

Our Intent is: To support our pupils in answering the question, "How do we design, make and evaluate solutions to real and relevant problems?" Using creativity and innovation, we inspire pupils to develop skills which impact on daily life.



Forton Primary School Design and Technology

**Nicky Nook Class
Spring 1
Year A**

Key Concept: Mechanisms

Focus: Sliders and Levers

Key Question:

N.C. LINKS: When designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

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	<ul style="list-style-type: none">• build structures, exploring how they can be made stronger, stiffer and more stable• explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products
<p>Unit Overview:</p> <p>To create levers and slides to bring a picture to life through movement.</p>	<p>Vocabulary:</p> <p>slider, lever, pivot, slot, bridge/guide</p> <p>card, masking tape, paper fastener, join</p> <p>pull, push, up, down, straight, curve, forwards, backwards</p>
<p>Possible Outcome:</p> <p>class/group storybook poster display greetings card class/group information book storyboard</p>	<p>design, make, evaluate, user, purpose, ideas, design criteria, product, function</p>

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Intended Users:

themselves younger children parents grandparents friends
visitor to school

Building on Prior learning from EYFS:

Key Learning linked to Designing and Making

Explore - experiment and build with a range of construction resources, find out about the properties and functions of different construction materials.

Design - talk about ideas, choose resources, tools and techniques with a purpose in mind.

Make – make models using different construction materials (eg. construction kits, reclaimed materials), experiment with different ways to build, construct and join resources.

Evaluate – talk about what they like/dislike about their models/constructions, say why and how they would change them.

Tools and equipment – use equipment and tools to build, construct and make different models and constructions; use tools and equipment linked to food preparation.

Safety – handle and use equipment appropriately and safely.

Building on Prior learning when B follow A:

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.

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Key Skills (Disciplinary)

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.

Sequence of Lessons:

1. Investigative and Evaluative Activities

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- 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.

2. Focused Tasks

- 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.

3. Design, Make and Evaluate Assignment

- 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.

Enhancements: N/A

End of Unit Outcome: working levers and slides

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