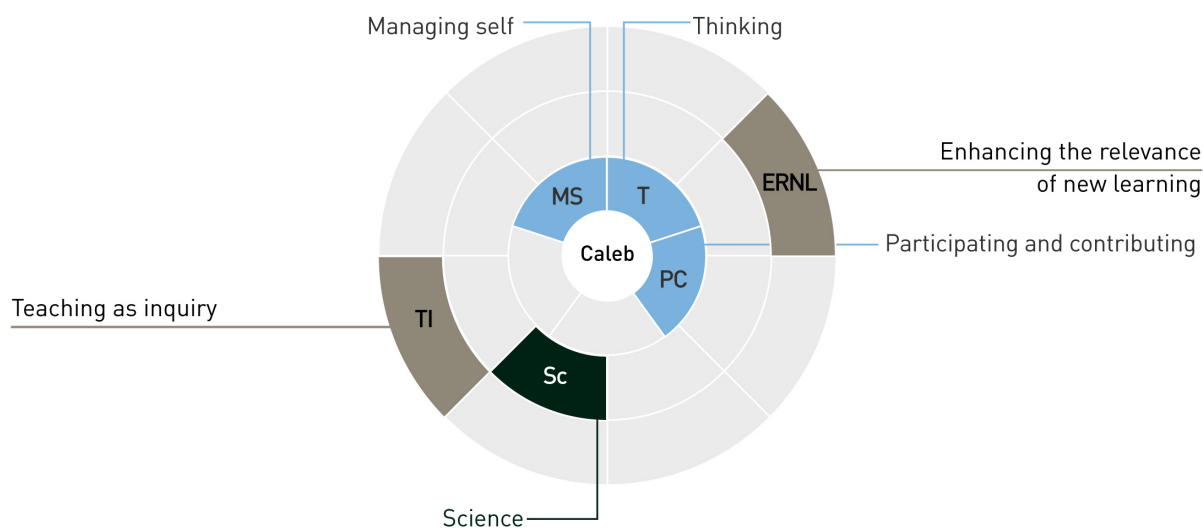


Caleb in the garden

Links to the curriculum



Student background

Name	Caleb	Caleb lives at home with his mother, father, sister, and a dog that he adores. He loves cars, trucks, and Perceptual Motor Programme (PMP) time at school. . Caleb has global delay and wants to drive buses when he is an adult.
Age	8	
Year	3	
School	Primary	

Caleb is in a class of 28 children in a large primary school. The school receives 0.1 FTTE teacher support from ongoing and reviewable resourcing schemes (ORRS) funding and 12 hours of teacher aide time.

This string of stories came about by chance. The gardener offered us a garden plot and Caleb enjoyed working in the garden so we ran with that idea. In this string of stories Caleb chooses some suitable vegetables to plant, takes an interest in worms, and finally picks and eats some vegetables for which he has been responsible.

Three learning stories

- 1. Planting a vegetable garden** 7 April 2008
- 2. Making a worm farm** 26 May 2008
- 3. Boiling the broccoli** 29 August 2008

This string of learning stories shows Caleb enjoying the opportunity to learn outside of the classroom (managing self). He was motivated to join the garden club and has been going to most of the planting sessions – usually just for a short period of time (participating and contributing). We were also impressed by Caleb’s curiosity and decision-making (thinking).

Planting a vegetable garden

Student	Caleb	Date	7 April 2008
		Observer	Jenny (ORRS teacher)

All classes in our school are growing a vegetable or herb garden. There were two spare plots and our gardener offered them for our use. I took Caleb to his vegetable plot. He was excited at the idea of being in the garden rather than reading. We discussed the various vegetables that would grow over the cooler months of winter and Caleb then chose which vegetables he wanted to plant. He chose broccoli, leeks, and bok choy, because he did not know what they were. After a discussion about how large the plants would grow, he dug holes where he felt the spacing would be right. I showed him how to dig deeper, rather than raking across the hole. Caleb was interested in the feel of the soil on his hands. It was a good coordination task holding the seedling and filling in the hole.

We saw some worms in the garden. Caleb said, "No" and stepped away when I suggested he hold one. He was interested in what would happen to the worms when they went back into the soil. This might be a good direction to head in the future.



Analysis – what learning is happening here?

Key competencies

Managing self

Caleb showed he was keen to try new things and showed an interest in the world around him.

Caleb made some sensible choices when faced with a decision (trying to grow things he does not know) and expressed an interest in what may happen in the future (wanting to dig up the worms in the soil to see what they were doing).

We may make a worm farm later in the term. I was impressed with his attitude.

Learning areas

Levels 1 and 2 science: Living World: life processes

Caleb recognised that plants have certain requirements. Cold weather means that many plants will not survive. Plants also require a certain amount of room to grow well.

