

Design Technology Medium Term Plan 2021-22 – Cycle A

Autumn 1

Autumn 2

Key Stage 1

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Lower Key Stage 2

Mechanical Systems: Pneumatic toys (Y3) KAPOW

- Use knowledge of existing products to design his/her own functional product. (Processes)
- Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes. (Processes)
- Safely measure, mark out, cut, assemble and join with some accuracy. (Processes)
- Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them. (Processes)
- Understand how mechanical systems such as levers and linkages or pneumatic systems create movement. (Processes)
- Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience. (Processes)
- Create designs using exploded diagrams. (Processes)
- Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. Cutting internal shapes, slots in frameworks. (Processes)
- Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user. (Processes)

Upper Key Stage 2

Structure: Bridges (Y5) KAPOW

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- Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product.
- Create prototypes to show his/her ideas. (Processes)
- Make careful and precise measurements so that joints, holes and openings are in exactly the right place. (Processes)
- Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. (Processes)
- Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable. (Processes)

	<ul style="list-style-type: none"> • Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities. (Processes) • Use a wide range of methods to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately. (Processes)
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Spring 1	Spring 2
Key Stage 1	
Mechanisms- KAPOW wheels and axles (Y1)	Fruit and Vegetables (Y!) -KAPOW
<ul style="list-style-type: none"> • Create simple designs for a product. (Processes) • Use pictures and words to describe what he/she wants to do. (Processes) • Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing. (Processes) • Use a range of simple tools to cut, join and combine materials and components safely. (Processes) • Ask simple questions about existing products and those that he/she has made. (Processes) • Use wheels and axles in a product. (Processes) • Design purposeful, functional, appealing products for himself/herself and other users based on design criteria. (Processes) • Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. (Processes) • Choose appropriate tools, equipment, techniques and materials from a wide range. (Processes) • Safely measure, mark out, cut and shape materials and components using a range of tools. (Processes) • Evaluate and assess existing products and those that he/she has made using a design criteria. (Processes) • Explore and use mechanisms e.g. levers, sliders, wheels and axles, in his/her products. (Processes) 	<ul style="list-style-type: none"> • Talk about what he/she eats at home and begin to discuss what healthy foods are. (Cooking and Nutrition) • Say where some food comes from and give examples of food that is grown. (Cooking and Nutrition) • Use simple tools with help to prepare food safely. (Cooking and Nutrition) • Understand the need for a variety of food in a diet. (Cooking and Nutrition) • Understand that all food has to be farmed, grown or caught. (Cooking and Nutrition) • Create simple designs for a product. (Processes) • Use pictures and words to describe what he/she wants to do. (Processes) • Design purposeful, functional, appealing products for himself/herself and other users based on design criteria. (Processes) • Evaluate and assess existing products and those that he/she has made using a design criteria. (Processes)
Lower Key Stage 2	
Cooking and Nutrition – Chocolate crispy cakes linked to Science	
<ul style="list-style-type: none"> • Use a wider variety of ingredients and techniques to prepare and combine ingredients safely. (Cooking and Nutrition) • Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user. (Processes) 	
Upper Key Stage 2	

Food: adapting a recipe –KAPOW

- Select appropriate ingredients and use a wide range of techniques to combine them. (Cooking and Nutrition)
- Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities. (Processes)

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Summer 1	Summer 2
Key Stage 1	
Lower Key Stage 2	
Textiles: Cushions KAPOW (Y3)	
<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Use knowledge of existing products to design his/her own functional product. (Processes) • Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes. (Processes) • Safely measure, mark out, cut, assemble and join with some accuracy. (Processes) • Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them. (Processes) • Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience. (Processes) • Create designs using exploded diagrams. (Processes) • Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. Cutting internal shapes, slots in frameworks. (Processes) • Use his/her knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them. (Processes) • Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user. (Processes)
Upper Key Stage 2	
Textiles: Stuffed toys –KAPOW (Y5)	
<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product. (Processes) • Make careful and precise measurements so that joins, holes and openings are in exactly the right place. (Processes) • Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. (Processes) • Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. (Processes) • Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities. (Processes)

Any objectives not covered will be covered during enrichment days.