxes or standalone boxes. • Teach children how to avoid making short circuits. 10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA) <ul style="list-style-type: none"> • Develop an authentic and meaningful design brief with the children. • Ask the children to generate innovative ideas by drawing on research and develop a design specification for their product, carefully considering the purpose and needs of the intended user. • Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. Drawings should indicate the design decisions made, including the location of the electrical components and how they work as a system with an input, process and an output. • Produce detailed step-by-step plans and lists of tools, equipment and materials needed. If appropriate allocate tasks within a team. • Make high quality products, applying knowledge, understanding and skills from IEAs and FTs. Create and modify a computer control program to enable the product to work automatically in response to changes in the environment. • Critically evaluate throughout and the final product, comparing it to the original design specification. Test the system to demonstrate its effectiveness for the intended user and purpose. 11. RELATED LEARNING IN OTHER SUBJECTS: <ul style="list-style-type: none"> • Science: ask relevant questions, give well-structured descriptions and explanations. Build technical vocabulary. Apply knowledge and understanding of circuits, switches, conductors and insulators. • Mathematics: apply knowledge and skill to carry out accurate measuring using standard units ie cm/mm 	<p>when a switch is in the on position i.e. the switch is closed and electricity can flow when the button is not pressed</p> <p>computer control input: when a switch, such as a micro switch, sends a signal to a computer control box to activate a sequence of events such as a buzzer or light being used to attract attention or alert people.</p> <p>output devices: components that produce an outcome e.g. bulbs and buzzers.</p> <p>input devices: components that are used to control an electrical circuit e.g. switches or sensors.</p> <p>Series circuit, parallel circuit, names of switches and components, system, monitor control, program, flowchart</p> <p>Function, innovative, design specification, design brief, user, purpose</p>
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	<ul style="list-style-type: none"> ● Computing: use technologies for research purposes and be discerning when evaluating digital content. Design, write and debug programs that accomplish specific goals, including controlling physical systems. Use sequence, selection, and repetition in programs. Work with variables and various forms of input and output. ● Spoken language: ask relevant questions, give well structured descriptions and explanations. Build technical vocabulary. <p>HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	
Spring	<p>Enquiry question: <u>Why would you visit London?</u></p> <p>Structures</p> <ol style="list-style-type: none"> ASPECT OF D&T: Structures FOCUS: Frame structures KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> ● Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials. ● Basic understanding of what structures are and how they can be made stronger, stiffer and more stable. <p>Designing</p> <ul style="list-style-type: none"> ● Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. ● Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. ● Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. <p>Making</p> <ul style="list-style-type: none"> ● Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. ● Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. ● Use finishing and decorative techniques suitable for the product they are designing and making. <p>Evaluating</p> <ul style="list-style-type: none"> ● Investigate and evaluate a range of existing frame structures. ● Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. ● Research key events and individuals relevant to frame structures. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> ● Understand how to strengthen, stiffen and reinforce 3-D frameworks. ● Know and use technical vocabulary relevant to the project. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE?, skyscrapers, other - specify INTENDED USERS: themselves, younger children, older children, teenagers, parents, school, teachers, friends, other - specify PURPOSE OF PRODUCTS: meeting place, business, educational, environmental, lifestyle, other - specify PROJECT TITLE: Design, make and evaluate a _____(product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs): <ul style="list-style-type: none"> ● Children investigate and make annotated drawings of a range of structures e.g. The Gherkin, Shard, Queen Elizabeth Tower (Big Ben), Tower of London, Tate Gallery. Use photographs, visit to London and web-based research to extend the range e.g. How well does this structure meet users' needs and purposes? 	<p>Vocabulary</p> <p>modelling: the process of making a 3-D representation of a structure or product.</p> <p>compression: the application of pressure to squeeze an object.</p> <p>strut: a part of a structure under compression.</p> <p>tension: a force pulling on a material or structure.</p> <p>tie: a part of a structure under tension.</p> <p>diagonal: a straight line that goes from one corner to another inside a shape.</p> <p>horizontal: a line that is parallel to the ground.</p>

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Why were materials chosen? What methods of construction have been used? How has it been strengthened, reinforced and stiffened? How does the shape of the structure affect its strength? How innovative is the design? When was it built? Who designed it? Who built it? Where is it built?

