

Year group:  
Year 3



Term: Autumn

Mechanical  
systems

**National Curriculum:** 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. Generate, develop, model and communicate ideas through discussions and annotated sketches. Select from a wide range of tools and equipment to perform practical tasks, cutting, shaping, joining and finishing accurately. Select from a wider range of materials and components according to their functional properties and aesthetic qualities. Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).

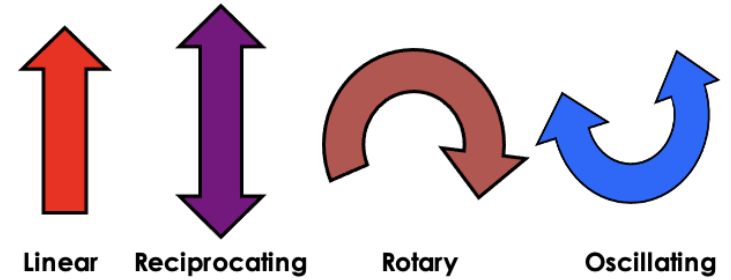
### Key Knowledge and skills

- Use scientific knowledge of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).
- Understand and use lever and linkage mechanisms.
- Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Investigate and analyse books and other products with lever and linkage mechanisms, for example young children books from the library.
- Distinguish between loose and fixed pivots.
- Select from and use finishing techniques suitable for the final product.
- Know and use technical vocabulary relevant to the project.
- Evaluate own own product product and ideas against criteria and user needs.
- Dissect a book with mechanical systems to understand their usage and application of one of the four movements.

### Vocabulary

Forces	A strength or power to make something move.
Pulley	A wheel with a groove round it to take a rope, used for lifting things.
Lever	A bar that is pushed or pulled to lift something.
Pivot	The central point, pin or shaft on which a mechanism turns or oscillates.
Linkage	A mechanism made by connecting together rigid links or levers.
Input/output	Motion which transforms into force to make the outcome.
Movement	Change in the position of the object. Types of movement are: linear, reciprocating, rotary and oscillating.

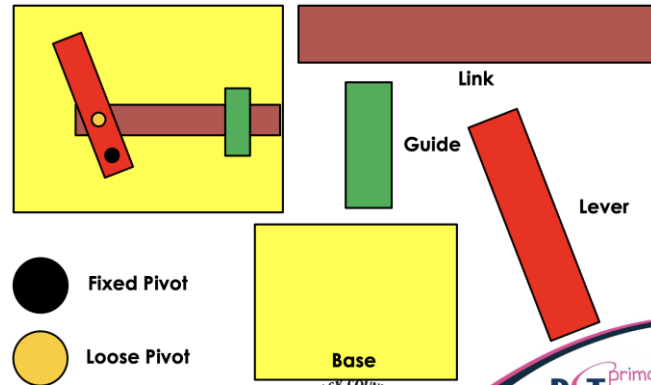
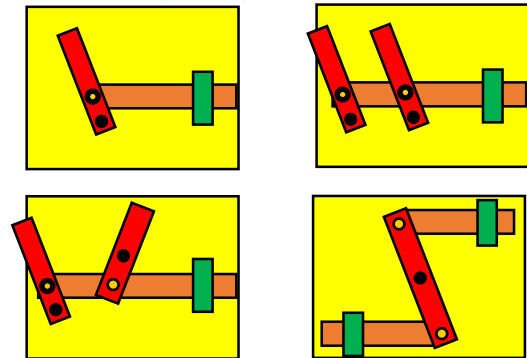
### Techniques: movements



### Evaluate

- Which parts were inspired by the books that you have researched?
- What material makes the bell lever and why?
- Which part of the system is the input and which part the output?
- What are the four types of movement?
- How did you make sure that your book is appealing for young children?

### Types of mechanisms



### Outcome

To design, make and evaluate an information book about your current topic for young children, using all linkage and lever mechanisms.

