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The tides: An investigation of inquiry and discovery

by Emma Parsons

The tide investigation started in March of this year and is still being investigated by the four-year-old children at Sophia Preschool. It has become an ongoing dialogue between the children, parents, and teachers as they make connections between home, preschool, and their geographical and cultural context.

It seems only natural that a preschool situated in a coastal seaside village makes it an annual tradition to visit the local beach environment to complement the children's and teachers' interests and delight as they return to preschool at the height of the summer season.

The coastal environment is very much a part of the lives of the teachers and families of Sophia Preschool and throughout Aotearoa/New Zealand. With an exceptionally large coastline packed with deep coves, bays, beaches, intricate harbours, and steep fiords, New Zealand's coastline plays an integral part in shaping our learning environments, our culture, and our identity.

The power of observation

During our excursion to the local beach, only a short walk from the preschool, Adrienne, a fellow colleague, observed Ellie with intrigue, watching her examine the incoming tide intently as the waves crept closer, beginning to cover the rock pools where we had been exploring only minutes prior to this. Stirred by this observation, Adrienne and Ellie engaged in a discussion about the tides. Adrienne informed me the following day of Ellie's inquisitive observations, knowing that this could be an opportunity to dig deeper into this often overlooked aspect of the marine world within a culture of enquiry.

Often sea animals and shells take precedence in marine investigations due to the strong interest and

fascination always shown by young children. It was exciting to see this group of four-year-old children going deeper; looking further than on the surface, asking questions such as, "How do tides work?" and "Why are their tides?"

Childhood memories

Working with children I find myself fondly reminded of things from my own childhood, memories evoked by reliving these experiences alongside the children I spend my days with at preschool. Listening to the children sharing their thoughts about the tides sends a flood of memories of my own childhood spent at the beach.

Living near the ocean as a child, my parents enjoyed going for evening beach walks even at high tide. I remember being absolutely frightened as the tide would rush in and up to the sand hitting the dunes. Crying hysterically I was sure the tide was going to wash my entire family out to sea. At such a young age I was fully aware of the power of the tides. As we embarked on our discovery about how tides work, I realized that I actually had limited knowledge about this incredible element of nature. Motivated by this fact, I was inspired to learn more about my own social and cultural context and make meaning of the world around me and support the children in their endeavours to do so too.

Engaging in group dialogue

I wondered if the rest of the children in the four-year-old group would be interested in this idea as well and decided to provoke them with Ellie's question, "How do tides work?"

Violette: There's tides coming up all the time Mumma says.

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She is passionate about the Reggio Emilia Philosophy and is inspired by the arts. She values the importance of documentation and making learning visible to children, their families, and the local and global community.



Beginnings Workshop

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Ellie: A tide makes the waves go bigger and it's the wind and the moon.

Alana: The tide is the water comes closer and opener and opener.

Jaxin: It's just waves because the tide's coming closer.

Alana: The tide's blue, my favourite colour! It is when the water comes in and to the beach.

Timmy: You can call it the tide came in.

Ruby H.: It comes in and it goes out sometimes. I know because I saw it.

Alana: There are tides in Rarotonga.

Timmy: And in New Plymouth!

Emma: What do you need to make a tide?

Timmy: You need water, salt, and the sea creatures to make a tide.

Alana: When the tide goes out it goes to sleep.

Riley: Nooooooooo!

Kohen: Yeah. It pulls the waves out.

Alana: Tides wake up when we do.

Ruby S.: When the tide comes up you've gotta run up the beach. You can see the tide only when it comes in.

Riley: Yeah. It makes bubbles. That's how you know it's in. The sea makes the tide move.

PHOTOGRAPH BY THE AUTHOR



Ahi: You can tell the tide is coming in if it rains. It makes more sea. Now it's raining. The tide will be coming in.

It seemed that there was sufficient evidence from the children's dialogue to be sure that the subject of tides was a genuine interest. And so the decision was made to pursue what we knew would be a challenging and even difficult investigation and bring the question of how and why the tides change to the combined group of four-year-old children.

The thinking and learning journey

Responding to their interest we began to plan possibilities together, teachers, parents, and children, immersing ourselves in the world of the tides. We spent a period of time brainstorming all the possibilities we could explore to find out more about our topic of interest. With the input of the children, teachers, and parents we had a broad range of threads to pursue to guide, but not restrict, our learning. From yoga poses to excursions, to specialist teachers and visual art practices, there was a wealth of possibilities for this investigation.

With no end in mind for the investigation, the main intention I had was to have a fun and magical time of wonder on our path of discovery to understand how the tides work. In that process the children and I would learn more about ourselves, each other, and our world and gain tools and strategies to prepare us to live more fully now.

Almost half a year later I could never have imagined the journey in store for us and the amount of rich, meaningful learning experiences that we would not have encountered had we not all been so open-minded and without time constraints to really delve into and be present to our daily coming together to dig deeper into our investigation.

As we embarked on our thinking and learning journey together, the preschool environment was purposefully filled with an abundance of provocations linked to the tide topic to stimulate and engage children in the research stage of the investigation:

■ A camping area was erected in the block area with a fire and beachscape.

- Tug of war experiences were conducted for children to understand the notion of force.
- A range of informative and aesthetically appealing books were displayed with earth, moon, and sun models for children to work with interactively.

These were some of the provocations designed to get children thinking, talking, and engaging together in their understandings about how the tides work. The children freely explored the environment, the third teacher, taking ownership of their own learning. Afterwards, we would come together to discuss our findings and new discoveries.