Where to next?

Scaffold

We will watch and tend the plants.

We will cook and sample different vegetables in preparation for cooking our own.

Caleb is interested in making a worm farm to see what worms do in the soil.

I would be interested in looking at ways to get rid of snails without using chemicals.

Making a Worm Farm

Student	Caleb	Date	26 May 2008
		Observer	Jenny (ORRS teacher)

Today, Caleb and I made a worm farm. We went outside in the freezing wind and dug out some soil from an empty vegetable patch. Caleb was a little upset at how badly the snails have been eating his plants. We'll do something about this soon. Caleb squashed the soil into the thin glass worm farm container. I explained he needed to press it in firmly so we could see what happens in the future. The following day I brought some worms from my compost pile. Caleb counted them, thought they were very squishy, and put them into their new home. He helped put black paper around the outside.

I asked him some questions:

"What do worms eat?"

"Do worms have eyes?"

"How do worms move?"

"Why are worms useful?"

I recorded some questions he had about the worms:

"Do worms have legs?"

"Do worms have a tail?"

"Do worms have a bottom?"

We shall attempt to find the answers in the next few weeks.



Several days later, we removed the paper and saw the worms in their tunnels. I read some pages out of a worm book and Caleb discovered that worms wiggle forwards and backwards in their tunnels. He thought this was a pretty cool trick.

Footnote: Caleb had an opportunity to share some of his new knowledge with some classmates a couple of weeks later. With prompting, he was able to tell them where worms live, how they move, and that they have bottoms and no legs. He also showed them the tunnels in the soil of the worm farm.

Analysis – what learning is happening here?

Key competencies

Thinking

Caleb was able to think of some questions he wanted answers to.

Participating and contributing

We are building on Caleb's initial interest in the worms from when we planted his garden last term. Caleb has also decided to join the garden club and is going to the lunchtime sessions. Well done Caleb!

Learning areas

Levels 1 and 2 science: Nature of Science: understanding about science

Caleb is realising that by asking questions we can learn more about the world and environment. We will look for answers in several areas and I am hoping he can present his new knowledge to his classmates or buddy class.

Where to next?

Scaffold

I would like Caleb to find the answers to his and my questions and then show his worm farm and share his knowledge with some other children. I will encourage him to find some worms at home to add to the farm. I will talk to his parents and see if they compost or can continue his interest at home.

It will be fun harvesting the vegetables in spring – providing the snails keep their distance.

Boiling the broccoli

Student	Caleb	Date	29 August 2008
		Observer	Jenny (ORRS teacher)

Today, the school gardener let us know that the broccoli was ready to pick. Caleb was thrilled to hear this. We went out to the garden armed with secateurs and a bowl. Caleb told me he liked eating broccoli – so I knew he would recognise it in the garden. Sure enough, after a brief hunt through the vegetables he was able to point to it.

Caleb was keen to have a quick taste so I gave a small piece a wash then let him try it raw. He ate it without comment. I then cut off a larger piece and asked him what we would need to do before we ate it. He told me it needed cooking.

We took it to the staffroom and Caleb found a suitable saucepan. There was no matching lid, so we discussed sizes – too big, too small. I told Caleb the broccoli would be ready to eat when the water turned green. He predicted it would take five seconds. After about 10 minutes he noticed the water was changing colour. I drained the water and he tested whether the broccoli was ready by pushing a fork into the stem. We cut it into two pieces. Caleb ate both pieces very quickly. He sure loves broccoli. He then wanted to eat the teacher's food that was sitting on the bench. We washed and dried the dishes together. He is now very keen to pick the rest of the vegetables and to have a big cook up.

At the following PMP session he told the other children all about his broccoli and how he cooked it. The others were impressed and now want to do the same. I suggested to Caleb he could help them. He was excited and questioned, "Now?"



Footnote: Two weeks later there was more broccoli to pick. Caleb and three other children picked and cooked it. Caleb really enjoyed being the “big brother” and helping them to cut, cook, and eat. This has been a nice chance for him to have a leadership role.

Analysis – what learning is happening here?

Key competencies

Managing self

Caleb was very motivated to cook and eat the broccoli. He was able to wait patiently until the water had changed colour and was happy to tidy up after himself by washing the dishes.

Learning areas

Levels 1 and 2 science: Living World: life processes

Caleb has learned that it takes time and certain conditions for vegetables to grow. He observed the results of snails in the garden.

Levels 1 and 2 science: Material World: properties and changes of matter

Caleb is now aware that boiling the vegetables changes how they taste. He preferred the taste after cooking.

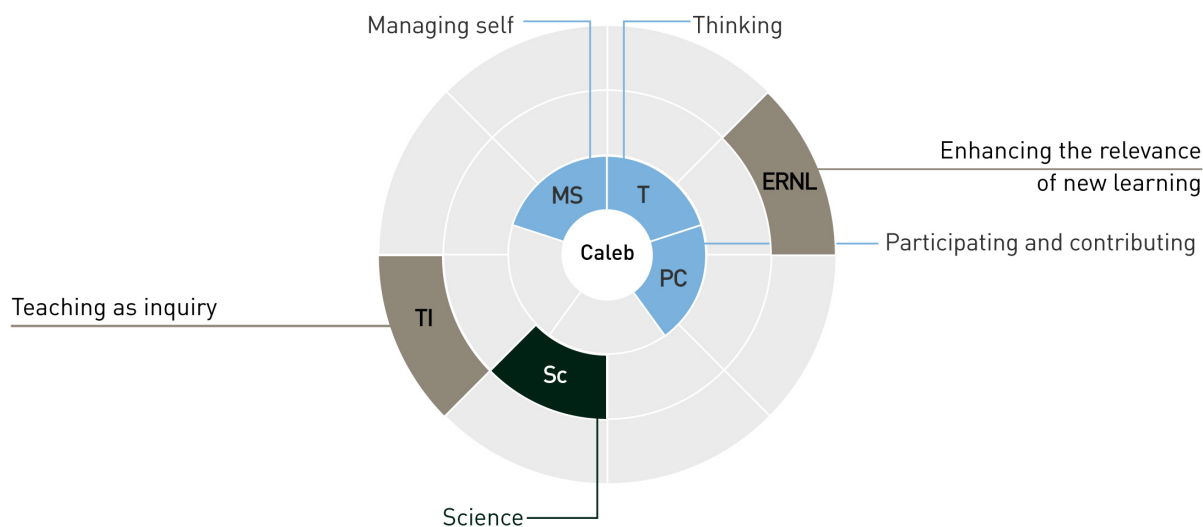
Where to next?

Celebrate and consolidate

Caleb has really enjoyed working in the garden and trying different foods. I will link this interest to another string of stories about developing social skills. Caleb is keen to help the other children cook some food.

His parents may be interested in giving Caleb a small area of the garden to grow vegetables and herbs.

Reflection – what these stories exemplify



Key competencies

During the past four months, Caleb has demonstrated the key competency: participating and contributing, by becoming a gardener. He has shown an interest in the garden and a willingness to try new things, such as planting vegetables, with which he is unfamiliar, touching and learning about worms, and becoming a member of the garden club (managing self). I was thrilled Caleb was so keen to help other children pick and cook the broccoli. Caleb was feeling confident he could help the others.

Caleb displays thinking by making sensible choices when deciding which plants to grow, wanting to dig up the worms to see what they were doing and devising some questions he wished to find answers for.

How might these stories strengthen Caleb's identity as a learner?

This string of learning stories describes Caleb's ability to use his initiative (agency) with his questions about the worms, his interest in gardening, and subsequent joining of the garden club, and his offer to help the other children to cook up some broccoli. Caleb has also expressed interest in making a garden at home.

Caleb has shown continuity, as his interest has spanned several months. Caleb worked with the gardener, his ORRS teacher, and other students, both in the garden and then cooking when the plants were ready (depth). A large part of his motivation is in the eating of the food – I do not think a flower garden would have produced the same level of interest.

For more information on the four dimensions of agency, breadth, continuity, and depth (ABCDs), refer to *Narrative assessment: a guide for teachers*.

Learning areas

Levels 1 and 2 science

Caleb has been learning and exploring the living world – he realises that plants need certain conditions (some plants will not grow in winter). He has considered how big the plants will grow and planted them accordingly. Caleb is also now aware that some plants take longer to grow and are eaten in different ways (raw and cooked).

Caleb has been able to set himself some questions about worms. We read books and asked people to find the answers (nature of science). He found it difficult to share his knowledge but was prepared to give it a go.

Effective pedagogy

What does this tell us about teaching and learning in this setting?

The teacher was prepared to follow Caleb's interest; to find out things together and capitalise on opportunities as they presented themselves, for example, school garden project, worms, and the interest shown by other students in Caleb's learning (teaching as inquiry).

This string of stories lent itself naturally to revisit the learning because of the need to tend and watch the plants and to prepare them when they were ready to eat (enhancing the relevance of new learning).

Reflective questions for the reader

"In what ways can we best use the skills and expertise of the ORRS teacher to support children's learning?"

"Do you have the flexibility to follow the interest of your students while taking note of school-wide projects?"

Useful resources

Ministry of Education. (1999). *Guidelines for environmental education in New Zealand schools*. Wellington: Learning Media.

Ministry of Education. (2001). *"Earthworms" Making better sense of the living world, pp. 100–106*. Wellington: Learning Media.

Enviroschools. www.enviroschools.org.nz