

## Design and Technology – Year 1

### Content- Mechanisms- Sliders and Levers

#### Big Question: Why do levers and sliders make books more appealing?

NC objectives - areas of study	End point of area of study	Vocabulary		
		Basic	Adventurous	Technical
<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts. When designing and making, pupils should be taught to:</p> <ul style="list-style-type: none"> <li>-Children should explore and use mechanisms.</li> <li>-Design purposeful and functional, appealing products for themselves and others based on design criteria.</li> <li>-Generate, develop, model and communicate their ideas through talking, drawing, templates, models, mock ups (where appropriate) information and communication and technology.</li> <li>-Children can select from a range of tools and equipment to perform practical tasks.</li> <li>-Children can select from a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</li> <li>-Children explore and evaluate a range of existing products.</li> </ul>	<p><u>Mechanisms-</u>                      Children have explored and used levers and sliders in existing products.                      They know what levers and sliders are in a product and how different mechanisms work.                      Children understand how different mechanisms can make different movements.                      Children understand and use the technical vocabulary linked with the area of study.                      Children have created a product using levers and sliders and used one simple mechanism movement- in a straight line, backwards and forwards, round and round or in a curve.                      Children can operate their product and use the appropriate vocabulary to describe the steps they took to create it.                      Some children may use additional enhancements such as flaps to their moving pictures.</p>	Bridge, card, paper, pull, push, up, down, forwards, backwards.	Join, curve, straight, slot, guide, fastener	Slider, levers, pivot, bridge, masking tape,

-Children can evaluate their ideas and products against design criteria.

## Knowledge

### Substantive Knowledge

Mechanisms- Concept- **User**

#### Lesson 1-

**LO: To know that products have moving parts and understand the purpose.**

**Vocabulary- Levers, sliders, mechanism**

Children to explore a range of products that include flaps, hinges and levers and sliders. This could include books, toys, pegs, pizza cutter, on and off switch on a radio etc. Ensure children have the opportunity to explore the movements that they create and answer the following questions.

- 1) What is it?
- 2) Who is it for?
- 3) What is it for?
- 4) Why do the parts move?

Introduce the concept of `user`. What does this mean in Design and Technology? Discuss the users of each of these products? Who is it for and how do you know?

Have an instant response to something wonderful, exciting and awesome happening.

#### Lesson 2-

**LO: To know what levers and sliders are and to understand that different mechanisms can make different movements.**

### Disciplinary Knowledge

**Each lesson: Tell chn-** Explain to the children that today we are going to be illustrators/designers where we can create a product using levers and sliders. Ensure children understand that our role is to create their own greeting card that move and supports the preference of our user. Discuss with the children the chosen user and how the design criteria can be met.

Throughout the unit, children will have the opportunity to draw upon other subject disciplines such as Mathematics, Science and Art. This will include using positional vocabulary to describe movement, begin to draw upon forces of movements and also allow opportunities to develop their use of line and shape in their drawings.

Children to follow the four aspects of Design and Technology- research, design, make and evaluate whilst building upon technical knowledge to make their finished product.

### **Vocabulary: pivot, curve, movement**

Children will understand that a mechanism is a device used to create movement in a product.

Children will continue to explore levers and sliders but will know the following facts:

A lever is a rigid bar which moves around a pivot. Levers are used in many everyday objects.

A slider is a rigid bar which moves backwards and forwards along a straight line. Unlike a lever, a slider does not have a pivot point.

Children to explore a range of mechanisms and understand the movements that are created by these. E.g. when I move this slider, the picture moves in a straight line etc.



Ensure children are also aware of the mechanisms in everyday objects E.g. a lever is used in door handles and slider might be used in children's toys.

Use questions to support children's knowledge and understanding:

- 1) How does the slider move?
- 2) How does the lever move?
- 3) Which part is the pivot?
- 4) What does the movement of the lever and slider remind you of?

