

Inquiry question: Is success the same for everybody?

D and T unit: Pop-up card

Strand: mechanisms

What children will need to already know to access this unit:

Movement can be created in different ways.
That you can move an object without directly touching it.

Why is this unit being taught in this term and links to previous learning.

Links to enquiry question (Is success the same for everybody?)

Links to previous learning (Is it important to belong?/How do stories help shape our imagination?) slides and levers, balloon pneumatics

Links to mechanisms strand in Klmit (Is there such thing as a good person or a bad person?) using cams

Vocabulary

Pop-up	to appear or happen, especially suddenly or unexpectedly.
pneumatics	To create movement using air
lever	A lever can be described as a long rigid body with a fulcrum along its length.
assemble	Fit together the separate component parts
join	Link or connect
strengthen	Make stronger
prototype	A first version
disassemble	Take apart
pivot	A shaft or pin with a pointed end on which something turns
fulcrum	Fixed pivot
Measure	Determine the size of something using standard units
score	To make notches, cuts and lines in thick card to aid folding.
fold	an act or the result of laying one part over or against another

What will children know by the end of this unit:

How a pop-up mechanism works. (levers and linkages)

What children will be able to do by the end of this unit:

- Make a range of pop-up mechanisms.
- Measure, score and fold card
- Design a Christmas card using 2 or more mechanisms.
- Make a pop-up Christmas card.

Images



Years 3/4 Mechanisms Levers and Linkages

Latest CPD

Teaching aids to demonstrate levers and linkages

Making a pop-up from a small section of a recycled box

Tip for teachers

- Give children the opportunity to make examples of lever and linkage mechanisms through focused practical tasks.
- Encourage a practical approach to card making to be used to extend the process.
- Card from recycled packaging is a cost-effective way of providing enough material for children to experiment with different mechanisms and to make multiple card prototypes.
- When working with the card, which can be made for the paper-technology part of a project, ensure that the card is a piece of card that is:
- A minimum 10cm by 10cm and cut out from a rectangular piece of card and glued into the recycled box.
- Wide enough to sit out of the box by about 1cm on all sides so that the mechanism can be seen and tested.
- The hole that the card is cut out of is 1cm wide and 1cm deep.
- Thin enough to be able to be cut with a pair of scissors.
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- Thin enough to be able to be cut with a pair of scissors.
- Thin enough to be able to be cut with a pair of scissors.

Clear and simple mechanisms usually involve levers and linkages.

Lesson in a nutshell

Recap/starting

Learning

Review

Homework

Reflection

Assessment

Resources

Activities

Learning Objectives

Success Criteria

Key Vocabulary

Key Concepts

Key Skills

Key Knowledge

Key Understanding

Key Attitudes

Key Values

Key Behaviours

Key Outcomes

Key Messages

Key Questions

Key Challenges

Key Opportunities

Key Risks

Key Safeguards

Key Considerations

Key Implications

Key Conclusions

Key Recommendations

Key Next Steps

Key Follow-up

Key Evaluation

Key Reflection

Key Discussion

Key Collaboration

Key Communication

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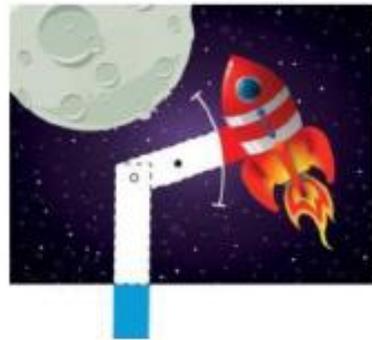
Key

Years 3/4

Mechanisms

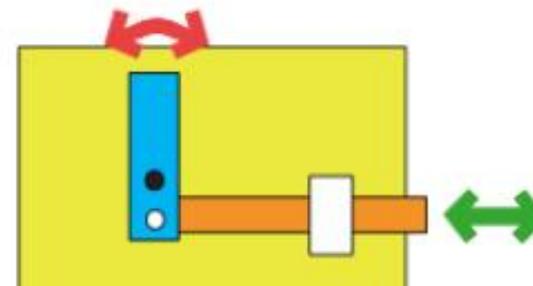
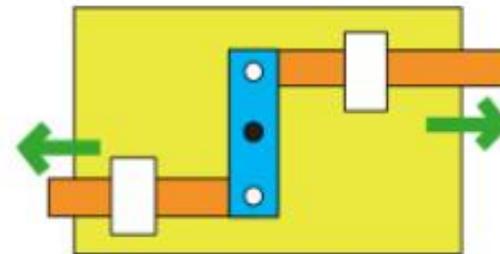
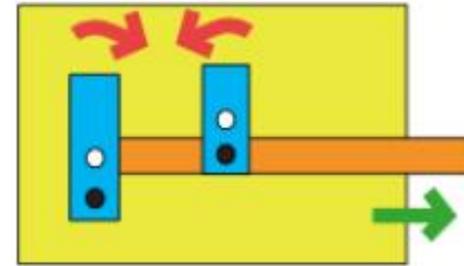
Levers and linkages

Instant CPD



Teaching aids to demonstrate levers and linkages

- Fixed pivot
- Loose pivot



Tips for teachers

- ✓ Give children the opportunity to make examples of lever and linkage mechanisms through focused tasks.
- ✓ Preparing a plentiful supply of card strips can be useful to speed up the process.
- ✓ Card from recycled packaging is a cost-efficient way of providing enough material for children to experiment with different arrangements and to make mock-ups and prototypes.
- ✓ When working with thin card, a hole can be made for the paper fastener pivot by pressing a pencil through the card on to a piece of Plasticine or Blu Tack.

Teacher's notes:

