

Recounting Science Investigations through narrative stories or child-led creative approaches.

Case Study: Kirknewton Primary, St. Anthony's Primary & Peel Primary - West Lothian.

This case study will be of interest to staff considering creative ways for children to recount science and STEM lessons.

Rationale

The purpose of this research project was to consider how pupils could more effectively recount their science investigation and lesson outcomes through stories or a child-led creative output, rather than writing a standard science report.

Science communicators have used stories to meaningfully contextualise subject matter for greater depth of understanding. Studies indicate that the use of stories supports processing and recalling information.

Within school's literacy outcomes, recounting involves students orally reconstructing a story. Teachers assess how well students comprehend and can then support them to develop a deeper understanding.

Using this method within a science lesson, this project trialled if pupils could recount their investigation and outcomes, including important details in the correct sequence.

Approach

Primary 1, 3 and 6 pupils at three different schools were chosen to participate in this research to ensure engagement across early, first and second level.

Due to Covid-19, these lessons were supported remotely and included development sessions with teachers, as well as delivering lessons.

All lessons aligned with existing forward plans for added value to the learning experience, rather than an additional deliverable.



What does it cost?

Access to books and supplementary materials which may already be available in school or online.

Where can I find out more?

Read Jules Pottle books:

- Science through Stories: Teaching Primary Science with storytelling
- Science Fiction, Science Facts for ages 5-7 and 8-12.

Associated professional reading articles can be found here:

- [The potential of using a combination of storytelling and drama, when teaching young children science](#)
- [Teaching children science through storytelling combined with hands-on activities](#)
- [Storytelling as Pedagogy: An unexpected outcome of Narrative Inquiry](#)

This case study has been prepared by Nicola Connor. The views contained in this document are those of the author and do not necessarily represent those of the RAiSE Project, Education Scotland, and/or The Wood Foundation.

Kirknewton Primary

Primary 6: When a Leaf Blew In, Steve Metzger – energy and forces topic

The class listened to the story and pupils were asked to consider the sequence of the story or a chain reaction. They then developed their own chain reactions and worked in groups to recount the experience in a way they decided upon. One used the procedural writing technique on how to set up a chain reaction. Another filmed a news report. This led to discussion and deeper conversations over what worked and why than might have occurred during report writing.

Primary 3: Hibernation Station, Michelle Meadows – materials topic

The class listened to the story and developed an experiment around human and natural materials that would make the best habitat for a hibernating dormouse.

They used the story starter: "Dotty the Dormouse was looking for materials for her shelter to keep her warm during hibernation. She..." to support their narrative development. They worked in groups and recounted investigations through discussion.

Primary 1: And Everyone Shouted Pull, Claire Llewellyn – forces topic

The class listened to the story then created a cart, which could be pulled or pushed, using loose parts. They used a storyboard template to recount through drawing and writing, ensuring it included the beginning, middle and end of the story.

Impact

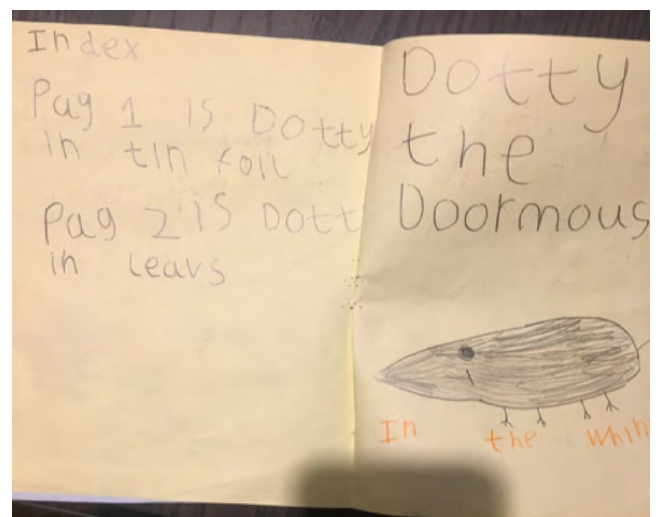
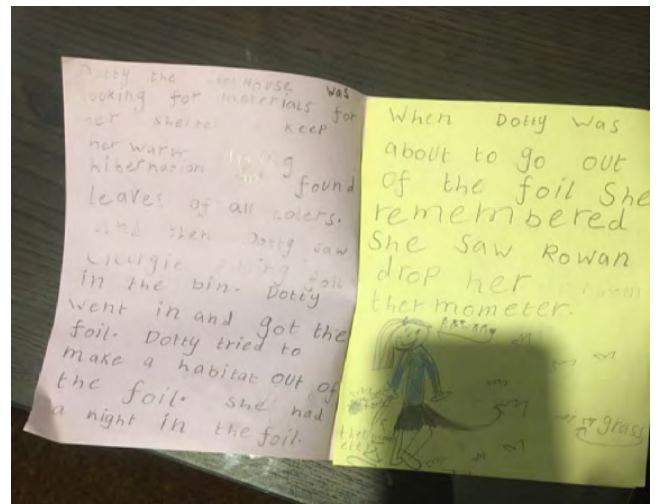
Almost all children said the stories helped them with their investigations. One Primary 6 stated they "thought about the story as they created their chain reaction". They all enjoyed recounting their investigations in different ways, using their "own voice".

