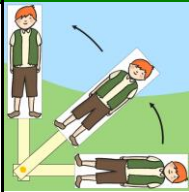
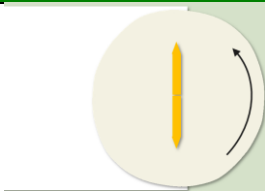




Year 1 Design and Technology – Spring

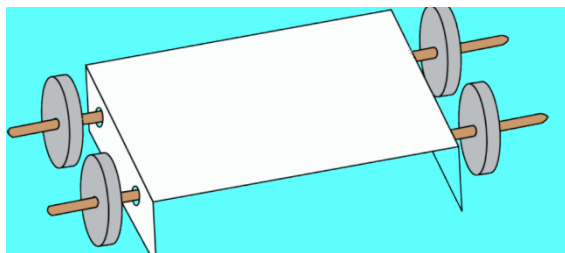
Mechanical System – Moving Pictures

Previous Knowledge and Skills	Key Vocabulary
EYFS: - Construct with a purpose, using a variety of resources - Use simple tools and techniques - Build / construct with a wide range of objects	Evaluate Leaver Mechanism Slider
Key Learning	
- Explore and evaluate a range of moving books - Use a mechanism (slider) in a product - Make a lever and use it in a product - Make a wheel mechanism in a product - Design a product for a purpose and user - Evaluate a product	
Key knowledge and skills (the 'stuff' we want you to remember)	
Skills - Design	Skills - Make
- Design purposeful, functional and appealing products for themselves and other users based on design criteria in the context of designing an appealing moving picture. - Generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups in the context of drawing an annotated sketch to show	Explore and use mechanisms (for example levers and sliders) in their products in the context of making a moving picture.
Skills - Evaluate	Images
Evaluate their ideas against design criteria in the context of evaluating a moving picture.	 

Focus Question – How can I make a picture move?

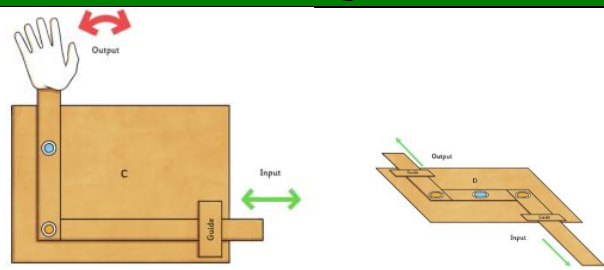
Year 2 Design and Technology – Spring

Mechanical System – Vehicles

Previous Knowledge and Skills		Key Vocabulary	
Mechanics unit previously taught: Year 1 – moving pictures (Leavers, wheels and slider)		Wheels Axles Chassis Feature Vehicles	
Key Learning			
- investigate a variety of vehicles and their uses and features. - investigate wheels, axles and chassis - Investigate ways of creating and decorating the body of a vehicle. - Design a vehicle - Make a vehicle based on a design - Evaluate my product			
Key knowledge and skills (the 'stuff' we want you to remember)			
Skills - Design		Skills - Make	
- Design purposeful, functional and appealing products for themselves and other users based on design criteria in the context of designing the body of a vehicle. - Generate and develop ideas into a design for a vehicle.		Explore and use mechanisms (for example wheels and axles) in their products in the context of making a vehicle.	
Skills - Evaluate		Images	
Evaluate their ideas against design criteria in the context of evaluating a vehicle.			
Focus Question – How can I make a vehicle move?			

