Year 6 DT Knowledge Organiser: How can I make a toy move?

Subject Specific Skills

- Use their knowledge of –e.g.- science and art when designing
- Be aware of commercial aspects and incorporate these into their designs
- Measure and cut out in precise detail, and make sure that finished products are carefully finished
- Make separate elements of a model before combining into the finished article
- Understand how an article might be mass produced
- Produce a simple instruction manual or handbook for their product
- Research products using the internet

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.

Key Vocabulary

cam, snail cam, off-centre cam, peg cam, pear shaped cam
follower, axle, shaft, crank, handle, housing, framework
rotation, rotary motion, oscillating motion, reciprocating motion
annotated sketches, exploded diagrams
mechanical system, input movement, process, output movement
design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief

Technical Knowledge:

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.

Design:

- 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.

Make:

- 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.

Evaluate:

- 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.