

**St Margaret Mary's Medium Term Planning**

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| <b>Subject:</b> Design Technology<br><b>Topic:</b> Mechanisms - Levers & Linkages   |  | <b>Year group:</b> 3<br><b>Term:</b> Autumn   |
| <b>Prior learning:</b> Children will have had some experience handling and/or making cards with flaps at KS1.   |  |   |
| <b>Main focus of the unit:</b> Children to gain an understanding of levers and linkages. To recognise that there is an input and output within all mechanisms.  |  |   |
| <b>End of unit task:</b> Children will create a Christmas card with moving parts.   |  |   |
| <b>Key Objectives</b>   | <b>Vocabulary</b>  | <b>Lesson sequence:</b>   |
| Gain an understanding of the history of products with moving parts.   |  | A short lesson on the history of books/cards with moving parts.   |
| Begin to recognise some existing products that require mechanisms to work e.g. picture books.<br><br>Begin to discuss the relationship between forces acting on the input and energy generated from the output. | mechanism, lever, linkage, pivot, slot, bridge, input, process, output, rotary, oscillating, reciprocating<br><br>user, purpose, function, aesthetics, prototype, design specification, design criteria, evaluate, appealing, design brief | <b>1. Investigate existing products that use levers and linkages.</b><br><br>Children to explore a variety of cards and books with moving parts considering a variety of design features e.g. size, functionality, aesthetics etc.<br><br>Children to complete a page recording what they like/dislike about a variety of the products, which will then inform their own designs. |
| Begin to create prototypes to aid creating a final product.<br><br>Begin to identify the different types of mechanisms.   | mechanism, lever, linkage, pivot, slot, bridge, input, process, output, rotary, oscillating, reciprocating   | <b>2. Create prototypes</b><br><br>Children to create a variety of levers using card and split pins to gain a further understanding of how levers work.<br><br>Children will then choose which particular lever they wish to use in their final product.  |
| Create a design specification.<br><br>Use labelled drawing to communicate design ideas.   | user, purpose, function, aesthetics, prototype, design specification, design criteria, evaluate, appealing, design brief   | <b>3. Design specification and designs</b><br><br>Children to identify the end user they will design the product for and the purpose of the card e.g. a Christmas card to send to a parishioner. Children will then create several designs for their product based upon their research from lesson 1.   |
| Create a final design of the product, considering measurements, intended user etc.  | mechanism, lever, linkage,<br><br>user, purpose, function, aesthetics, prototype, design criteria, evaluate, appealing, design brief   | <b>4. Final design</b><br><br>Children choose a final design from their previous designs from lesson three.   |
| Measure, mark out, cut and join card with some accuracy.<br><br>Create products using levers and linkages.  | mechanism, lever, linkage, pivot, slot, bridge, input, process, output, rotary, oscillating, reciprocating   | <b>5. Making the card</b><br><br>Children create their celebration card using their final design from lesson 4 as a guide. Each card should have a mechanism as a feature.  |
| Test a product against the original design criteria.  | user, purpose, function, aesthetics, prototype, design criteria, evaluate, appealing, design brief   | <b>6. Evaluating the final product</b><br><br>Children use their design specification from lesson 3 and their final design from lesson 4 to evaluate their end product considering the design, functionality and aesthetics.  |