### **Lesson 3-**

**LO: To know how to make levers and sliders.**

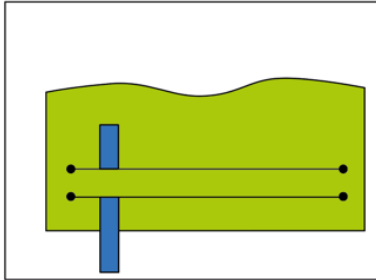
### **Vocabulary- cutting, joining, positions**

Class teacher to model how to make a lever and slider using card and paper. Ensure children know how to use the correct tools when cutting and joining. Ensure there are plenty of pre-cut card for the children to use and hole punchers to create slots. Children to then be given time to replicate levers and sliders using the teaching aids. Encourage children to add pictures to

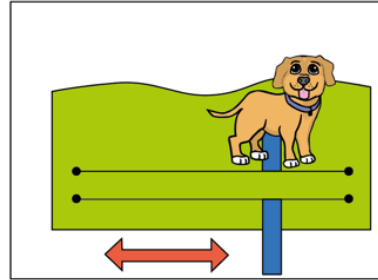
their mechanisms and use the correct positional vocabulary to describe each movement they have created.

### Making a Slider Mechanism 1

1. Use a hole punch to make four holes – not too close to the edge!  
Cut two straight lines and feed in the slider.

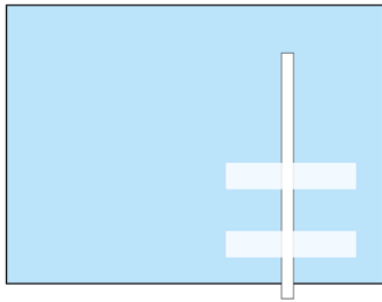


2. Fix a picture to the slider and move it back and forth. You can use a card strip to cover over the cuts.

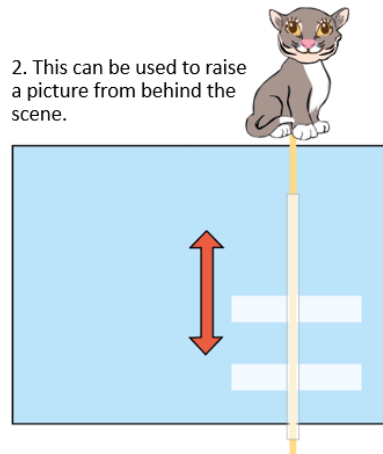


### Making a Slider Mechanism 2

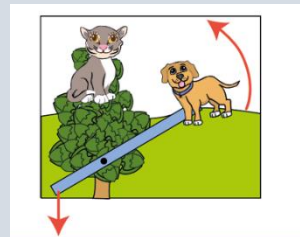
1. A simple slider can be made using a straw taped to the background and a thin dowel used as the slider.



2. This can be used to raise a picture from behind the scene.



### Levers can be used with or without a slot



#### **Lesson 4-**

**LO: To know how to design a product using levers and sliders to suit the user's needs.**

#### **Vocabulary-slot, levers, sliders**

Children to be set the design criteria as a class. E.g. making a card for a family member using levers and sliders. Children to think about the likes and dislikes of their user and try to use this knowledge in their drawing of their design. Children to use the correct technical vocabulary when designing their product. E.g. lever, slot, slider and to think about the tools and materials they will use.

#### **Lesson 5-**

**LO: To know how to cut, shape and join paper and card to make their product.**

#### **Vocabulary-fastenings, mark out, measure**

Children to be given the opportunity to use their design to create their product. Children will use tools for cutting effectively or create holes in their product. (Retrieval from use cutting and joining tools from previous DT unit in Term 2. They will use measuring tools to measure and mark out their cards or mechanisms. They will know how to cut, shape, tear, roll and join card/paper. Ensure the correct risk assessment has been put into place when using cutting tools. Encourage children to talk through their ideas or develop throughout. Children will need to use finishing techniques such as drawing, painting, use of felt tips to add finishing touches to their cards.

**Lesson 6- To understand how to evaluate their product by discussing finished product with their chosen user.**

#### **Vocabulary- Recap all vocabulary**

Children will understand why products need to be evaluated. Children to link back to design criteria and discuss how they have met the brief by linking back to their knowledge of levers and sliders. Children to articulate this to

their peers verbally before discussing whole class. Children to create a class survey or question that they could use to ask their user their thoughts on their product and whether this has met the user's needs.

[By reviewing and evaluating things I have created](#)

## Concepts

**User**

**Purpose**

## ASSESSMENT

**KNOW MORE, REMEMBER MORE, DO MORE...**

In this unit of learning, progress has been made when a learner knows more. This 'distance travelled' from the starting point is evidenced through them remembering more and doing more: in books, low stakes quizzes, retrieval, use of mind maps, answering the big question and being able to feel more confident about this unit.