Sandon Junior Sha	Design and Technology Knowledge Organiser Year 5– Mechanisms - Cams		
	Technical Knowledge and understanding.		
Project objective	Types of movement	 Understand that mechanical systems have an input, process and an 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. 	
		Focused skills	
Design, make and evaluate a moving toy (product) for child	Coscillating Coscillating Rotating	• Give pre-cut cams made from MDF or wooden wheels to mount on a piece of board and observe their movement with a follower.	
(user) for Christmas present/ card (purpose).	Types of cams	 Practise how to use a hand drill safely to make in a housing. Ensure to secure the wheel with a the wheel to avoid drilling through the bench ho measuring accurately and checking before cuttin up the cam and follower otherwise the mechanis cam lift the follower? Develop measuring, marking, cutting, shaping clamps, bench hooks, square section wood, card mechanisms and construct wooden frames or ca accurate and safe use of tools and equipment. 	e an off-centre cam and position it accurately G-clamp and use a piece of scrap wood under ook or table. Stress the importance of ag any holes or gluing. It is important to line sm may not work smoothly. <i>How high will the</i> and joining skills using junior hacksaws, G- triangles and hand drills to make cam rd housings, as appropriate. Demonstrate the
Vocabulary		Key Learning	
cam, snail cam, off follower, axle, shaft rotation, rota rec annotated s mechanical system design decisions, fu user, purpose, c	F-centre cam, peg cam, pear shaped cam , crank, handle, housing, framework ry motion, oscillating motion, ciprocating motion sketches, exploded diagrams n, input movement, process, output movement inctionality, innovation, authentic, lesign specification, design brief	 Prior Learning 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. Making 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 that are accurately assembled and well finished. Work within the constraints of time, resources and cost. 	 Designing 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. Evaluating Compare the final product to the original design specification. Test products with the intended user, where safe and practical, 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.