As the investigation continued, my challenge as the teacher, co-learner, and researcher was to figure out how to guide and support the children to test their theories and go that step further in their pursuits to come to their own informed understandings without being intrusive or taking over the learning.

In some ways this was fairly easy because I was also learning and making my own discoveries with the children. There was a real air of excitement as we would explore together, contribute our findings, and create shared understandings.

The children seemed to really enjoy the equality of our relationship as I too would sit to draw my theories and be part of their storytelling.

I was aware of the rich vocabulary emerging from our continuing dialogue. This led to the group creating a multi-media dictionary related to the tide and moon topics: a place we could record our shared meanings from the learning that was taking place. Within weeks the investigation had evolved to encompass the moon and its role in how the tides work.

I had witnessed the power of storytelling with these children before. This topic allowed us to spend a period of time taking on the role of the tides, creating our own stories and story drawings. Through these experiences I could see the children were able to go more deeply into their thinking processes and generate new understandings as they imagined what the tides could see, feel, smell, and think. Drawing what they were sharing made the children's learning visible as we sought to understand each other's perspectives.

In the planning phase of the investigation an emphasis on strengthening community relationships emerged to

enhance a sense of community and how the tides impact us as individuals and on a global level. The children's questions — "Who uses the tides?" "What do the tides mean to them?" — led to specialist teachers, scientists, dancers, astronomers, surfers, and engineers from our parent body and local community joining in the conversation and enhancing the learning. Through practical, hands-on experiences we were learning so much! These experiences heightened the excitement of our investigation, taking it to another place we could never have imagined.

Bringing it all together

The investigation continued through a wet winter with continuous heavy rain. The weather presented us with another provocation: the children and I really needed to let off some steam. After a session in which we moved our bodies as part of an exploration of the moon aspect of the investigation, we were all feeling much better and the creativity was flowing. The children were now utilising a new dance vocabulary in their discussions in references to relationship to space (closer, in, out) and ways of being (openness and still, up and bigger). A dance and music piece about how the tides work and the orbital paths of the moon, sun, and earth seemed compatible with these fluid and interconnected ideas more than any other form (drawing, writing, painting, or clay); it had a sense of movement — of life — and contained the essence of breath that is dance.

This idea fit with my own desire to challenge myself in making our learning visible in new ways. Enjoying my own yoga practice, and the feelings of peacefulness and vitality it induced, inspired me to pursue the dance idea. I believed this experience would really embed the learning, the interconnectedness of our bodies and the oceans.

Return to the tides

An excursion to the beach in Oakura seemed appropriate to enhance the children's understanding of tides and to help them make connections to their bodies. Five months after our initial visit to the beach and months of discussion, critical inquiry, and research the children were excited to venture into the outdoors and get closer to the elements we had spent so much time talking about.

Dressed in sturdy hooded raincoats, the wet weather didn't stop us from getting to our destination. We

Beginnings Workshop

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Beginnings Workshop

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discussed the movement of the water as we walked over a number of bridges through the local reserve: Where was it going? Do streams and rivers have tides? What was the water telling us through its movement? We sat together watching the ocean and its wild waves crashing in front of us. It was low tide according to the tide charts when we got to the beach. In small groups we walked closer to examine the tide lines. Ahi called these, “the treasure lines” and there was plenty of treasure along the shoreline and beach. Perched on rocks the Tamariki children sat to draw what they could see. Through the graphic language of drawing I was hoping that the children would use it to reveal their thoughts, theories, and ideas from the tidal observations.

We returned to preschool and our dance sessions with a new vigor:

- Children and teachers imitated the movement of the tides with their bodies. The children rolling over our bodies sent squeals and giggles of delight through the group.
- We imitated the sounds of the tide with deep breathing practices: Breathing in for the incoming tide and then breathing out for the outgoing tide. The tides were teaching us the rhythms of breath, the in and the out, the coming and the going. The children and I were learning about the tides through our bodies.
- Incorporating blue and green shades of Lycra® the children became the ocean moving both slowly and then vigorously to the changing ocean music. I witnessed the electrifying, high-energy expression of the children as they moved and manipulated their bodies into an array of forms that related to the movement of water and the tides.

Stillness and the ability to find peace within stillness is strongly valued by everyone at our preschool, and the children take an hour’s rest each day to wind down and rejuvenate. I noticed that the children were able to call on their abilities to be still by relating it to the movement of the tides and their dance work.

Teacher reflection

I began this investigation having no end in mind. I was open to the children’s lead and the guidance of my colleagues and specialist teachers. This ensured that the investigation stayed fluid, fun, and rich with meaning and learning for both the children and me. My own

Ellie uses the graphic language of drawing to share what she knows about tides with the rest of the group. We have utilized the language of drawing for expressive purposes in previous projects in seeking to understand the meaning-making of children. The children have been exploring screen printing and collage to represent their ideas and we are currently working with printing as another way to make sense of our world.

Notice in Ellie’s picture the height of the wave, the surfers, and the crabs. What does her drawing tell you about the tide? Where do you see her life experience influencing her logic?



engagement and passion for the topic has proved to be extremely important. My eagerness to learn and unravel my own cognitive knots affected the way the children engaged in the learning.

By joining in with the dancing and movement, taking part in drawing and storytelling, and being fully present in mind, body, and soul during our discussions and time together has made all the difference to me and to the children, taking on the true essence of the co-learner and friend.

PHOTOGRAPH BY THE AUTHOR

As the investigation continues with a dance performance that will be shared with parents and the community, we look forward to embracing the many challenges that this will present — the children and I together.

