Which parts of your picture should move?

five hours work
SECTION 1

learning context

design context

Children like looking at pictures and you can use this activity as a learning experience when you ask them to describe what is in the picture, what is happening and what might happen next. Children can be further engaged if they have to compose the picture themselves. If they then have to identify parts of the picture that could move this develops their sense of the narrative embedded in the picture. The production of a picture with moving parts that tells a short story or a simple nursery rhyme will provide the children in your class with an extremely enjoyable and powerful learning experience; concrete in the sense of producing a real artefact but also highly imaginative in conceiving the story of the picture as it happens in real time.

learning purposes

In this unit children will learn:

- about pictures and what they might contain; (Session 1)
- to make a picture by assembling ready made images; (Session 2)
- to make a lever mechanism to cause movement; (Session 3)
- to make a wheel mechanism to cause movement; (Session 4)
- to choose the mechanism that provides the movement they want for their moving picture. (Session 5)
### the small tasks

**the focused practical tasks**

<table>
<thead>
<tr>
<th>Task</th>
<th>Duration</th>
</tr>
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<tbody>
<tr>
<td>Investigating pictures</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Making pictures</td>
<td>40 minutes</td>
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<tr>
<td>Making a lever mechanism</td>
<td>40 minutes</td>
</tr>
<tr>
<td>Making a wheel mechanism</td>
<td>40 minutes</td>
</tr>
<tr>
<td>Writing the specification</td>
<td>30 minutes</td>
</tr>
</tbody>
</table>

**The big task**

**the design and make task**

The big task is to design and make a moving picture that tells a nursery rhyme or a simple story using paper, card, found pictures, found materials and paper fasteners. 60 minutes

- The evaluation 30 minutes
- Unit review 30 minutes

*the lever moving the rocket ship is cleverly camouflaged in its starting position by using a copy taken from the underlying picture. Careful, accurate cutting here and in producing the rocket ship give a very finished final product.*
design decisions

The children can decide on the following:

- what the picture will be about
  required learning in Session 1,
  design decision made in Session 5;

- what images the picture will contain
  required learning in Session 1,
  design decision made in Session 5;

- how the images will be arranged
  required learning in Session 1,
  design decision made in Session 5;
Section 3

**Children’s Decisions**

**Design Decisions**

- Which parts of the picture will move required learning in Session 2, design decision made in Session 5;

- The movement of the moving part of the picture required learning in Sessions 3 and 4, design decision made in Session 5;

- The mechanisms to use for the movements required learning in Sessions 3 and 4, design decision made in Session 5;

- Additional features to improve the picture required learning in Session 2, design decision made in Session 5.
Teacher input

Explain to the class that they will each be making their own picture that will be special in two ways. First they won’t have to draw the picture as they will use cut out pictures from other pictures and second one part of their picture will move. Tell the class that to do this they will need to understand a lot about pictures so the first task is to look at some pictures and see what they tell us. Show the class a large picture depicting a scene from a nursery rhyme.

Use the following questions.

♦ What can we see in the picture? (Write answers on the board)

To help some of the less able or less confident pupils you can point to a part of the picture and ask “What can we see here?”

♦ What is happening in the picture? (Build on the answers written on the board)

To help some of the less able or less confident pupils you can point to a part of the picture and ask questions like “What is this ‘person’ doing?”
investigating pictures (continued)

♦ What do you think was happening in the picture just before what we are looking at happens?
To help some of the less able or less confident pupils you can point to a part of the picture and ask questions like “What was this ‘person’ doing before they were doing this?”
♦ What do you think was happening in the picture just after what we are looking at happens?
To help some of the less able or less confident pupils you can point to a part of the picture and ask questions like “What will this ‘person’ be doing after they were doing this?”

Pupil activity
Tell the class to work in small groups and to discuss which parts of the picture they would want to move to make the picture come alive and show what is happening. Explain that they can use the before and after discussion to help here. A member of each group should explain to the rest of the class which part of the picture they chose to move and why.

Resources
Stimulus: a large picture showing a nursery rhyme scene.

