

Unit 1A Moving pictures

Focus – mechanisms

ABOUT THE UNIT

In this unit, children develop an understanding of simple mechanisms through designing and making moving pictures. These can be based on characters or scenes from stories and could be designed for use in storytelling activities. Children develop their understanding of how movement can be created by investigating everyday products and making simple levers and sliders from given examples.

This unit can be adapted by using an alternative context for the children's designing and making assignment eg *greetings cards with moving parts, simple puppets, a class book with moving pictures related to a class topic.*

PRIOR LEARNING

It is helpful if the children have:

- used scissors safely to cut paper and thin card
- joined materials using tape, glue and paper fasteners
- drawn pictures that they can cut out
- followed simple oral instructions

This unit builds on children's early experiences of working with paper and card.

VOCABULARY

In this unit, children have to use words and phrases relating to:

- designing eg *idea, discuss, choose, drawing, labelling*
- making eg *hole punch, paper fastener, join, cut carefully, planning*
- knowledge and understanding eg *moving, handle, lever, pivot, pull, push, slider, direction, blade, metal, balance, movement, forward, backwards, order, sequence, length*

RESOURCES

- a selection of products with moving parts eg *scissors, balances, storybooks, badges, puppets, cards*
- a selection of favourite storybooks
- disposable pictures which can be cut up for experimentation
- paper, card, pre-cut strips of card
- paper fasteners, masking tape, glue, plier punch or single-hole punch, scissors
- a selection of coloured papers, pens, paints
- construction kits

EXPECTATIONS

at the end of this unit

most children will:

have used tools safely to make a moving picture that incorporates a simple lever or slider; have used given techniques to practise their making skills and as a starting point for developing their own ideas; have been able to talk about how simple moving products work

some children will not have made so much progress and will:

have made a moving picture with help – either in developing their ideas or in using tools to make it; have a limited understanding of how simple moving products work

some children will have progressed further and will:

have developed their own ideas from the initial starting points and will have used tools relatively accurately to make their moving picture(s); have made simple judgements about their work eg *'The lever is a bit floppy but I could stiffen it with a lolly stick', 'I am pleased with the way the boat moves but sometimes it gets stuck'*; have been able to explain how the lever or slider works and will have recorded through drawing and labelling

LEARNING OBJECTIVES

POSSIBLE TEACHING ACTIVITIES

LEARNING OUTCOMES

POINTS TO NOTE

CHILDREN SHOULD LEARN

CHILDREN

INVESTIGATIVE, DISASSEMBLY AND EVALUATIVE ACTIVITIES (IDEAs)

- that simple levers and sliding mechanisms can be used to create movement
- that levers are used in products eg *scissors, balances and moving books*
- to use drawings to represent products

- Discuss with the children a collection of books, cards and other products that have moving parts. *What does the moving part do? How does it work? What effect does it have? ... Surprise? Does it show how something works? Does it work well?*
- Use a simple moving picture book to talk about how levers and sliders can be used to make movement and bring stories to life.
- Use some examples of simple lever and sliding mechanisms made from card or construction kits to discuss with the children how these mechanisms work. Introduce new vocabulary eg *'lever' and 'pivot'*.
- Ask the children to investigate products that include levers eg *a balance, a pair of scissors*. Encourage children to make drawings with arrows to show movement and label parts/materials eg *blade, handle, metal*.

- identify simple levers and sliders in moving books/products and explain how they work
- make drawings of simple products to show how they work
- use appropriate vocabulary to describe mechanisms

Links to this unit

Design and technology: Units 2A 'Vehicles', 2C 'Winding up', 3A 'Packaging', 3C 'Moving monsters'

Science: Unit 1E 'Pushes and pulls'

Information technology: Units 1D 'Labelling and classifying', 2B 'Creating pictures'

Mathematics: Position and direction (slide, left, right, up, down)

Literacy: Responding to stories, storytelling. Relate moving pictures to stories the class are reading. Simple lists and captions could be introduced as a means of organising and labelling plans.

Content

- Have simple examples of levers and sliders available for the children to investigate eg *products, simple models from construction kits and teaching examples assembled from thin card*.
- Explain to the children that a lever has a pivot point. This can be shown with card strips and a paper fastener. Compare the movement of a lever to a slider. A slider moves backwards and forwards in a straight line. This can be shown by a strip of card that can move backwards and forwards through slots in another piece of card. Children could cut out their own pictures to attach to the card strips to create simple moving pictures.
- More able children may be able to develop their ideas more fully using the examples as a starting point. Some children could be asked to draw and label their ideas before making.

Class management

Some children may need adult support in using the hole punch for the first time. Children can practise punching holes accurately on a pre-drawn sheet.

Health and safety

When carrying out a risk assessment for this activity, teachers will need to consider the materials, tools and equipment being used.

Out-of-school activities and homework

Encourage children to practise skills in working with paper and card eg *cutting out pictures from discarded magazines, using recycled paper and thin card to make other moving pictures*. Children could be asked to look for examples of levers and sliders at home.

FOCUSED PRACTICAL TASKS (FPTs)

- that construction kits can be used to try out ideas
- to make simple sliding and lever mechanisms
- how to use tools eg *scissors and a hole punch* safely

- Demonstrate how to make simple sliding mechanisms and lever mechanisms using card strips and paper fasteners. Ask the children to explore the theme of 'appearing and disappearing' using sliders.
- Explore simple lever mechanisms using construction kits.
- Ask the children to draw a picture of themselves on card and make one part of their body move. Remind children not to draw too small. (A prepared drawing of a child/teddy could be given for this activity.)
- Ask the children to practise punching holes eg *make a paper chain decoration or a chain with their names on*.
- Children could model a pair of scissors with card or practise making levers and linkages by copying the examples.
- Children could practise stiffening – give them a picture from a newspaper, ask them to make the arms move by cutting and using paper fasteners. If the arms are too floppy, show how to make them stiffer with straws and pipe cleaners.

- try out their ideas using construction kits to make simple levers
- (with some adult support) assemble strips of card to make simple sliders and lever mechanisms
- use tools safely

DESIGN AND MAKE ASSIGNMENT (DMA)

Design and make a moving picture for the teacher to use when telling a story

- to suggest ideas and explain what they are going to do
- to model their ideas in card and paper
- to make their design using appropriate techniques
- to evaluate their product by discussing how well it works in relation to the purpose

- ★ Discuss with the children the requirements for their story with a moving picture. *Who is the story for? What might it be like? How could you do this?*
- ★ Divide up a familiar story into sections. Organise the children to work on different sections of the story. *What must the individual picture do? How is it going to move?*
- ★ Discuss with the children the types of finishing techniques that could be used eg *collage, paint, felt-tip pens*.
- ★ Discuss with the children the order in which things need to be done. *How could you do this? What could you use? What do you need to do first?*
- ★ Ask the children to model their ideas first in paper or card (this mechanism could be used in the final picture or model).
- ★ Talk through ideas with the children as they begin to make and during different stages of making. *How well is this working? What could you do to make it better?*
- ★ Evaluate the final moving picture by discussing strengths and areas for development.

- apply what they have learnt through IDEAs/FPTs in their designing and making
- develop their design ideas through talking and modelling
- choose and use a given technique to make a simple slider or lever mechanism and incorporate it into a moving picture
- evaluate strengths and weaknesses of their product

- essential activities
- ★ assignment stages (all are essential)
- optional activities

