Cyfoeth Naturiol Cymru
Natural Resources Wales

Activity plan

Animating nature through stop motion animation

Time needed for activity

You could work on this over a number of lessons; first discussing stop motion animation and writing a storyboard, before moving onto filming the stop motion animation.

Location

Outdoors and indoors

Context

This activity gives learners the opportunity to become the educator, making a short animation to explain a natural process or lifecycle.

Natural Resources Wales' purpose is to pursue sustainable management of natural resources in all of its work. This means looking after air, land, water, wildlife, plants and soil to improve Wales' well-being, and provide a better future for everyone.

Curriculum for Wales

Science and Technology	Expressive Arts
• **What matters** – Computation is the foundation of our digital world.	• **What matters** – Exploring the expressive arts is essential to developing artistic skills and knowledge and it enables learners to become curious and creative individuals.
• **What matters** – The world around us is full of living things which depend on each other for survival.	• **What matters** – Responding and reflecting, both as artist and audience, is a fundamental part of learning in the expressive arts.
	• **What matters** – Creating combines skills and knowledge, drawing on the senses, inspiration and imagination.

Digital Competency Framework

Completing this activity provides opportunities to meet the following strands of the Digital Competency Framework.

Interacting and Collaborating	Producing
• Communication • Collaboration	• Planning, sourcing and searching • Creating • Evaluating and improving

Objectives

- Learners collaborate to tell a story through stop motion animation by sequencing events and movements in the correct order, expressing their ideas and developing their digital technology skills.
- Learners visualise and gain an understanding of science processes and life cycle concepts.
- Taking ownership of their animation, learners work autonomously to solve problems and think creatively as they work through the animation process.

Resources and equipment

- Digital video or camera on a mobile phone or tablet.
- A stop motion animation installed on the digital device above – tablets, laptops and mobile devices are the easiest to transport around. Examples of apps include:
  - Stop motion studio (free, IOS or android)
  - PicPac Stop Motion & Time Lapse (free, android)
  - iMotion (free, IOS)
  - I can animate app (a few pounds, IOS).
- Small tripod or stand to hold the device steady.
- Craft materials e.g. card, scissors, glue, paint, pens, string, pencils or clay.
- Natural materials e.g. stones, leaves, petals, twigs.

What to do

Explain to your learners that they are going to work together to create a stop motion animation to teach others about a natural process or life cycle.

Ask your learners to explain what the term stop motion animation means? Discuss their answers.

Stop motion animation (also known as stop frame animation) is animation that is captured one frame at a time, with physical objects being moved gradually, by hand, with a picture taken each time the model is moved a little. When the sequence of images is played back, it gives the illusion of objects moving on their own.

Can your learners give examples of any stop motion animations? Professionally made animations include Wallace and Gromit, Fantastic Mr. Fox, Pingu and Shaun the Sheep. There are many amateur examples of stop motion animations on YouTube. If possible, show your learners an example of a professionally made stop motion animation and an example of an amateur version. Ask your learners to reflect on the animations they have seen and discuss their observations.

- What were the differences between the professional and amateur stop motion animations? Professional stop motion animations are usually made with models that have been designed for the animation, created to look like people or animals. However, stop motion animations can be made using any object, with amateur animations often including cut-out pictures or models of people or animals.
- What storytelling elements are included in each animation e.g. characters, narration, subtitles or voice overs?
- How do animators use props, facial expressions and body language to convey a character's feelings or personality?

- Once your learners understand what a stop motion animation is and understand how they are created, divide your learners into small groups. Ask each group to pick a topic or give each group a topic to cover. Topics to cover could include:
  - How do seeds germinate?
  - Life cycle of a frog/butterfly/trout
  - Pollination of plants
  - The water cycle
  - How do seeds disperse?
  - A tree changing through the 4 seasons

Once your learners have agreed on a topic, they should research it using books and websites. What are the key events that happen as part of their chosen natural process or lifecycle and in what order do they happen? Are there keywords which need to be explained? Give your learners time to discuss their ideas and get them down on paper.

Encourage your learners to keep it simple! The simplest concepts are the easiest to animate. They should concentrate on the details of their animation and limit the number of characters/objects to one or two.

Every filmmaker plans their films before they start filming so it's important that learners plan out their stop motion animation before they begin making it. Working in their group, learners should plan their animation by creating a storyboard, a visual representation of how a story will play out, scene by scene. Made up of a chronological series of images a storyboard should include accompanying notes on:

- What props learners might need to make, paint or draw
- A caption in words explaining what's happening
- Information on camera angle
- Information on the motion of the characters/objects within each frame.

Each storyboard frame should encapsulate what is happening in the one scene of the story. The quality of the art in storyboards isn't very important, but ensuring the storyboard explains what is happening and what the audience needs to know is.

This can be achieved by:

- Using a storyboard app
- Creating a template in Word/Google Docs
- Finding and inserting pictures from the internet which encapsulate the different stages in the animation onto their storyboard
- Creating a template of rectangles onto a piece of paper and sketching pictures of the story.

Alternatively, if your learners aren't visual learners but would prefer a written storyboard, they could create a written storyboard by:

- Creating and filling in a table in Word/Google Docs
- Filling in a spreadsheet
- Creating a flowchart which explains the separate steps of the process in sequential order.

