Pre-school Design and Technology Planning Overview

Development Matters 2020

Ongoing provision throughout the year –

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.

	1st half term	2nd half term
Autumn	Experience building with a variety of resources: Duplo, wooden blocks, happy land, Playmobil etc. Teach – how to build and assign meaning to what is built. Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.	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. Experience junk modelling materials- glue and masking tape for sticking pieces of scrap materials onto old cardboard boxes, hammers and nails, glue, paperclips and fasteners.
Spring	Provide children with a range of materials for children to construct with. Encourage them to think about and discuss what they want to make. Discuss problems and how they might be solved as they arise. Reflect with children on how they have achieved their aims. Teach constructing. What do we want to build? What are we going to use? How are we going to build it? Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue Provide a range of materials and tools and teach children to use them with care and precision	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. Provide free exploration of the materials used previously. Allow children to engage independently. Provide a range of materials and tools. Promote independence.
Summer	Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills. Build models and return to them to add more over a period of time. Children learn to work together on building a bigger project.	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. Provide free exploration of the materials used previously. Allow children to engage independently. Provide a range of materials and tools. Promote independence.

Reception D&T Planning Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16
Autumn	Home visits	Home visits/ 'Getting to know you' activities	**Baseline assessment**		**Junk modelling (6 sessions)**											
Retrieval					Junk modelling station in creative areas in the classroom, building blocks and construction areas, junk modelling linking to story book (Colour Monster).				Small world and role play areas to have soup making materials, pretend food, bowls and spoons. Do now challenges link to writing a recipe/what would you like to put in your soup? Designing soup on whiteboards, writing areas resources providing children to write recipes. Have a range of recipe books in book corners.							
Enrichment									Food – Making Soup							
Spring	**Book marks (6 Sessions)**															
Retrieval	Link to World Book Day the importance of reading. Motivate children to read. Children to design a bookmark as a do now task. Children to have access to make their own bookmarks in creative area in the classroom.						Link to the Easter story (UTW) Why do we celebrate Easter? Retrieval on different celebrations in the world.									
Enrichment																
Summer	**Boats (6 Sessions)**															
Retrieval	Link back to Autumn 2 to making soup. Think about healthy and unhealthy foods. Role play/small world. Do now challenges focusing on healthy and unhealthy foods, designing a salad (What would you put in your rainbow salad?).				Link to interesting investigations whole school topic. Retrieval back to Autumn 1 with junk modelling. Water play outside with a box of junk modelling for children to explore. Do now tasks focusing on design boats.											
Enrichment	Making a rainbow salad.															

Year 1 Design and Technology Planning Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16
Autumn	**Mechanisms - Moving book** (4 Lessons)															
Retrieval	What is healthy and unhealthy? Do now tasks to draw/design a healthy meal, organise what is healthy and unhealthy? Activities in classroom what is a fruit and vegetable?								Link to seasonal/RE celebrations Do now tasks to design a moving picture/product.							
Enrichment	Food Smoothies															
Spring	**Structures – Constructing a Windmill (4 lessons)**															
Retrieval	Box of mechanisms in the classroom for children to explore. Photos in construction areas for children to look at mechanisms around the world that we use. Do now tasks focusing labelling mechanisms, designing a mechanism. Linked to World Book Day- look at books that having moving mechanisms. Children to design their own moving book/picture.						Photographs in the classroom of different structures that children may have seen. Give children the opportunity to create a structure or windmill in the classroom with resources. Look back at junk modelling and materials. Do now challenges to draw and design a windmill.									
Enrichment																
Summer	**Textiles – Puppets (4 lessons)**															
Retrieval	Do now challenge to design a puppet. Children to access and explore puppets on a focus story in the classroom. Puppet show in provision or outside. Reflect back on materials from reception and sewing.					Do now challenges focus on designing a car and labelling the parts. Think about materials and the appropriate materials from structure lessons during Spring 2. Allow children to access wheels and axles in the classroom. Photographs of designs of moving vehicles looking at the wheels and axles.										
Enrichment						Baking cakes in the Healthy Hut										

Year 2 Design and Technology Planning Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16
Autumn	**Mechanisms – Fairground Wheel (5 Lessons)**															
Retrieval	Link back to previous learning on mechanisms from previous year. What is a mechanism? Do now challenge to label the parts of a fairground wheel. Photographs of mechanisms, objects with mechanisms to show children how do they work.															
Enrichment	Apple Crumble in the Healthy Hut															
Spring	**Structures- Baby Bear's Chair (4 Lessons)**															
Retrieval	Do now challenge to plan a structure (Baby Bear's Chair) what materials would you use? Link back to previous learning in EYFS and Year 1 on junk modelling and materials.						Link back to previous learning from EYFS and Year 1, what is healthy and unhealthy? Do now tasks to sort and arrange healthy and unhealthy foods. What is a fruit and a vegetable?									
Enrichment																
Summer	**Textiles- Pouches (4 Lessons)**															
Retrieval	Do now challenge design a pouch and think about what materials are needed to make a pouch. Link back to previous learning on threading and sewing from EYFS and Year 1.				Link back to previous learning on mechanisms from Autumn 1. What is a mechanism? Do now challenge to label the parts of the moving monster/mechanism. Photographs of mechanisms, objects with mechanisms to show children how do they work.											
Enrichment					Tortilla pizzas in the Healthy Hut											

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<tr>
<td rowspan="2">YEAR 3
Design and Technology

<u>CQ Threshold Concepts</u>

TC1: Master practical skills

TC2: Design, make, evaluate and improve

TC3: Take inspiration from design throughout history.</td>
<td>2.1 What is design and technology?
Design inspiration, design process

TC2/M2: Design with purpose by identifying opportunities to design.
TC3/M2: Identify some of the great designers in all of the areas of study to generate ideas for designs</td>
<td>2.4 Linked levers – Mechanisms: Fold away safety barrier
Technical knowledge, practical knowledge, design inspiration, design process

Builds upon Y2 prior learning on levers

TC1/M2: Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).
TC1/M2: Select appropriate joining techniques.</td>
<td>2.6 Frame Structures: Truss bridge
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M2: Cut materials accurately and safely by selecting appropriate tools.
Measure and mark out to the nearest millimetre.
TC1/M2: Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).
TC1/M2: Select appropriate joining techniques.</td>
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<tr>
<td colspan="3">TC2/M2: Design with purpose by identifying opportunities to design.
TC2/M2: Make products by working efficiently (such as by carefully selecting materials).
TC2/M2: Refine work and techniques as work progresses, continually evaluating the product design.
TC3/M2: Improve upon existing designs, giving reasons for choices.
TC3/M2: Disassemble products to understand how they work.
TC3/M2: Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.</td>
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<tr>
<td>Food Technology with Mrs Cooper
(6 week block)</td>
<td colspan="3">Fruit skewers/smoothies, Welsh Rarebit, Rock Cakes, French bread pizza, Sandwiches and wraps

TC1/M2: Prepare ingredients hygienically using appropriate utensils.
TC1/M2: Measure ingredients to the nearest gram accurately.
TC1/M2: Follow a recipe.
TC1/M2: Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).</td>
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YEAR 4
Design and Technology

CQ Threshold Concepts

TC1: Master practical skills

TC2: Design, make, evaluate and improve

YEAR 5

Design and Technology

CQ Threshold Concepts

TC1: Master practical skills

TC2: Design, make, evaluate and improve

TC3: Take inspiration from design throughout history.

3.5 Frame Structures: Tetrahedral kite
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M3: Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).

TC1/M3: Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).

