

YEAR 2

MECHANISMS – FAIRGROUND WHEEL

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
DESIGNING	<p>The three Prime ELGS of Communication and Language, PSED and Physical Development provide the foundations of which all other learning is built upon.</p> <p>Specific:</p> <p>Creating with Materials ELG</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function.</p> <p>Share their creations, explaining the process they have used.</p> <p>People Culture and Communities ELG</p> <p>Describe their immediate environment using knowledge from observation,</p>	<p>Use own ideas to design something</p> <p>Describe how their own idea works</p> <p>Design a product which moves</p> <p>Explain to someone else how they want to make their product</p> <p>Make a simple plan before making.</p>	<p>Think of an idea and plan what to do next</p> <p>Explain why they have chosen specific criteria</p>	<p>Prove that a design meets a set criteria</p> <p>Design a product and make sure that it looks attractive</p> <p>Choose a material for both its suitability and its appearance</p>	<p>Use ideas from other people when designing</p> <p>Produce a plan and explain it</p> <p>Persevere and adapt when original ideas do not work</p> <p>Communicate ideas in a range of ways, including by sketches and drawings which are annotated</p>	<p>Come up with a range of ideas after collecting information from different sources</p> <p>Produce a detailed step-by-step plan</p> <p>Explain how a product will appeal to a specific audience</p> <p>Design a product that requires pulleys or gears</p>	<p>Use market research to inform plans and ideas</p> <p>Follow and refine original plans</p> <p>Justify planning in a convincing way</p> <p>Show that culture and society is considered in plans and designs</p>

	discussion, stories, non-fiction texts, and maps.						
MAKING	<p>The three Prime ELGS of Communication and Language, PSED and Physical Development provide the foundations of which all other learning is built upon.</p> <p>Specific:</p> <p>Creating with Materials ELG</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function.</p> <p>Share their creations, explaining the process they have used.</p>	<p>Use own ideas to make something</p> <p>Make a product which moves</p> <p>Choose appropriate resources and tools</p>	<p>Choose tools and materials and explain why they have chosen them</p> <p>Join materials and components in different ways</p> <p>Measure materials to use in a model or structure</p>	<p>Follow a step-by-step plan, choosing the right equipment and materials</p> <p>Select the most appropriate tools and techniques for a given task</p> <p>Make a product which uses both electrical and mechanical components</p> <p>Work accurately to measure, make cuts and make holes</p>	<p>Know which tools to use for a particular task and show knowledge of handling the tool</p> <p>Know which material is likely to give the best outcome</p> <p>Measure accurately</p>	<p>Use a range of tools and equipment competently</p> <p>Make a prototype before making a final version</p> <p>Make a product that relies on pulleys or gears</p>	<p>Know which tool to use for a specific practical task</p> <p>Know how to use any tool correctly and safely</p> <p>Know what each tool is used for</p> <p>Explain why a specific tool is best for specific action</p>
EVALUATING	<p>The three Prime ELGS of Communication and Language, PSED and Physical Development provide the foundations of which all other learning is built upon.</p> <p>Specific:</p>	<p>Describe how something works</p> <p>Explain what works well and not so well in the model they have made</p>	<p>Explain what went well with their work</p>	<p>Explain how to improve a finished model</p> <p>Know why a model has or has not been successful</p>	<p>Evaluate and suggest improvements for designs</p> <p>Evaluate products for both their purpose and appearance</p> <p>Explain how the design has been improved</p>	<p>Suggest alternative plans; outlining the positive features and draw backs</p> <p>Evaluate appearance and function against original criteria</p>	<p>Know how to test and evaluate designed products</p> <p>Explain how products should be stored and give reasons</p> <p>Evaluate product against clear criteria</p>

	<p>Creating with Materials ELG</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function.</p> <p>Share their creations, explaining the process they have used.</p>				<p>Use IT where appropriate to add to the quality of the product</p>		
<p>TECHNICAL KNOWLEDGE</p>		<p>Make their own model stronger Make a model stronger and more stable</p> <p>Use wheels and axles, when appropriate to do so</p>	<p>Know how to strengthen a product by stiffening a given part or reinforce a part of the structure</p> <p>Use a simple IT program within the design Know how to be hygienic and safe when using food</p> <p>Bring a creative element to the food product being designed</p>		<p>Link scientific knowledge to design by using pulleys or gears</p> <p>Use more complex IT program to help enhance the quality of the product produced Use electrical systems correctly and accurately to enhance a given product</p> <p>Know which IT product would enhance a specific product Use knowledge to improve a made product by strengthening, stiffening or reinforcing</p>		
<p>FOOD TECHNOLOGY</p>		<p>Cut food safely Weigh ingredients to use in a recipe</p> <p>Describe the ingredients used when making a dish or cake</p>	<p>Describe how food ingredients come together</p> <p>Weigh out ingredients and follow a given recipe to create a dish</p> <p>Talk about which food is healthy and which food is not Know when food is ready for harvesting Describe how food ingredients come together</p> <p>Weigh out ingredients and follow a given recipe to create a dish</p> <p>Talk about which food is healthy and which food is not</p> <p>Know when food is ready for harvesting</p>		<p>Be both hygienic and safe in the kitchen</p> <p>Know how to prepare a meal by collecting the ingredients in the first place</p> <p>Know which season various foods are available for harvesting Explain how food ingredients should be stored and give reasons</p> <p>Work within a budget to create a meal</p> <p>Understand the difference between a savoury dish and sweet dish.</p>		

COMPOSITES

Generate ideas by drawing on experiences.

Design a product with moving wheels.

Make a Ferris wheel, using tools safely, with moving wheels.

Evaluate and test the product with moving wheels.

COMPONENTS

	1	2	3	4	End Point
	<p>How can I communicate my ideas?</p> <p>How can I evaluate an existing product?</p> <p>How can I use a range of mechanisms?</p>	<p>How can I design a functional and appealing product?</p> <p>How can I use a range of mechanisms?</p>	<p>How can I create a more stable structure?</p> <p>How can I create a working mechanism?</p>	<p>Which tools and equipment should I use to create my product?</p> <p>How can I improve my design?</p>	<p>Children will know Ferris Wheels need wheels and an axle to move.</p> <p>Children will know that wheels need to turn on an axle.</p> <p>Children will be able to use tools safely.</p> <p>Children can join different materials.</p> <p>Children can test their product and evaluate it against the design criteria.</p> <p>Children will say what went well and what they would improve.</p>
<p>CONCEPTS</p> <p>Link to concept map</p>	Design	Design	Design	Design	Children will have used their understanding and knowledge of other Ferris Wheels to design a fire engine with moving wheels.
	Systems	Systems	Systems	Systems	Children will have made a moving wheel on an axle.
	Technique	Technique	Technique	Technique	Children will have made a moving wheel on an axle.
	Critical Thinking	Critical Thinking	Critical Thinking	Critical Thinking	Children will make and evaluate their moving Ferris Wheel and the mechanisms used.
SKILLS	Begin to draw on their own experience to help and	Choose tools and materials and explain why they	Join materials and components in different ways	Begin to make a design using	Children will generate ideas, follow a design, create and evaluate process to make a vehicle with moving wheels.

	generate ideas and research.	have chosen them. Join materials and components in different ways. Make a model stronger and more stable Use wheels and axles, when appropriate to do so	Measure materials to use in a model or structure Make a model stronger and more stable Use wheels and axles	appropriate techniques. With help, measure, mark out, cut and shape a range of materials Use tools safely Begin to use simple finishing techniques to improve the appearance of their product.	Children will be able to use hacksaws and bench hooks safely with support. Children will be able to choose appropriate materials to create their design.
KNOWLEDGE ..\..\..\Hubs\Science and DT\DT\2023-2024\KAPOW\YEAR 2\Mechanisms - Ferris Wheel\Ferris Wheel Knowledge Organiser.pdf	Know what a mechanism is Identify a wheel and an axel.	Know which materials are fit for purpose to use to create their product. Know how to make a wheel that moves.	Know how to apply design ideas to make a moving Ferris Wheel.	Know how to apply design ideas to make a moving Ferris Wheel. Know what went well with their work and what they could improve in future.	Children will know what a fire engine is and how it moves. Children will know how a wheel and axel can be used as a mechanism Children will be able to use knowledge of mechanisms to add to other designs Children will create a vehicle with a moving wheel
LESSON LINK	KAPOW Mechanisms – Fairground wheel	KAPOW Mechanisms – Fairground wheel	KAPOW Mechanisms – Fairground wheel	KAPOW Mechanisms – Fairground wheel	
PROGRESSIVE VOCABULARY	axle axle holder design design criteria ferris wheel	stable strong waterproof weak	mechanism stable strong test	decorate evaluation test	Articulate and recognise subject specific vocabulary

	ferris wheel pod frame wheel				
CURRICULUM EXPERIENCES				Create own Ferris Wheel.	
END POINT	Children will know that a wheel and axel are a mechanism.	Children will have explored a range of materials and decided which would be purposeful for their product.	Children will have practised using tools safely to create a frame, axle and wheel for their product.	Children will have made a working moving fairground wheel.	