Stress to your learners that they are making a short, simple stop motion animation and not a feature film. 6-12 frames should be enough for their storyboard, if they make it too long they might not finish it or they'll lose interest.

Once they have completed their storyboard each group should present their storyboard to the class or to another group. Constructive feedback will help ensure their storyboard covers everything, will help ensure they haven't over complicated things and may help them think about things in a different way. Once they've made any amendments to their storyboard, they are ready to put their ideas into action and start production!

To share the load, ask your learners to allocate tasks to group members.

Things for learners to consider before filming:

- The set - learners will need to design and make the background for their animation on a flat surface which can be left undisturbed. Some groups may choose not to have a backdrop however they should still use a plain background for their animation such as a bed sheet behind their characters and objects. Anything that detracts the viewer's attention from what is being animated will work against the animation. Ideally their set will be set up parallel to a window. Natural light will provide the best video quality.
- Cast and props – be it a cut-out bee mounted on a stick or a re-purposed every-day item, learners will need to find or make props and characters for their animation which can be moved easily and are able to stand up on their own.
- The script - if their animation includes narration or talking, the group will need to assign script writers to write the script for the different characters.
- Time for a dress rehearsal – allow each group time to trial and experiment with their props and equipment. What works, what doesn't? Do some of the props need some extra attention? What angle should the camera be set to get the best shot?

  Learners need to be very clear about what they are going to do before starting the animation. A dress rehearsal, so that any problems can be identified and addressed, is a good idea.
- Time for app familiarisation - Give each group time to familiarise themselves with the stop motion app and investigate its functionality.

Things for learners to consider during filming:

- Positioning props and characters - ensure the children move the objects in a way that will provide a sense of motion when viewed as a finished sequence in the animation. Each frame is taken as if taking a photo, the stop animation app then puts the still frames together to create a simple animation. Depending on the programme, about five frames are needed for one second of animation. To create a smooth video, objects should only be moved a very small amount between each frame. This can be achieved quickly by allocating one learner to set up and take the photos, whilst another moves the props a tiny amount each time. By not capturing any hands on film, it will appear that the characters or objects are moving of their own accord when the film is watched back.
- Don't move the camera – using a camera mounted on a tripod will ensure that the camera does not move whilst learners shoot their film and will help to minimise errors of continuity.
- Take plenty of pictures - the camera on a smartphone or tablet can then be used alongside a stop motion app to animate the story. Ensure learners have adequate space on their device before they start photographing. The more pictures each group takes showing slight movements in their props and characters the smoother their film will be. If the animation is to include a voice-over, depending on the app being used, a minimum of 80 - 100 frames will be required ensure there is enough time.

- Check as they go - encourage your learners to preview their animation as they go along so if they do make a mistake, they can reduce movement between frames before they've gone too far down the line to start again.
- Stop motion filming is very time consuming, learners should take turns in using the equipment and rotate responsibilities.

Thing for learners to consider after filming:

- Voice-over – once the animation is complete, if speech or a narrative is required a learner can take on the role of voice-over artist, reading and recording the script within the stop motion app to explain what is happening.
- Editing – once your learners are happy they have enough photos the app will put the still frames together to create a simple animation.
- Sharing their animation - each group can demonstrate the finished animation to the other groups and self/peer assess the content and production.
- Evaluation - ask your learners to review and evaluate their finished stop-motion animation. Can they think of ways to make their animation better? Is there anything they would do differently next time? What constructive feedback can they provide on another group's animation? If possible, allow time for them to improve their animation based on their reflections and any feedback received.

Suggested key questions

- What will happen in your animation?
- What are the key steps in your animation?
- How will you explain the process?
- What will you say in the voiceover?
- How will you make the movements to explain the life cycle or process?

Adapting for different needs/abilities

More support required

- Give learners some background information on the life cycle or process before they begin so that they can structure the animation around this and limit the number of frames.
- Start off with a sorting activity to put the different parts of the process in the correct order; this can then be used by learners as the structure for the animation.
- Educators to direct each group or scaffold the activity.

Less support required

- Learners can include some written words within the animation to highlight the key features.
- They could provide some extra scenes to summarise how this process/life cycle fits into the context of the wider natural world.
- Learners can be encouraged to animate a more complex process or include details about how or why the process happens.

Follow up activity/extension

- Coordinate the wider group to make a series of animations that can be linked together and then give the more able learners the job of linking them to become a series. For example, if one group looked at pollination, another could look at fertilisation of plants, another seed dispersal and another germination and plant growth. This would show the whole lifecycle of a plant when linked together. This could then be used as a teaching aid for younger groups.
- A camera could be used in a variety of different ways to record and research the habits and behaviour of different plants and animals, and how they and their environment changes over the seasons.

Most tablets, or mobile phones have a variety of different inbuilt options to:

  - record a time-lapse of a flower opening or the tide coming in.
  - a slow-motion video of a bee or insect moving.
  - fixed point photography to show how an environment changes over time.

- Set up a wildlife camera in your settings' grounds or in a local woodland or nature reserve to discover what wildlife visits.

Looking for more learning resources, information and data?

Please contact: **education@naturalresourceswales.gov.uk** or go to **https://naturalresources.wales/learning**

Alternative format; large print or another language, please contact:
enquiries@naturalresourceswales.gov.uk
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