- Children could research key events and individuals related to their study of structures e.g. Norman Foster – a designer of Gherkin, Christopher Wren – designer of St Paul's Cathedral, Renzo Piano – The Shard, Charles Barry – Houses of Parliament.
- 9. FOCUSED TASKS (FTs):**
- Use spaghetti and marshmallows to build a structure. What arrangement and positions work best?
 - Use a construction kit consisting of plastic strips and paper fasteners to build 2-D frameworks. Compare the strength of square frameworks with triangular frameworks. Ask the children to reinforce square frameworks using diagonals to help develop an understanding of using triangulation to add strength to structure.
 - Demonstrate how paper tubes can be made from rolling sheets of newspaper diagonally around pieces of e.g. dowel. Ask children to use these tubes and masking tape or paper straws with pipe cleaners to build 3-D frameworks such as cubes, cuboids and pyramids. *How could each of the frameworks be reinforced and strengthened?*
 - Demonstrate the accurate use of tools and equipment. Develop skills and techniques using junior hacksaws, G-clamps, bench hooks, square section wood, card triangles and hand drills to construct wooden frames, as appropriate.
 - Demonstrate skills and techniques for accurately joining framework materials together e.g. paper straws, square sectioned wood. Ask children to practice these, mounting their joints onto card for future reference.
- 10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)**
- Discuss the brief of designing and making a small-scale structure based on buildings in London. *What materials will you use? How will it be joined? How will it be reinforced? How will it be finished?* Children should be encouraged to generate ideas, drawing on their research. Ask children to develop a simple design specification to guide their thinking.
 - Children should produce a detailed, step-by-step plan, listing tools and materials.
 - Children's sketches should be annotated with notes to help develop and communicate their ideas.
 - Encourage children to model their ideas first using materials such as a pen, card and paper straws e.g. *How will you make it stable? How will it stand up? How could you make it stronger? Where are the weak points? How could you reinforce them? What tools and materials will you need? How can you improve the design?*
 - Encourage children to make their products with accuracy. They should regularly evaluate their work and their completed product, drawing on their design specification, and thinking about the intended purpose and user.
- 11. RELATED LEARNING IN OTHER SUBJECTS:**
- **Science:** compare and group together everyday materials on the basis of their properties.
 - **Mathematics:** identify 3-D shapes, including cubes and other cuboids, from 2-D representations. Recognise, describe and build 3-D shapes. Apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm.
 - **Spoken language:** ask relevant questions, formulate and express opinions, give well-structured descriptions and explanations. Use relevant strategies to build their vocabulary.
 - **Computing:** use technologies for research purposes and be discerning when evaluating digital content.
 - **Art and design:** use and develop drawing skills.

vertical: a line that is at right angles to the ground.

triangulation: the use of triangular shapes to strengthen a structure.

frame structure: a structure made from thin components e.g. tent frame. stiffen, strengthen, reinforce, stability, shape, join

design specification, design brief, prototype, annotated sketch, purpose, user, innovation, research



