

Learning Journey: Investigating snails

Age: 3-4 years old

Learning activities: Designing and planning investigations; Communicating explanations

Creative dispositions: Ability to make connections

Synergies: Reflection and Reasoning

Contextual factors: Group work

Background Information

School setting: A charity run pre-school in a classroom space within a local primary school. A typical day has 24 children aged 3-4 years, with 4 qualified early years practitioners. The children attend on average two to three sessions per week.

Curriculum links: Pre-school aged children in the UK follow the Early Years Foundation Stage framework (EYFS) – the creative dispositions and synergies fit with the EYFS Characteristics of Effective Learning (CofEL):

- Playing and Exploring
- Active Learning
- Creating and thinking critically
- Question why things happen and give explanations. Asks e.g. *who, what, when, how*

Setting the Scene

Focus

My focus for this project was to develop children's *reflection* and *reasoning* skills, to promote consolidation of acquired knowledge whilst providing the children with different experiences to make *connections* and opportunities to *communicate their explanations*. The difference I wanted to make was to develop the children's awareness on how much they have learnt about certain topics – in this example snails.

Rationale

The children were already naturally curious, and displayed strong play and exploration skills. I wanted to build on this in fostering children's abilities to *make connections* in terms of *being a scientist* and using scientific skills, to get them to be more confident in *communicating explanations about* scientific investigations. I was determined to allow opportunity for children's agency, by planning activities based around the children's interests. I also wanted to explore whether the use of floor books and wonder walls would encourage reflection on learning and reasoning and increase the children's skills in making connections and communicating in scientific activities.

Implications for planning and teaching

Due to the age of the children I work with (3-4 years old) and the fact that we now

document each individual child's learning electronically, there are no longer paper records of the children's learning journeys accessible in the nursery. So, I decided to document our different snail experiences with photographs and questions both on a 'wonder wall' display in the classroom and also an A3 floor book – which we could add to as a working document and would be accessible at all times in the book corner. Planning activities based around the children's interests allowed opportunity for children's *agency*.

Outline of learning activities

Starting point:

The topic started from one child's interest who found a garden snail on his walk into pre-school one morning. He carried it around most of the day, chatting to the snail.

Activity 1: Exploring previous knowledge

We explored what we knew, identified gaps in our knowledge of snails and *raised questions*. It gave us a starting point for *planning investigations* to find out more.

Activity 2: Exploring snail anatomy

We used the internet together to find out more about a snail's different body parts.

Activity 3: Making snail slime

I set up an investigation table with some plastic snails and a range of sticky items including: wall paper paste, PVA glue, Pritt sticks, honey.

Activity 4: Caring for our own giant land snails

One of our parents donated two giant land snails. The children were involved in setting up their tank, feeding and bathing them.

Activity 5 and 6: A planned bug hunt + Child-initiated bug hunt

We connected the theme of snails with going on a bug hunt with treasure hunt sheets and magnify glasses combined with an additional spontaneous child-led bug hunt.

Developing the Learning Journey

Starting point

Rationale: This topic started from one child's interest. Kaleb found a garden snail on his walk into nursery one morning. He carried it around most of the day, chatting to him, he gave him a name (Turbo) and even kept him on the table when doing a puzzle with his friends. I wanted to use the situation for fostering children's *agency* and *reflection* and *reasoning* skills.



“This is my snail Turbo; he’s like the one on my telly!”

Activities: Following this starting point I planned a sequence of related activities around, and developing from, Kaleb’s interest in snails, which led to exploring snails’ anatomy, making snail slime, caring for our own giant snails and bug hunts.

Developing the learning sequence

Learning activity 1 – Exploring previous knowledge

Rationale: What did the children already know about snails? This provided an opportunity for us to share what we knew, spot knowledge gaps and *raise questions*. It gave us a starting point for *planning investigations* to find out more.

