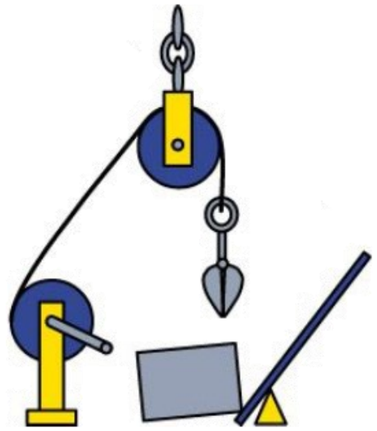
Mechanical systems: Year 1
Sliders and leavers

Design, make and evaluate a moving picture for a nursery child to tell a traditional story.



Key vocabulary

Slider, lever, pivot, slot, bridge/guide

Card, masking tape, paper fastener, join

Pull, push, up, down, straight, curve, forwards, backwards

Design, make, evaluate, user, purpose, ideas, design criteria, product, function

Key learning in design and technology

Prior learning

- Early experiences of working with paper and card to make simple flaps and hinges.
- Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape.

Designing

- Generate ideas based on simple design criteria and their own experiences, explaining what they could make.
- Develop, model and communicate their ideas through drawings and mock-ups with card and paper.

Making

- Plan by suggesting what to do next.
- Select and use tools, explaining their choices, to cut, shape and join paper and card.
- Use simple finishing techniques suitable for the product they are creating.

Evaluating

- Explore a range of existing books and everyday products that use simple sliders and levers.
- Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.

Technical knowledge and understanding

- Explore and use sliders and levers.
- Understand that different mechanisms produce different types of movement.
- Know and use technical vocabulary relevant to the project.

Investigative and Evaluative Activities (IEAs)

- Children explore and evaluate a collection of books and everyday products that have moving parts, including those with levers and sliders. e.g. *What is it? Who is it for? What is it for?*
- Use questions to develop children's understanding e.g. *What do you think will move? How will you make it move? What part of the product moved and how did it move? How do you think the mechanism works? What else could move in the product? How well does it work?*
- Introduce and develop vocabulary e.g. lever, pivot, slider, left, right, push, pull, up, down, forwards, backwards, in, out.

Focused Tasks (FTs)

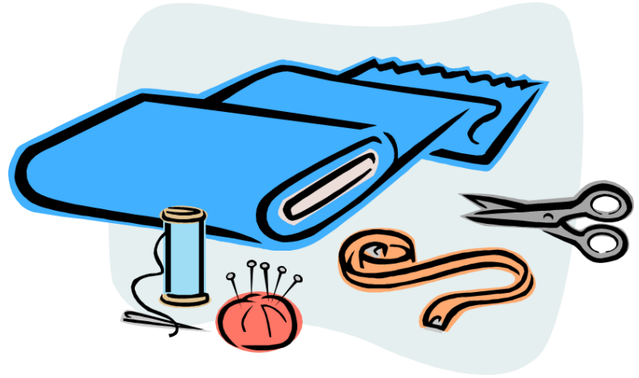
- Demonstrate simple levers and sliders to the children using prepared teaching aids. It is helpful if these are also used in context e.g. the slider is used to show a snail appearing from behind a stone, the lever is used to show a butterfly flying to a flower.
- Use questions to develop children's understanding e.g. *How does the slider move? How does the lever move? Which part of the mechanism is the pivot? What does the movement of the slider and lever remind you of?*
- Following teacher demonstration of the correct use of tools and materials, children should develop their knowledge and skills by replicating the slider and lever teaching aids. Encourage children to add pictures to their mechanisms.

Design, Make and Evaluate Assignment (DMEA)

- Discuss with the children what they will be designing, making and evaluating e.g. *Who will your product be for? What will be its purpose? How do you want it to move? Will you use a lever or a slider?*
- Generate simple design criteria with the children e.g. the mechanism should work smoothly, it should make the right type of movement.
- Encourage the children to develop their ideas through talking, drawing and making mock-ups of their ideas with paper and card.
- Discuss the finishing techniques the children might use e.g. using digital text and graphics, paint, felt tipped pens or collage.
- As a whole class, talk about the order in which the mechanisms will be made.
- Ask children to evaluate their developing ideas and final products against the original design criteria.

Textiles: Year 1
Templates and joining techniques

Design, make and evaluate a monster puppet for themselves to present to introduce a character to the class the class



Key vocabulary

Names of existing products, joining and finishing techniques, tools, fabrics and components

Template, pattern pieces, mark out, join, decorate, finish

Features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function

Key learning in design and technology

Prior learning

- Explored and used different fabrics.
- Cut and joined fabrics with simple techniques.
- Thought about the user and purpose of products.

Designing

- Design a functional and appealing product for a chosen user and purpose based on simple design criteria.
- Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.

Making

- Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.
- Select from and use textiles according to their characteristics.

Evaluating

- Explore and evaluate a range of existing textile products relevant to the project being undertaken.
- Evaluate their ideas throughout and their final products against original design criteria.

Technical knowledge and understanding

- Understand how simple 3-D textile products are made, using a template to create two identical shapes.
- Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.
- Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.
- Know and use technical vocabulary relevant to the project.

Investigative and Evaluative Activities (IEAs)

- Children investigate and evaluate existing products linked to the chosen project. Explore and compare e.g. fabrics, joining techniques, finishing techniques and fastenings used.
- Use questions to develop children's understanding e.g. *How many parts is it made from? What is it joined with? How is it finished? Why do you think these joining techniques have been chosen? How is it fastened? Who might use it and why?*
- Make drawings of existing products, stating the user and purpose. Identify and label, if appropriate, the fabrics, fastenings and techniques used.

Focused Tasks (FTs)

• Investigate fabrics to determine which is best for the purpose of the product they are creating.
• Using prepared teaching aids, demonstrate the use of a template or simple paper pattern. Children could make their own templates or paper patterns. If necessary, they can use ones provided by the teacher.
• Using prepared teaching aids, demonstrate the correct use of appropriate tools to mark out, tape or pin the fabric to the templates or paper patterns and cut out the relevant fabric pieces for the product.
• Using prepared teaching aids, demonstrate appropriate examples of joining techniques for children to practise in guided groups e.g. running stitch including threading own needle, stapling, lacing and gluing. Talk about the advantages and disadvantages of each technique.
• Using prepared teaching aids, demonstrate examples of finishing techniques for children to practise in guided groups e.g. sewing buttons, 3-D fabric paint, gluing sequins, printing.

Design, Make and Evaluate Assignment (DMEA)

•Provide the children with a context that is authentic. Discuss with children the purpose and user of the products they will be designing, making and evaluating. Design criteria developed with the teacher should be used to guide the development and evaluation of the children's products.
•Ask the children to generate a range of ideas e.g. *What parts will the product need to have and what will it be made from? What size will it be? How will it be joined and finished?*
•Through talk, drawings and mock-ups, ask the children to develop and communicate their ideas. Information and communication technology could be used for symmetry and pattern ideas. Choose one idea to follow through.
• Talk with the children about the stages in making before assembling quality products, applying the knowledge, understanding and skills learnt through the IEAs and FTs.
• Evaluate ongoing work and the final products against the intended purpose and with the intended user, drawing on the design criteria previously agreed.