Health and safety check
Discuss the hazards and risks involved in working as a group and how these can be controlled by the way the children behave and treat one another.
making pictures

Teacher input

Tell the class that today they will learn how to make wonderful pictures without drawing. Explain that the method involves using pictures or parts of pictures that have already been made by someone else. Tell them that there are seven simple steps to follow.

- Decide what you want your picture to be about.
- Decide what images will be important for that picture.
- Find some pictures containing those images.
- Cut out the images.
- Assemble the images into a picture.
- Stick the images into place.
- Add any small details that will improve the picture.

Demonstrate these with the following worked example.

I wanted to make a picture about a dog chasing a cat up a tree

I needed to find images of dogs, cats and trees

I looked through magazines and found this image. I chose an image of a dog, this image of a cat, and an image of a tree

I cut the images out carefully so that I didn’t chop off any important bits

I arranged the images on a sheet of A4 paper so that the dog was at the bottom of the tree and the cat up the tree,

I altered the positions a little bit before I stuck them down with a glue stick
Ask the class what they think of your picture and how it could be improved.

Ask the class which parts of the picture they think should move.

Pupil activity

Tell the class to work in pairs and that the task for each pair is to decide on a subject for their picture from the list you will write on the board. Explain that for each subject you have a picture pack that they can use for their images. Tell the class that each pair should produce a picture just like you have done.

Here is a possible subject list:
- Children playing games
- Grown ups playing games
- Pets
- Wild animals
- Farm animals
- Transport

When the pairs have completed their pictures make brief comments to the class about their composition and quality of construction. Put the pictures on display for future reference and use in the next session.

Resources

**Stimulus:** pictures of cats, dogs and trees;

**Consumables:** packs of pictures from magazines concerned with children playing games, grown ups playing games, pets, wild animals, farm animals, transport, A4 paper;

**Tools:** scissors, glue sticks, felt tip pens.

**Health and safety check**

Discuss the hazards and risks involved in using scissors and how the risks can be controlled by taking care and using the correct procedures.
Teacher input

Tell the class that today they will learn how to make a mechanism to move a part of a picture. Tell them that you will begin with your picture from last lesson. Demonstrate how to do this as follows.

1. Decide which part of the picture you want to move. Ask the class whether it should be the dog, the cat or even one of the trees?

2. Lay the lever over the picture so that the class can see how it could be used to move the cat, the dog or a tree.

3. Decide on the pivot point and the length of the lever that will give the required movement. Note the length of the lever will be made up of two parts – the length between the pivot and the moving image plus the length between the pivot and the opposite end of the lever – the part used to operate the lever.

4. Make a hole using a hole punch in the picture and the lever and assemble the lever onto the picture using a paper fastener.

5. Check that the lever gives the movement needed and adjust the position of the pivot on the lever or on the picture as necessary.

6. Find another image of the part of the picture that is to move, cut it out and stick it into the end of the lever.

Show the class how a simple lever pivots about a point and the path of movement of the end of the lever. Explain that by putting an image on the end of the lever you can make the image move across the picture along a curved path.
making a lever mechanism (continued)

Ask the class what they think of your picture that moves and how it could be improved.

Ask the class to comment on how the mechanism could be improved?

Pupil activity

Tell the class to work in pairs and that the task for each pair is to take their picture from the last session and produce a moving version just like you have done.

When the pairs have completed their pictures make brief comments to the class about the movements achieved and quality of construction. Put the pictures on display for future reference.

Resources

Stimulus: your cat and dog picture from the last session plus materials and tools to make lever mechanism;

Consumables: thin card, paper fasteners, packs of pictures from magazines concerned with children playing games, grown ups playing games, pets, wild animals, farm animals, transport;

Tools: scissors, hole punch, glue sticks.