First I asked the children if they could name any parts of the snail. A few children knew the shell. One child said snails ate his grandad’s plants! Everything the children already knew about snails we celebrated and made a note of on our snail wonder wall display.



Photo 1: Our wonder wall

Kaleb and his friends were very interested in the mucus the snail made, and also the fact that the snails 'horns' popped in when you poked them! From their interest I decided to

focus on learning more about snails and capturing the opportunity to develop children's reflection on their learning. Any questions the children asked, I wrote down and added to our washing line of questions on our 'snail wonder wall'. Whereever possible we looked up answers to the children's questions straight away. Here are some of the questions and statments the children posed – that began our snail adventure.

“Yuck what’s this sticky stuff on my hand?
Is it snail wee?”

“How can Turbo climb up the wall without falling off?”

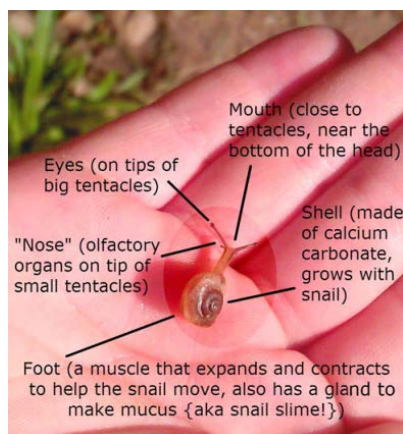
“His horns suck in when I poke them – look....”

Reflections: Through their observations of the snail, children formulated relevant questions and provided a starting point for our snail adventure. I also noticed that the children’s *curiosity* enabled them to easily *share their questions, thoughts and ideas*.

Learning activity 2 – Exploring snail anatomy

Rationale: In order to find answers to chislrn's question and satisfy our curiosity, we used the internet together to find out more about the snail's different body parts.

We learned a snail has one foot, eyes, nose and a mouth like us – although the eyes are on the end of their tentacles – the children *made the connection* that they had been poking 'Turbo' in the eye to make his 'horns' go in and stopped this game straight away. The children added the picture of the snails anatomy to the wonderwall and we also started our floor book. The thing that really captured the children's curocity was the discovery that snails make slime in order to move and it is so sticky they can even climb vertically.



“He doesn’t like his eyes poked – he hides them!”
Kaleb said.

Reflections: This was particularly exciting as it shows the child had reflected on his learning and was able to articulate his understanding 😊

Learning activity 3 – Making snail slime

Rationale: The children's interest in snail slime informed our next activity. Following a recap discussion about how snails need slime/mucus to move along on their foot and how snails can climb vertically up things, I set up an experiment table with some plastic snails and a range of sticky items the children had suggested: wall paper paste, PVA glue, Pritt sticks and honey.

I then challenged the children to make their own slime and see if they could get the plastic snails to stick to the door or window! I stood back and let the children experiment thus providing enough space and time for their own agency.

The children all had different ideas; some tried the PVA glue, others the Pritt stick. They weren't familiar with wallpaper paste and although once mixed it was a great slimy consistency, with no adult direction they had added too much water and it wasn't as sticky as it could have been!

The children were not put off when they did not succeed at first – they kept going trying different ideas. A selection of the following pictures were added to both the wonder wall and floor book.



Photo 2: Mixing different 'sticky' items



Photo 3: Maddi making connections

Maddi (aged 38months) used her own initiative when the wall paper paste didn't work; she used a piece of blue tack from a poster!

Brilliant! She knew blue tack was sticky; she used her prior knowledge of blue tack to stick the snail on the door. This demonstrates her ability to make connections.

Jake (aged 47 months) decided the slimy wall paper paste on its own would not hold the snail's weight on the door – so he tried mixing all three glues together.

“I’m going to use both this slime and glue then it’ll be extra sticky!!”



Photo 4: Jake mixing three glues together



Here is Kaleb achieving success!

