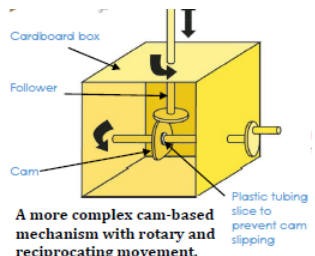


# Bomere and the XI Towns Federation Knowledge Organiser—SUBJECT

Topic: Cams	Class/Year Groups: Stiperstones Y4/5	Term: Autumn
<p>What you already know?</p> <ul style="list-style-type: none"> <li>• Experience of axles, axle holders and wheels that are fixed or free moving.</li> <li>• Basic understanding of different types of movement.</li> <li>• Experience of cutting and joining techniques with a range of materials including card, plastic and wood.</li> <li>• An understanding of how to strengthen and stiffen structures.</li> </ul>	<p>What you will learn:</p> <p><b>Designing</b> • 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.</p> <p><b>Making</b> • 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 are accurately assembled and well finished. Work within the constraints of time, resources and cost.</p> <p><b>Evaluating</b> • 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.</p> <p><b>Technical knowledge and understanding</b> • 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.</p>	<p>Vocabulary</p> <p>cam, snail cam, off-centre cam, peg cam, pear shaped cam</p> <p>follower, axle, shaft, crank, handle, housing, framework</p> <p>rotation, rotary motion, oscillating motion, reciprocating motion</p> <p>annotated sketches, exploded diagrams</p> <p>mechanical system, input movement, process, output movement</p> <p>design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief</p> 



## National Curriculum Objectives:

**Design**—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

**Make**—select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately

**Evaluate**—investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

**Technical knowledge**— understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

