

Year Groups

Year 1

Mechanical systems - Sliders and leavers

Health and safety

Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task.

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.

Project title

Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).

To be completed by the teacher depending on which context the children are making the product.

What could children design, make and evaluate?

class/group storybook poster

display greetings card

class/group information book

storyboard other – specify

Provided resources

everyday products with levers and slider mechanisms
teaching board

Possible resources

card strips, card rectangles, paper, masking tape, paper fasteners, paper binders, stick glue, PVA glue, finishing materials and media
left/right handed scissors, cutting mats, card drills

Learning Progression

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.