“He’s stuck - I’ve done it! “

Photo 5: Kaleb's success

Reflections: I was very excited to see that Maddi used her own initiative and took some blue tack from a poster. And what great critical thinking and determination - Jake discovered one glue wouldn't work – so he tried them all.

Learning activity 4 – Caring for our own giant land snails

Rationale: Once parents heard about our snail-related activities one of them donated two giant land snails. I was happy to seize the opportunity to expand children's reflection on snails by having snails in the classroom and by caring for them.

We set them up in an old fishtank, the children gave them names - Squishy and Squashy. The whole class learnt how to care for the snails over the next few weeks taking turns in feeding and bathing them. The children added pictures of Squishy and Squashy to our wonder wall and their floor book.

Jake was very excited to observe that the snails had eaten through the chunk of cucumber leaving behind the outer skin and a great cylinder shape.



“Look at the cucumber
it’s a cylinder!! How did
they eat it like that?”

Photo 6: Snail's eating habits and shapes

This surprising discovery sparked a discussion about shapes. The children were also fascinated by the fact that even though they could not see the snails' mouth the snails had produced this shape by eating. This brought about yet more children's *reflection* about snails' body parts. We discussed again about how snails move with slime and our slime experiments the day before.

Here is Kaleb taking his turn at bathing our giant land snails.



“[Squishy and Squashy] cos that’s what their slime feels like!”

Photo 7: Bathing time

Reflections: Parental support has helped us keep the snail theme alive & interesting 😊 The children’s decision on the land snails’ names and their explanation show again how they reflected on their learning about slime and also how they reasoned their choice of the snails’ names.

Learning activity 5 – A planned bug hunt

Rationale: Later that week I decided to connect the theme of snails to going on a bug hunt - we supplied the children with treasure hunt style sheets and magnify glasses.

Before we set off the teachers discussed the sheets with the children as a large group. We talked about each insect on the sheet, to find out which insects the children could name. We asked questions such as where we might look for each insect. Once outside, the children went off in small groups accompanied by a teacher.





“Look
woodlice
1,2,3,4



“I’ve seen a
worm, a snail
and some ants”

Photo 8: Children sharing their discoveries

Reflections: The children showed they had retained the information that insects like dark places and begun turning over logs and stones in their search. We found worms, slugs, snails, wood lice, a ladybird, ants and a butterfly.

Learning activity 6 – child initiated bug hunt (on another session)

Rationale: The children were playing in the garden when they found another snail. This was a spontaneous activity rather than a planned one.

Kaleb and Jake discussed whether or not the snail they had found was Turbo from the other day. Kaleb decided he was and that he had come back to see him. Having had the experience of meeting and making friends with Turbo, the whole class was prompted to make connections to their own snail while exploring other bugs. Thus they *reflected* on their previous learning about snails/Turbo and communicated their explanation and agreement on recognising one of the snails as Turbo.

The children found three snails in total, the first snail (Turbo) started crawling away and Kaleb insisted that the snail (he believed was Turbo) needed to stay with him and the other snails as well - because they were all friends! 😊



“Look I’ve found Turbo.
He’s come to see me
again!”
Kaleb told Jake.

“Mine is small he
must be a baby!”

Photo 9: Children's reasoning in action

The children were very intrigued to find one of the snails completely immersed in water. Children's interests of finding snails under water prompted further explorations and connections; we researched that although garden snails cannot swim, they do like to be bathed and drink water – (like Squishy and Squashy).

“I think he’s having a drink!”
Jake said.

Maddi, although involved in the hunting, was not quite so sure about actually touching the snails. However, when one began to wander off she did pick it up – she was quite fascinated he had gone inside his shell! Her explanation/*reasoning* of the snail disappearing inside its shell or as she put it hiding, links back to our previous lesson on snails body parts. She has made connections and reflected on her learning about shells.



“He’s hiding in his shell –
he’s scared”
Maddi told me.

Photo 10: Maddie's reasoning

Reflections: The children were connecting skills from previous learning and communicating their own explanations and understanding.