Health and safety check

Discuss the hazards and risks involved in using scissors, paper punches and paper fasteners and how these risks can be controlled by taking care and using the correct procedures.
Teacher input

Tell the class that today they will learn how to make another mechanism to move a part of a picture. Tell them that this time you will use four different pictures of the same thing and a piece of paper with a hole in it. Explain that the mechanism will enable you to show the different pictures through the hole. Explain that the advantage of this mechanism is that it is behind the picture so it doesn’t get in the way of people seeing the picture but the disadvantage is that it doesn’t show the image moving across the picture; just the image changing in one place on the picture. So you can show something getting bigger which might look like it’s coming closer or getting smaller which might look like it’s moving further away. Tell the class that it will be up to them to choose whether to use this mechanism or the lever mechanism from last lesson. Demonstrate how to make the wheel mechanism as follows.

- Start with a card disc that has a small hole in its centre.
- Place the card disc on top of a sheet of A4 paper so that a small part sticks out on one side of the card.
- Push a paper fastener through the hole so that it goes through the sheet of paper as well and fold back the paper fastener so that the card disc is fixed but can be turned as in a thumb wheel.
- Draw one square on the sheet of paper ‘inside’ the area of the card disc but quite near the edge of the disc.
- Open the paper fastener so that you can take the paper off the card disc, cut out the square and reassemble.
- Show the class four pictures of the same thing with the only difference being the size of the images – you can use a photocopier to produce these images – and the largest of the images still small enough to fit into the square cut from the piece of A4 paper.
making a wheel mechanism (continued)

stick the smallest picture onto the disc through the hole in the paper, rotate the disc through 90° and then stick the next size picture of the same object. Repeat the rotation and stick another even bigger picture onto the disc. Finally rotate the disc through a further 90° and stick the biggest picture onto the disc.

show the class what happens when you start with the smallest picture visible and turn the wheel so that the image gets larger. Ask the class to suggest what this looks like.

show the class what happens when you start with the largest picture visible and turn the wheel so that the image gets smaller. Ask the class to suggest what this looks like.

show the class what happens when you start with the smallest picture visible and turn the wheel so that the image gets larger. Ask the class to suggest what this looks like.

Pupil activity

Tell the class to work in pairs and that the task for each pair is to use one of the envelopes of images available and make a moving picture that shows the image getting bigger and smaller just like you have done.

When the pairs have completed their pictures make brief comments to the class about the movements achieved and quality of construction. Put the pictures on display for future reference.

Ask the class what they think of your picture that moves and how it could be improved?

Ask the class to comment on how the mechanism could be improved?

Resources

**Stimulus:**
- four pictures of the same thing but of different sizes plus materials and tools to make wheel mechanism;

**Consumables:**
- card discs with hole in centre, A4 paper, paper fasteners, picture packs of four pictures of the same thing of different sizes, glue sticks;

**Tools:**
- scissors, pencils.

**Health and safety check**

Discuss the hazards and risks involved in using scissors and paper fasteners and how the risks can be controlled by taking care and using the correct procedures.
Teacher input

Explain to the class that now they are nearly ready make their own moving picture and that in order to do this they will need to make decisions about each of the following. Use moving pictures that you or the children have already made to illustrate each of the points in the specification.

♦ What the picture will be about – there is a choice from the following:
  – children playing games;
  – pets;
  – grown ups playing games;
  – transport;
  – wild animals;
  – farm animals;
  – a nursery rhyme.

♦ What images the picture will contain. There should be no more than four.

♦ How the images will be arranged:
  – in a straight line;
  – in a circle;
  – in a rectangle;
  – in a triangle.

♦ Which part of the picture will move. Only one image should move.

♦ How the moving part will move.
  In a curve or in the same place but changing size.
writing the specification (continued)

Resources

Stimulus: examples of moving pictures that you or the children have already made;

Consumables: ‘Moving picture specification’ sheets;

Tools: pencils.

Health and safety check

Discuss the hazards and risks involved in working as a group and how these can be controlled by the way the children behave and treat one another.

SECTION 4

teaching the unit

Pupil activity

Tell the class to get into groups and discuss the answers to these questions.

There is a ready-to-copy tick sheet ‘Moving picture specification’ that each child can fill in to summarise their design decisions in detail.