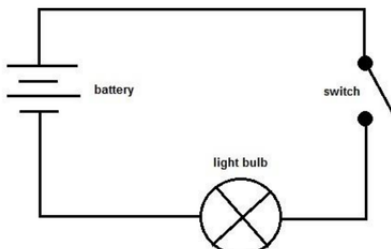
Year 3 Design and Technology – Spring

Mechanical System – Mechanical Posters

Previous Knowledge and Skills	Key Vocabulary
Mechanics unit previously taught: - Year 1 – moving pictures (leavers, wheels and sliders) - Year 2 – vehicles (wheels, axles and chassis)	Linkages Leavers Mechanical system Prototype
Key Learning	
- Investigate mechanical systems - Make mechanical systems, which includes leavers and linkages - Develop design criteria - Use prototypes to develop ideas - Select correct materials and use different technical - Evaluate my poster	
Key knowledge and skills (the 'stuff' we want you to remember)	
Skills - Design	Skills - Make
- Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at individuals or groups, in the context of developing design criteria and design ideas for a moving poster to promote recycling. - Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes, in the context of generating and developing ideas to make a moving poster. - Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes, in the context of using the moving poster design to create a prototype.	Select from and use a wider range of tools and equipment to perform practical tasks accurately, in the context of selecting and using the correct tools and equipment make a moving poster.
Skills - Evaluate	Images
Investigate and analyze a range of existing products, in the context of investigating existing lever and linkage mechanisms. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, in the context of evaluating their moving poster.	
Focus Question – How can I make a poster move?	

Year 4 Design and Technology – Spring

Electrical System – Battery Operated Lights

Previous Knowledge and Skills	Key Vocabulary
Year 4 – electrical circuits in science	bulb electrical systems motor parallel circuits series circuits switch
Key Learning	
• Explain how key events and individuals in design and technology have helped shape the world. • Make and represent different types of circuits. • Make and use switches • Develop a design criteria and a design • Select material and components to make a light. • Evaluated a finished product.	
Key knowledge and skills (the 'stuff' we want you to remember)	
Skills - Design	Skills - Make
• Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups in the context of developing design criteria for a light. • Generate, develop, model and communicate their ideas through annotated sketches and cross sectional in the context of sketching a design for a light.	• Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities in the context of choosing materials and components to make the main structure of the light.
Skills - Evaluate	Images
• Evaluate their ideas and products against design criteria and consider the views of others to improve their work in the context of evaluating a battery-operated light.	
Focus Question – How do you create a circuit with a working switch?	

Year 5 Design and Technology – Spring

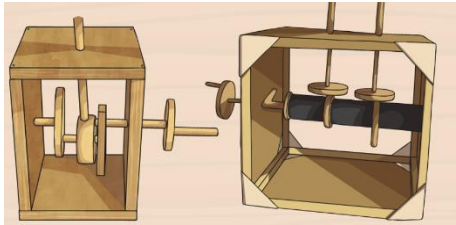
Digital World – Programming Adventures

Previous Knowledge and Skills	Key Vocabulary
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KS1 –understand how bee-bots work	step-by-step plan digital graphics fit for purpose
Key Learning	
• Program and control floor robots • Generate and develop ideas through discussion • Explore how different materials can affect the movement and control of floor robots • Plan an adventure map • Selecting materials based on their properties for an adventure map • Program and monitor floor robots on a finalised adventure map.	
Key knowledge and skills (the 'stuff' we want you to remember)	
Skills - Design	Skills - Make
• Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams prototypes, pattern pieces and computer-aided by designing an adventure map. • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups by exploring how different materials affect the movement and control of floor robots. • Plan an adventure map	• Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities by creating an adventure map using materials selected for their properties. • Apply their understanding of computing to program, monitor and control their products by programming and monitoring floor robots on finalised adventure map
Skills - Evaluate	Images
• Evaluate their ideas and products against design criteria.	
Focus Question – How do you program a floor robot?	

Year 6 Design and Technology – Spring

Mechanics – Automata Animals

Previous Knowledge and Skills	Key Vocabulary
Mechanics unit previously taught: - Year 1 – moving pictures - Year 2 – vehicles - Year 3 – mechanical posters	Cam Mechanisms Characteristics Components Function Aesthetic Construction
Key Learning	
- Research ideas about different animals to inform my designs - Explain how simple cam mechanisms work - Can select material according to their functional properties - Research and develop criteria to inform my design - Build framework, accurately using a wider range of tools and equipment - Evaluate my product and understand and use a mechanical system	
Key knowledge and skills (the 'stuff' we want you to remember)	
Skills - Design	Skills - Make
- Use research and develop design criteria to inform the design of innovative, functional appealing products that are fit for purpose, aimed at particular individuals or groups in the context of researching animals that will be used in their mechanical models - Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups in the context of developing design criteria for the Automata Animals.	Select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing), accurately in the context of using tools and equipment to perform the job of cutting, joining and finishing wood to make a frame.
	Images
- Using Mechanical Systems Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work in the context of evaluating the product design. - Understand and use mechanical systems in their products in the context of using a cam mechanism to make a model of an animal move.	
Focus Question – How do cams work in helping create movement?	