Overall Reflections

Our snail theme has covered lots of other areas of learning and we have shared lots of different snail books both fact and fiction. Below are some examples.

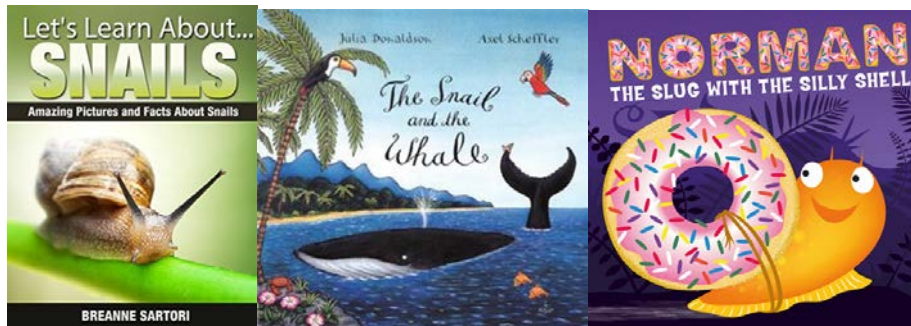


Photo 11: Useful books for learning about snails

The children have drawn snails, painted slime trails, made snails from play dough and different construction resources:



Photo 12: Drawing snails, Making snails from play dough, constructing snails with the hex shapes

The Wonder wall

I had not used a wonder wall before with children of this age, initially they were excited to see their questions being valued and placed on the board. They also liked choosing different pictures to go on the display. The board itself changed as we covered different activities but after a few weeks they seemed to lose interest in it. I feel this was mainly due to the age of the children. On reflection, there was a lot of writing on the board and not as many pictures as the floor book (see picture below). Also, the height of the board itself may have played a part.



Photo 13: The Wonder wall - many written questions and just a few pictures

Sharing the Floor book

The children were very involved in choosing photographs to go into our snail floor book. They helped stick them in and have a real sense of ownership about 'their book'. The floor book is kept in the book corner, the children have constant access to it. Here are some pictures of the children discussing the snails together.

“Snail’s eyes are on the end of these (pointing to the tentacles)”



Photo 14: Sharing the Floor book

Here you can see Kaleb really connecting his learning about Turbo through showing the photos to Maddi. He also helped another school friend remember the 'right' name of a snail's body part (tentacles) by reflecting on what they learned through browsing the photos. These pictures demonstrate how the floor book helps young children consolidate their knowledge through reflecting on their learning prompted by photos.



Children's progress

Choosing to build a range of activities based around the children's interest has ensured the children are really engaged in the subject. They were really motivated particularly during the slime experiment which they demonstrated by their high levels of energy and fascination and the fact that they maintained focus on their challenge to make the plastic snails stick to the door. They kept on trying, even when challenges occurred. They were so proud when finally they made their snails stick.

The children use the snail floor book to reflect on their experiment. When they look through it the pictures prompt them to talk about Turbo (the original garden snail) and where he might be. I have also observed the older children 'teaching' some of our new, younger children all about a snail's anatomy.

Kaleb was highly motivated throughout the whole learning sequence because the interest in snails started with him. As we began to learn about a snail's anatomy Kaleb soon reflected "He doesn't like his eyes poked – cos he hides them!" On another occasion, he also helped his friend remember the word 'tentacles'.

Maddi's confidence with hunting for bugs grew throughout this project. She made the connection that the snail was 'hiding' in its shell. She also displayed amazing initiative and really thought out of the box when she used blue tack to stick her plastic snail to the wall in our experiment.

Jake demonstrated great perseverance and reasoning skills by mixing three sticky glues together when his first attempt failed. He also was instrumental in naming the land snails, connecting his previous learning about slime and general descriptive language to name them 😊

Teacher role

My aim was to develop children's reflections on their learning whilst providing them with different experiences to *make connections* (creative dispositions) and opportunities to *communicate their explanations* (feature of inquiry) through science based activities. The difference I wanted to make was to develop the children's awareness on how much they have learnt about certain topics in order to build on their knowledge in the future – in these examples snails.