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<p>Summer</p>	<p>Enquiry question: <u>Why are biomes important to the world? (Rainforest)</u> <u>Create a textile product to sell in support of WWF/Save the rainforest</u></p> <ol style="list-style-type: none"> 1. ASPECT OF D&T: Textiles 2. FOCUS: Combining different fabric shapes 3. KEY LEARNING: Prior learning <ul style="list-style-type: none"> • Experience of basic stitching, joining textiles and finishing techniques. • Experience of making and using simple pattern pieces. Designing <ul style="list-style-type: none"> • Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate compute aided design. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. Making <ul style="list-style-type: none"> • Produce detailed lists of equipment and fabrics relevant to their tasks. • Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and costs. Evaluating <ul style="list-style-type: none"> • Investigate & analyse textile products linked to their final product. • Compare the final product to the original design specification. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. Technical knowledge and understanding <ul style="list-style-type: none"> • A 3-D textiles product can be made from a combination of accurately made pattern pieces, fabric shapes & different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate. 4. WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Tote bag, hat, pencil case, other - specify 5. INTENDED USERS: themselves, younger children, older children, teenagers, parents, school, teachers, friends, other - specify 6. PURPOSE OF PRODUCTS: educational, environmental, lifestyle, other - specify 7. PROJECT TITLE: Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10. 8. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs): <ol style="list-style-type: none"> 13. Children investigate, analyse and evaluate a range of existing products which have been produced by combining shapes. Investigate work by designers and their impact on fabrics and products. Use questions to develop children's understanding e.g. <i>Is the product functional or decorative? Who would use this product? What is its purpose? What design decisions have been made? Do the textiles used match the intended purpose? What components have been used to enhance the appearance? To what extent is the design innovative?</i> 14. Children investigate and analyse how existing products have been constructed. Children disassemble a product and evaluate what the fabric shapes look like, how the parts have been joined, how the product has been strengthened and stiffened, what fastenings have been used and why. 15. Children investigate properties of textiles through investigation e.g. exploring insulating properties, water resistance, wear and strength of textiles. 9. FOCUSED TASKS (FTs): 	<p>appliqué: means 'applied' - describes method of stitching/gluing patches onto fabric (originally to mend holes in worn clothes) to provide decoration.</p> <p>pattern/template: a shape drawn to exact shape and size and used to assist cutting out.</p> <p>Seam: a line of stitching that joins pieces of fabrics together.</p> <p>seam allowance: extra fabric allowed for joining together - usually 1.5cm.</p> <p>prototype: a model that is made to test whether a design will work.</p> <p>aesthetic: the way in which the product looks with the nature and expression of beauty.</p>

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- Develop skills of threading needles and joining textiles using a range of stitches. This activity must build upon children's earlier experiences of stitches e.g. improving appearance and consistency of stitches and introducing new stitches.
- Develop skills of sewing textiles by joining right side together and making seams. Children should investigate how to sew and shape curved edges by snipping seams, how to tack or attach wadding or stiffening and learn how to start and finish off a row of stitches.
- Develop skills of 2-D paper pattern making using grid or tracing paper to create a 3-D dipryl mock-up of a chosen product. Remind/teach how to pin a pattern on to fabric ensuring limited wastage, how to leave a seam allowance and different cutting techniques.
- Develop skills of computer-aided design (CAD) by using on-line pattern making software to generate pattern pieces. Investigate using art packages on the computer to design prints that can be applied to textiles using iron transfer paper

10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)

- Set an authentic and meaningful design brief. Children generate ideas by carrying out research using e.g. surveys, interviews, questionnaires and the web. Children develop a simple design specification for their product/
- Communicate ideas through detailed, annotated drawings from different perspectives and/or CAD. Drawings should indicate design decisions made, the methods of strengthening, the type of fabrics to be used and the types of stitching that will be incorporated.
- Produce step-by-step plans, lists of tools, equipment, fabrics and components needed. Allocate tasks within a team if appropriate.
- Make high quality products applying knowledge, understanding and skills from IEAs and FTs. Children use a range of decorating techniques to ensure a well-finished final product that matches the intended user and purpose.
- Evaluate both as the children proceed with their work and the final product in use, comparing the final product to the original design specification. Critically evaluate the quality of the design, the manufacture, functionality, innovation shown and fitness for intended user and purpose, considering others' opinions. Communicate the evaluation in various forms e.g. writing for a particular purpose, giving a well-structured oral evaluation, speaking clearly and fluently.

