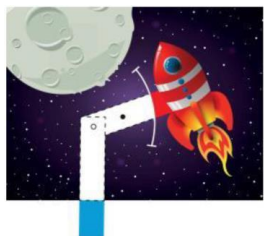




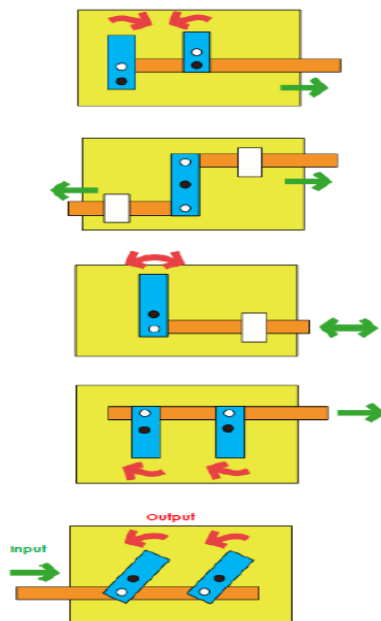
Project objective

Design, make and evaluate a moving part(product) for child (user) for Christmas card (purpose).



Design and Technology Knowledge Organiser Year 3 – Mechanisms- levers and linkages

● Fixed pivot
○ Loose pivot



When you push the card strip (input movement), the two levers move (output movement).

Technical Knowledge and understanding.

- Understand and use lever and linkage mechanisms.
- Distinguish between fixed and loose pivots.
- Know and use technical vocabulary relevant to the project.

Focused skills

- Children investigate, analyse and evaluate books which have a range of lever and linkage mechanisms.
- Make a variety of levers and linkages
- Use questions to develop children's understanding e.g. *Which card strip is the lever? Which card strip is acting as the linkage? Which part of the system is the input and which part the output? What does the type of movement remind you of? Which are the fixed pivots and which are the loose pivots?*
- Demonstrate the correct and accurate use of measuring, marking out, cutting, joining and finishing skills and techniques.
- Using annotated sketches and prototypes, ask the children to develop, model and communicate their ideas.
- Evaluate the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.

Vocabulary

mechanism, lever, linkage, pivot, slot,
bridge, guide
system, input, process, output
linear, rotary, oscillating, reciprocating
user, purpose, function
prototype, design criteria, innovative,
appealing, design brief

Key Learning

Prior Learning

- Explored and used mechanisms such as flaps, sliders and levers.
- Gained experience of basic cutting, joining and finishing techniques with paper and card.

Designing

- Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.
- Use annotated sketches and prototypes to develop, model and communicate ideas.

Making

- Order the main stages of making.
- Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Select from and use finishing techniques suitable for the product they are creating.

Evaluating

- Investigate and analyse books and, where available, other products with lever and linkage mechanisms.
- Evaluate their own products and ideas against criteria and user needs, as they design and make.