I have achieved this in the following ways. I have planned scientific experiences linked to the children's interests, for example learning about a snail's anatomy for 3 and 4 year olds is early Biology. Making the sticky snail slime is early Chemistry. Generally encouraging a scientific investigative ethos and creative thinking skills through modelling and thinking out loud as well as discussing as a class what we have learnt/discovered at the end of each session.

I have made a 'wonder wall' display of different questions the children have asked about snails, with pictures of our experiments and the answers we have discovered together. Although the children were involved in putting 'their questions' on the wonder wall – this display has not been as successful in stimulating reflection as the floor book.

By far the most powerful reflective resource has been the introduction of floor books. Large A3 books available at all times in our book corner alongside our fact and fiction books. The snail floor book captures our snail journey and shows pictorially the children's learning journey. When the children look at the floor books either with their peers or with a teacher they talk about the different activities we have done and are able to share their knowledge with others really connecting what they learned about snails and recalling what we learned from the first to the last lesson.

I made this book in November 2015 and have kept a tally chart of the different children and the amount of times it has been accessed over a period of three terms. Here is a summary of the data collected:

Table 1: Data about the use of the floor book (collected over three terms)

Terms	Number of children	Total number of times the book has been accessed	Total number of times focus child Kaleb has accessed	Total number of times focus child Maddi has accessed	Total number of times focus child Jake has accessed
Term 2 (7 weeks)	28	99	11	13	7
Term 3 (6 weeks)	28	140	13	19	9
Term 4 (5 weeks)	28	43	5	5	3

I have been amazed at the amount of times it has been looked at. During term 3 we added lots of new pictures; each time they were added to renew the children's interest in it. I had to ensure all of the children had at least one photograph of themselves in it as one child was very disappointed that he had not seen himself in the snail book! It has proven so popular, that we have made several others this school year – one showing our ice theme, another recording our forest school adventures.

Our first floor book - the snail book - the children are still accessing a couple of times a week even nine months later. They love to 'read their book', the children (particularly Kaleb) love it. Here he is sharing the floor book with others, even taking it to read on the 'bus'!



Photo 15: The Floor book on the 'bus'

In summary, I worked in the following ways:

- Continuous assessment
- Recording observations
- Questioning
- Observing focus children
- Developing the children's scientific thinking skills

Classroom environment

My classroom operates completely free-flow meaning the children have the opportunity to move freely throughout the indoor and outdoor environment and between these two environments. This allows children to choose what and where to play and how to combine materials and resources. The slime experiment we limited to six children at a time, purely because we only had six plastic snails. The children experimented with their slime on a first come first served basis – if they expressed an interest in taking part. They were not grouped according to ability or friendship groups.

Next steps for learning and teaching

Look at other bugs/insects in more detail – for example start an ant farm, wormery, grow our own butterflies, build a bug hotel. These activities will encourage insects in the nursery garden and will teach children to show care and concern for living things and our environment in general.

Further opportunities to explore scientific activities – linked to a story. Look into simple change of state experiments such as erupting volcanoes – as the children enjoyed our slime experiment – and love messy activities.

Reflection questions for the reader

- How would you use one child's interest to develop a learning sequence with a scientific focus?
- Do you currently work in this way? If not what is stopping you?
- What is the interest?
- Where would you start?

Practical Information

- Snail research - Internet, websites on snails, books
- Actual snails (garden snails and giantland snails)
- Snail & other bug hunting – magnifying glasses, picture check list.
- Books snail and bug related – fact and fiction. For example (The snail & the whale and Superworm – Julia Donaldson)
- Vivarium & snail food
- Sticky items to mix to make snail mucus e.g. PVA glue, wall paper paste



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