The level of engagement and excitement was clear to the PSDO working with the class remotely.

There was clear evidence of team working, communication, and recounting orally for formative assessment.

Examples of work created.

Primary 3 narrative about Dotty the Dormouse.



Primary 1 pupil created a cart for the characters in the story.



St. Anthony's Primary

Primary 6: The Boy Who Harnessed the Wind, William Lamkwamba – sustainable energy and forces topic

After reading this true story, the class discussed sustainable energy and how wind turbines are created. The two P6 classes created mechanisms which pulled a basket up by a piece of thread. The teachers delivered these independently over the course of a week.



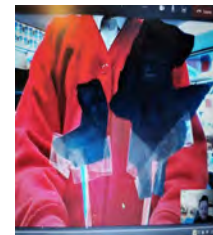
Wind turbines, created in pairs

Primary 3: The Black Rabbit, Philippa Leathers – space and movement of the sun topic

The class listened to the story then discussed what caused shadow and how their shape and size changed before conducting an experiment. They used small torches and objects in the classroom, recording the shape and size as the torch moved. The pupils then drew cartoons or used puppets to recount their findings.

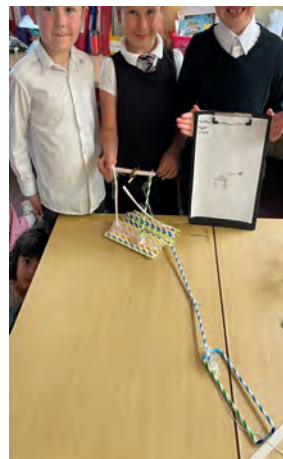


Primary 3 shadow puppets and cartoon strip



Primary 1: And Everyone Shouted Push, Claire Llewellyn - Forces

The class teacher led the lessons and this class decided to work in teams to plan, design and create a cart from the story which could push or pull. They then shared their designs, creations and orally retold their process with the rest of the class, ensuring a beginning, middle and end.



Primary 1 team creations.

Impact

"Throughout the activities the children were engaged and on task and we were more than impressed with the final products that the children produced." P6 teachers

"I enjoyed the story about how William made a wind turbine." "I liked investigating how the angles of the blade affected the rotation when we blew on it". P6 pupils

Subject content, student engagement and participation were regarded as excellent by the P3 teachers. It was seen as was "very beneficial giving children the choice of how they write up their experiment" and that they have learned "to consider using stories as a stimulus, it really got the children talking and thinking".

The Primary 1 teacher was so impressed the class was rewarded with an ice lolly!



Peel Primary

Primary 1: When Charlie McButton Lost Power, Suzanne Collins – electricity topic

Initially, the children listened to the story then were set a scavenger hunt. This was completed at home and focused on electrical items. They considered what would happen if the power went out and they decided to use torches for light. They designed a light box and characters to recount what would happen in the dark.

Primary 3/2: Three Billy Goats Gruff, Alison Edgson — engineering topic

The P3/2 class listened to the story before they designed and built a bridge strong enough for three goats to cross. They used the engineering design process to record their findings.

Primary 6, Jack and the Giant's Peach, Jules Pottles (Science through Stories) – plant life cycles topic

Children read this twist on Jack and the Beanstalk focussing on the life cycle of flowering plants, pollination, and fruiting. They used explanation writing to recount the cycle following a focus on this skills through their writing lessons.

Impact

The story and challenge element enhanced the learning experience for Primary 3/2, leading to additional discussion and understanding of skills and process.

Primary 6 feedback pupils liked the use of the story as an introduction to the topic. The teacher is already considering next steps, including developing a display reference.

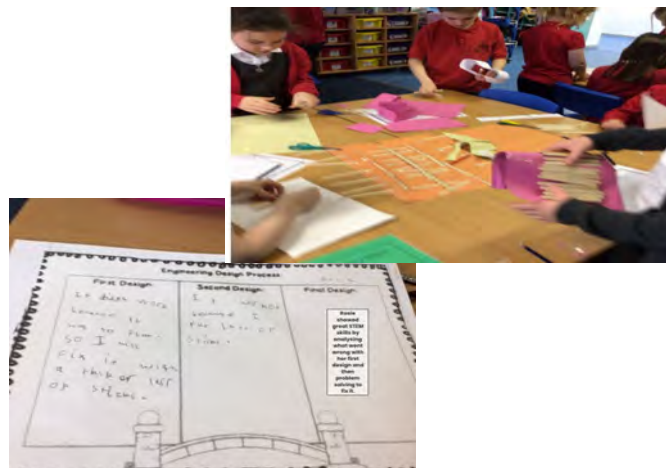
Conclusion

This case study highlights that science experiments and investigations can be retold in creative, child-led ways. This method can be used as formative assessments. Using stories as a stimulus supports the application of literacy and other skills through a meaningful, relevant context.

Primary 1 scavenger hunt.



Primary 3/2 bridge designs.



Primary 6 explanation text and labelled diagram of the cycle.