2.5 Pneumatics – Mechanisms: Hydraulic lifting device (litter picker)
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M2: Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).
TC1/M2: Cut materials accurately and safely by selecting appropriate tools.
Measure and mark out to the nearest millimetre.
TC1/M2: Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).
TC1/M2: Select appropriate joining techniques.

TC2/M3: Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).
TC2/M3: Make products through stages of prototypes, making continual refinements.
TC2/M3: Ensure products have a high quality finish, using art skills where appropriate.
TC2/M3: Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.

TC3/M3: Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.
TC3/M3: Create innovative designs that improve upon existing products.
TC3/M3: Evaluate the design of products so as to suggest improvements to the user experience.

2.2 App Control: Lifestyle helper toy
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M2: Control and monitor models using software designed for this purpose.
TC2/M2: Use software to design and represent product designs.

2.3 Paper Circuits – Electronics: Paper circuit greeting card
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M2 Create series and parallel circuits

2.6 Frame Structures: Shell structures
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M2: Cut materials accurately and safely by selecting appropriate tools.
Measure and mark out to the nearest millimetre.
TC1/M2: Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as

			slots or cut outs). TC1/M2: Select appropriate joining techniques.
			TC2/M2: Design with purpose by identifying opportunities to design. TC2/M2: Make products by working efficiently (such as by carefully selecting materials). TC2/M2: Refine work and techniques as work progresses, continually evaluating the product design. TC3/M2: Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. TC3/M2: Improve upon existing designs, giving reasons for choices. TC3/M2: Disassemble products to understand how they work.

Food Technology with Mrs Cooper (6 week block)	**Breakfast frittata, Leek and Mushroom croustades, Fish cakes, Broccoli and basil (or seasonal) soup, Spicy chickpea pot** TC1/M2: Prepare ingredients hygienically using appropriate utensils. TC1/M2: Measure ingredients to the nearest gram accurately TC1/M2: Follow a recipe. TC1/M2: Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).

Food Technology with Mrs Cooper (6 week block)	**Fruit crumble and custard, Chilli bean potato, Leek and potato/seasonal pumpkin soup, Macaroni Cheese, Fish Pie** TC1/M3: Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). TC1/M3: Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. TC1/M3: Demonstrate a range of baking and cooking techniques. TC1/M3: Create and refine recipes, including ingredients, methods, cooking times and temperatures.

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<tr><td rowspan="2">YEAR 6

Design and Technology

<u>CQ Threshold Concepts</u>

TC1: Master practical skills

TC2: Design, make, evaluate and improve

TC3: Take inspiration from design throughout history.</td><td>2.2 Arch Structures:
Model school
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M3: Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).
TC1/M3: Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).</td><td>3.6 Pulleys and Gears:
Aerial tramway
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M2: Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).
TC1/M3: Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).
TC1/M3: Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).</td><td>3.7 Cams:
Automaton toy
Technical knowledge, practical knowledge, design inspiration, design process

TC1/M3: Convert rotary motion to linear using cams.
TC1/M3: Use innovative combinations of electronics (or computing) and mechanics in product designs.</td></tr>
<tr><td colspan="3">TC2/M3: Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).
TC1/M3: Make products through stages of prototypes, making continual refinements.
TC1/M3: Ensure products have a high quality finish, using art skills where appropriate.
TC1/M3: Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
TC3/M3: Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.
TC1/M3: Create innovative designs that improve upon existing products.
TC1/M3: Evaluate the design of products so as to suggest improvements to the user experience.</td></tr>
<tr><td>Food Technology with Mrs Cooper
(6 week block)</td><td colspan="3">Tomato and basil bread and salad dressing/Harvest Veg/seasonal pumpkin soup, Spicy potato wedges and chicken strips, Tuna and Broccoli pasta bake, Chocolate and Beetroot muffins
TC1/M3: Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).
TC1/M3: Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.
TC1/M3: Demonstrate a range of baking and cooking techniques.
TC1/M3: Create and refine recipes, including ingredients, methods, cooking times and temperatures.</td></tr>
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