11. RELATED LEARNING IN OTHER SUBJECTS:

- **Science:** working scientifically investigating properties of fabrics. Children plan different types of scientific enquiries to answer questions.
- **Mathematics:** apply knowledge of how 2-D nets can be formed into 3-D shapes; apply skills of accurate measuring using standard units i.e. cm/mm.
- **English:** ask questions, formulate, articulate and justify answers, arguments and opinions. Consider and evaluate different viewpoints
- **Art and design:** use and apply drawing skills.

- 12. **HEALTH AND SAFETY:** Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.

Fabric, names of fabrics and other materials, fastening, structure, finishing technique, strength, weakness, stiffening, stitch, user, purpose, design, model, evaluate, annotated sketch, functional, innovative, investigative, label, drawing, function, pattern pieces.



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Year 6			Vocabulary
Autumn	<p>Enquiry question: What mattered to the Vikings?</p> <ol style="list-style-type: none"> ASPECT OF D&T: Mechanical systems FOCUS: Cams KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Experience of axles, axle holders and wheels that are fixed or free moving. Basic understanding of different types of movement. Experience of cutting and joining techniques with a range of materials including card, plastic and wood. An understanding of how to strengthen and stiffen structures. <p>Designing</p> <ul style="list-style-type: none"> Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. Develop a simple design specification to guide their thinking. Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. <p>Making</p> <ul style="list-style-type: none"> Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. <p>Evaluating</p> <ul style="list-style-type: none"> Compare the final product to the original design specification. Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work. Investigate famous manufacturing and engineering companies relevant to the project. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> Understand that mechanical systems have an input, process and output. Understand how cams can be used to produce different types of movement and change the direction of movement. Know and use technical vocabulary relevant to the project. <ol style="list-style-type: none"> WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE? Viking- themed boat incorporating cam-driven components with oscillating, rotating or reciprocating movement, other - specify INTENDED USERS: peers, siblings, younger children, older children, specific individuals, other -specify PURPOSE OF PRODUCTS: entertainment, pleasure, play, educational, interests and hobbies, other - specify. PROJECT TITLE: Design, make and evaluate a _____(product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10. INVESTIGATE AND EVALUATE ACTIVITIES (IEAs): <ul style="list-style-type: none"> Discuss with the children different types of movement: rotating, oscillating and reciprocating. Make simple models of different types of cams or have toys in which the cam mechanisms can be seen. Children investigate, analyse and evaluate existing products linked to the chosen 	<p>rotary motion: movement that goes round</p> <p>oscillating motion: moving to and fro around a pivot point, as in a lever</p> <p>reciprocating motion: backwards and forwards movement in a straight line, as a slider.</p> <p>cam: a mechanism that change one sort of movement to another. Cams can be an off-centre wheel or a specially shaped wheel.</p> <p>follower: the device that follows the movement of the cam: a lever or a slider.</p> <p>slider: a piece of rigid material that moves backwards and forwards in a straight line creating reciprocating motion.</p> <p>guide: a piece of material used to guide the movement of another.</p>	

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project. (See Twinkl Cams Mechanism Presentation) Use videos and photographs of products that cannot be explained through first-hand experience.

- Encourage children to look for different types of movement in the home and in school.
- Use observational drawings and questions to develop understanding of each product in the handling collection and those that children have researched e.g. *How innovative is the product? What design decisions have been made? What type of movement can be seen? What types of mechanical components are used and where are they positioned? What are the input, process and output of the system? How well does the product work? Why have the materials and components been chosen? How well has it been designed? How well has it been made?*
- Children could research engineering and manufacturing companies that are relevant to the product they are designing e.g. car engine manufacturers.

9. FOCUSED TASKS (FTs):

- Give children pre-cut cams made from MDF or wooden wheels to mount on a piece of board and observe their movement with a follower.
- Demonstrate how to use a hand drill safely to make an off-centre cam and position it accurately in a housing. Ensure children secure the wheel with a G-clamp and use a piece of scrap wood under the wheel to avoid drilling through the bench hook or table. Stress the importance of measuring accurately and checking before cutting and holes or gluing. It is important to line up the cam and follower otherwise the mechanism may not work smoothly. *How high will the cam lift the follower?*
- Develop measuring, marking, cutting, shaping and joining skills using junior hacksaws, g-clamps, bench hooks, square section wood, card triangles and hand drills to construct wooden frames or card housings, as appropriate. Demonstrate the accurate and safe use of tools and equipment.

10. DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)

- Develop an authentic and meaningful design brief with the children.
- Children generate innovative ideas by carrying out research including surveys, interviews and questionnaires and develop a design specification for their product, carefully considering the purpose and intended user for their product.
- Communicate ideas through detailed, annotated drawings from different views and/or exploded diagrams. The drawings should indicate the design decisions made, including the location of the components, how they work as a system and the appearance and finishing techniques for the product.
- Produce detailed step-by-step plans and lists of tools, equipment and materials needed. If appropriate allocate tasks within a team.
- Make high quality products, applying knowledge, understanding and skills from IEAs and FTs. Children should use a range of decorative finishing techniques to ensure a well finished final product that matches the intended user and purpose.
- Evaluate throughout and the final product in use, comparing it to the original design specification. Critically evaluate the quality of the design, the manufacture, functionality, innovation shown and fitness for the intended user and purpose.

11. RELATED LEARNING IN OTHER SUBJECTS:

- Science: Recognise that some mechanisms, including cams, allow a smaller force to have a greater effect. Identify and compare the suitability of a variety of everyday materials for particular uses.
- Mathematics: Understand ratios. Apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. Use mathematical vocabulary to describe position, direction and movement.

spacer: a piece of material used to create extra space to allow moving parts to move freely.

crank, structure, dowel, shaft, annotated drawings, exploded diagrams, mechanical system, design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief



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	<ul style="list-style-type: none"> Spoken language: Ask relevant questions, formulate, and express opinions, give well-structured descriptions and explanations Listen and respond appropriately, articulate and justify answers, arguments and opinions. Consider and evaluate different viewpoints.. Use relevant strategies to build their vocabulary. Art and design: Use and apply drawing skills. Use techniques with colour, pattern, texture, line and shape. Computing: Use search technologies for research purposes and be discerning when evaluating digital content. <p>12. HEALTH AND SAFETY: Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.</p>	
<p>Summer</p>	<p>Enquiry question: Why would you visit Mexico?</p> <ol style="list-style-type: none"> ASPECT OF D&T: Food technology FOCUS: Celebrating culture and seasonality KEY LEARNING: <p>Prior learning</p> <ul style="list-style-type: none"> Have hygiene knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients. <p>Designing</p> <ul style="list-style-type: none"> Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> Write a step-by-step recipe, including a list of ingredients, equipment and utensils. 	<p>Vocabulary</p> <p>finishing: related to the appearance of the product – shape, decoration and colour.</p> <p>rubbing in: rubbing the dry ingredients together with the fat, lifting to put air into the mixture, so that it resembles fine breadcrumbs</p>

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- Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.
- Make, decorate and present the food product appropriately for the intended user and purpose.

Evaluating

- Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.
- Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.
- Understand how key chefs have influenced eating habits to promote varied and healthy diets.

Technical knowledge and understanding

- Know how to use utensils and equipment including heat sources to prepare and cook food.
 - Understand about seasonality in relation to food products and the source of different food products.
 - Know and use relevant technical and sensory vocabulary
4. **WHAT COULD CHILDREN DESIGN, MAKE AND EVALUATE?** Mexican- themed food, other - specify
 5. **INTENDED USERS:** peers, parents, visitors, other -specify
 6. **PURPOSE OF PRODUCTS:** festival, celebration, special event, for sale, food for travel, picnic, visit, other - specify.
 7. **PROJECT TITLE:** Design, make and evaluate a _____(product) for _____(user) for _____(purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 8, 9 and 10.
 8. **INVESTIGATE AND EVALUATE ACTIVITIES (IEAs):**
 - Children use first hand and secondary sources to carry out relevant research into existing products to include personal/cultural preferences, ensuring a healthy diet, meeting dietary needs and the availability of locally sources/seasonal/organic ingredients. This could include a visit to a local bakery, farm, farm, shop, market or supermarket e.g. *What ingredients are sources locally/in the UK/from overseas? What are the key ingredients needed to make a particular product? How have ingredients been processed? What is the nutritional value of a product?*
 - Children carry out sensory evaluations of a variety of existing food products and ingredients relating to the project. The ingredients could include those that could be added to a basic recipe such as herbs, spices, vegetables or cheese. These could be locally sourced, seasonal, Fair Trade or organic. Present results in e.g. table/graphs/charts and by using evaluative writing.
 - Use a range of questions to support children's ability to evaluate food ingredients and products e.g. *What ingredients help to make the product spicy/crisp/crunchy etc? What is the impact of added ingredients/finishes/shapes on the finished product?*
 - Research key chefs and how they have promoted seasonality, local produce and healthy eating.
 9. **FOCUSED TASKS (FTs):**
 - Demonstrate how to measure out, cut, shape and combine e.g. knead, beat, rub and mix ingredients.
 - Demonstrate how to use appropriate utensils and equipment that the children may use safely and hygienically.
 - Techniques could be practised following a basic recipe to prepare and cook a savoury food product.
 - Ask questions about which ingredients could be added in a basic recipe such as types of flour, seeds, garlic, vegetables. Consider texture, taste, appearance and smell.
 - When using a basic dough recipe, explore making different shapes to change the appearance of the food product e.g. *Which shape is most appealing and why?*
 10. **DESIGN, MAKE AND EVALUATE ASSIGNMENT (DMEA)**
 - Develop a design brief and simple design specification with the children within a context that is authentic and meaningful. This can include design criteria relating to nutrition and healthy eating.

knead: pulling and squeezing dough to make it smooth

bran: the hard protective shell of a grain of wheat

dough: a mixture of flour, yeast and water before it is cooked.

endosperm: the store of food inside a seed

germ: part of the seed where the root and shoots grow from

yeast: a tiny plant which makes bubbles of carbon dioxide when mixed with flour and warm water

unleavened bread: flat bread where yeast has not been added

ingredients, flour, wholemeal, baking soda, spice herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance,

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- Discuss the purpose of the products that the children will be designing, making and evaluating and who the products will be for.
- Ask children to generate a range of ideas encouraging innovative responses. Agree on design criteria that can be used to guide the development and evaluation of the children's product.
- Using annotated sketches, discussion and information and communication technology if appropriate, ask children to develop and communicate their ideas.
- Ask children to record the steps, equipment, utensils and ingredients for making the food product drawing on the knowledge, understanding and skills learnt through IEAs and FTs
- Evaluate the work as it progresses and the final product against the intended purpose and user reflecting on the design specification previously agreed.

11. RELATED LEARNING IN OTHER SUBJECTS:

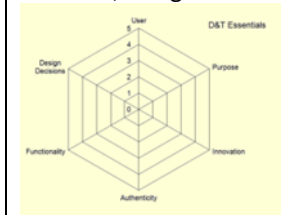
- Science: using and developing skills of observing, questioning, changing state of ingredients. Recognise the impact of diet on the way their bodies function.
- Mathematics and computing: making use of mathematical and computing skills to present results of sensory evaluations graphically, handling and interpreting data. Measuring mass kg/g. Understand and use approximate equivalences between metric and imperial units.
- Spoken language: developing relevant vocabulary including sensory descriptors. Give well structured explanations. Articulate and justify answers and opinions. Listen to and respond to adults and peers.
- Art and design:

11 HEALTH AND SAFETY: Pupils should be taught to work safely and hygienically, using tools, equipment, techniques and ingredients appropriate to the task. Prior to undertaking this project risk assessments should be carried out, including identifying whether there are children who are not permitted to taste and handle any food ingredients or products.

savoury, source, seasonality

utensils, combine, fold, stir, pour, mix, whisk, beat, roll out, shape, sprinkle, crumble

design specification, innovative, research, evaluate, design brief



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