The mechanism to use to get this movement.

A lever mechanism or a wheel mechanism.

Additional details to improve the picture.

These can be added using felt tip pens or by sticking on found materials. Note that it is likely that these will emerge once the picture is almost complete.
the big task: designing and making the moving picture

Teacher input
Tell the class that each one of them is now in a position to produce the moving picture of their choice. Remind the children to check their picture against this specification as they make it.

Pupil activity
Tell the children to work in pairs as they will be able to help each other even though they will each make their own moving picture. Remind the children that there are packs of pictures available for each of the possible topics and that they can arrange for sets of four pictures of different sizes to be produced by means of the photocopier. As the pictures develop remind the children that they can add special features that will improve the picture.

Extension work
Children who finish early or who need an extra challenge could be asked to do the following.
- Introduce additional moving parts to the picture so that more than one part moves.
- Produce a series of pictures which tell a story with a different moving feature in each picture.

Resources

Stimulus: ‘Moving picture specification’ sheets, examples of pictures for Session 2, examples of moving picture from Sessions 3 and 4;

Consumables: thin card, paper fasteners, packs of pictures from magazines concerned with children playing games, grown ups playing games, pets, wild animals, farm animals, transport, nursery rhymes, card discs with hole in centre, A4 paper, picture packs of four pictures of the same thing of different sizes, found materials such as aluminium foil, string, wool;

Tools: scissors, pencils, hole punch, glue sticks, felt tip pens.

Health and safety check
Revisit the discussion about the hazards and risks involved in using scissors, hole punches and paper fasteners and how the risks can be controlled by taking care and using the correct procedures.
Teacher input
Tell the class that now is the time to evaluate their moving pictures. Explain that to do this they will need to check whether the moving picture did what it is supposed to. Remind them that they wrote this down just before they began to make the moving pictures and that they should use these sheets as a reminder.

Pupil activity
In their groups they should look at and use with the moving pictures to answer the following questions about each moving picture.

- Did you add the additional details you were supposed to?
- There is a ready to copy sheet tick sheet ‘moving picture evaluation’ that the children can use to record their evaluation.
- When the groups have had their discussion ask the class the following questions.
  - How could you make the moving pictures look better?
  - How could you make the moving pictures work better?
  - How could you make the moving pictures last longer?

Resources
Stimulus: the moving pictures made by the children, ‘Moving picture specification’ sheets;
Consumables: ‘Moving picture evaluation’ sheets;
Tools: pencils.

Health and safety check
Discuss the hazards and risks involved in using the moving picture and how the risks can be controlled.
Teacher input

Explain to the class that it is important to think about how to get better at design & technology and that they can do this by discussing the following questions.

- What did you enjoy most?
- What did you find easy?
- What did you find difficult?
- What did you get better at?
- Did you help each other?
- Did you always agree with the other people in your group?
- What could have been done better?
- How could these things be done better?

Pupil activity

The children should discuss the questions in groups and when they have finished you should ask each group to make a short report to the class. Based on these reports the class should agree a statement of improvement for their next design & technology unit.

Resources

None required

Health and safety check

Discuss whether the class used hazard recognition, risk identification and risk control to design and make safely.
## Session 1
- Picture

## Session 2
- Image, speech bubble

## Sessions 3
- Mechanism, lever, pivot, paper fastener, curve

## Session 4
- Wheel, disk, centre bigger, smaller

### Vocabulary
- Picture, image, speech bubble, mechanism, lever, pivot, paper fastener, curve bigger, smaller

### Resources Summary

<table>
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<tr>
<th>Session</th>
<th>Stimulus Materials</th>
<th>Consumable Materials</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>A large picture showing a nursery rhyme scene</td>
<td>Packs of pictures from magazines concerned with children playing games, grown ups playing games, pets, wild animals, farm animals, transport, A4 paper</td>
<td>Scissors, glue sticks, felt tip pens</td>
</tr>
<tr>
<td>Session 2</td>
<td>Pictures of cats, dogs and trees</td>
<td>Thin card, paper fasteners, packs of pictures from magazines concerned with children playing games, grown ups playing games, pets, wild animals, farm animals, transport</td>
<td>Scissors, hole punch, glue stick</td>
</tr>
<tr>
<td>Session 3</td>
<td>Your cat and dog picture from the last session plus materials and tools to make lever mechanism</td>
<td>Four pictures of the same thing but of different sizes plus materials and tools to make wheel mechanism</td>
<td>Card discs with hole in centre, A4 paper, paper fasteners, picture packs of four pictures of the same thing of different sizes, glue sticks</td>
</tr>
<tr>
<td>Session 4</td>
<td>Four pictures of the same thing but of different sizes plus materials and tools to make wheel mechanism</td>
<td>Card discs with hole in centre, A4 paper, paper fasteners, picture packs of four pictures of the same thing of different sizes, glue sticks</td>
<td>Scissors, pencils</td>
</tr>
<tr>
<td>Session 5</td>
<td>Examples of moving pictures made by you or the children</td>
<td>‘Moving picture design specification’ sheets</td>
<td>Pencils</td>
</tr>
<tr>
<td>Session 6</td>
<td>‘Moving picture design specification’ sheets, examples of pictures for Session 2, examples of moving picture from Sessions 3 and 4</td>
<td>Thin card, paper fasteners, packs of pictures from magazines concerned with children playing games, grown ups playing games, pets, wild animals, farm animals, transport, nursery rhymes, card discs with hole in centre, A4 paper, picture packs of four pictures of the same thing of different sizes, found materials such as aluminium foil, string, wool</td>
<td>Scissors, pencils, hole punch, glue sticks, felt tip pens</td>
</tr>
<tr>
<td>Session 7</td>
<td>The moving pictures made by the children, ‘Moving picture specification’ sheets</td>
<td>‘Moving picture evaluation’ sheets</td>
<td></td>
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</tbody>
</table>
links to other subjects

Literacy

This module would fit well with work in all three terms. In term 1 it could be linked to the objectives about reading simple stories and describing the setting and incidents. In term 2 it could be linked to re-telling familiar stories and would fit very well with the Cinderella module of work in Developing Early Writing produced by the DfEE.
**Moving picture specification**

<table>
<thead>
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<th>Class:</th>
<th>Date:</th>
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<tbody>
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<td></td>
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</tr>
</tbody>
</table>

1. **What will the picture be about?**
   - children playing games
   - pets
   - grown ups playing games
   - transport
   - wild animals
   - farm animals
   - a nursery rhyme.

2. **What images will the picture contain?**

3. **How will the images be arranged?**
   - in a straight line
   - in a circle
   - in a rectangle
   - in a triangle.

4. **Which part of the picture will move?**

5. **How will the moving part will move?**
   - in a curve or
   - in the same place but changing size.

6. **What mechanism will be used to get this movement?**
   - A lever mechanism
   - a wheel mechanism.

7. **List any additional details to improve the picture.**
Moving picture evaluation

1. What will the picture be about?
   - children playing games
   - grown ups playing games
   - wild animals
   - farm animals
   - a nursery rhyme.

2. What images will the picture contain?

3. How will the images be arranged?
   - in a straight line
   - in a circle
   - in a rectangle
   - in a triangle.

4. Which part of the picture will move?

5. How will the moving part move?
   - in a curve or
   - in the same place but changing size.

6. What mechanism will be used to get this movement?
   - a lever mechanism
   - a wheel mechanism.

7. List any additional details to improve the picture.

---

1. What was the picture about?
   - children playing games
   - grown ups playing games
   - wild animals
   - farm animals
   - a nursery rhyme.

2. What images did the picture contain?

3. How were the images arranged?
   - in a straight line
   - in a circle
   - in a rectangle
   - in a triangle.

4. Which part of the picture moved?

5. How did the moving part move?
   - in a curve or
   - in the same place but changing size.

6. What mechanism did you use to get this movement?
   - a lever mechanism
   - a wheel mechanism.

7. List any additional details you used to improve the picture.

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