



Thriving
Learners

Thriving Learners

Activating Outdoor Learning Spaces at
Wandana Primary School

Overview

The purpose of the *Thriving Learners* program is to develop and implement nature-based play, and teaching and learning experiences that enhance student wellbeing and learner agency for improved student learning outcomes. Supported by the Department for Education, *Thriving Learners* strengthens the Areas of Impact by empowering teachers to implement co-designed, student-led outdoor learning in their context.

This project engaged 31 Reception and Year 1 students over nine weeks. Staff at Wandana Primary School sought to explore all four Areas of Impact (wellbeing, student agency, effective learners, equity and excellence) by activating an outdoor learning space to build children's connection to place and nature. Educators also aimed to enhance their knowledge and confidence in outdoor learning while creating more diverse play opportunities for all learners.

It is well evidenced that nature play supports children's holistic development, including wellbeing, agency, equity and learning. For example, nature play fosters greater self-confidence in children while enhancing their social, emotional, and physical development (Elliot & Chancellor, 2014). Outdoor play experiences for children elicit a wider range of

emotions compared to indoor teaching, offering greater cognitive engagement and reductions in physical dysregulation (Fiskum, 2012).

Children who play in nature show greater engagement in learning and develop a stronger sense of autonomy in how they learn (Elliot & Chancellor, 2014). Additionally, children who spend more time outdoors in open-ended, child-led play develop an appreciation of the natural world. This appreciation fosters creativity, problem-solving skills, and active participation in making positive environmental changes in their world (Davis, 2014), while also cultivating hope (Li & Monroe, 2019).

Children's wellbeing can be significantly impacted by the amount of time they are permitted to spend in nature. A decline in opportunities for child-led play, including play in nature, contributes to poor mental health outcomes for children (Gray, 2011). In contrast, a systematic review of the literature found a positive correlation between contact with, and time in nature, and positive outcomes for children's physical and mental wellbeing (Fyfe-Johnson et al., 2021).

For context, Wandana Primary School is a Category 2 site in Gilles Plains with 148 students including 27% Aboriginal and Torres Strait Islander enrolments, 30% of students living with a disability and 41% speaking English as a second or additional language.



Effective Learners: Learners experiment with natural pigments to create paints for a canvas artwork.

Resilience and Persistence:
Learners create 'Muddy Chef' dishes using natural materials including mud.



Assessments

Prior to beginning the program, Nature Play SA staff observed children's play and conducted pre-program assessments to collect information about the children's interests and experiences to inform our sessions, with the assessments also serving to track change post-program.

Assessments included *The Biophilia Interview* (Rice & Torquati, 2013) used to measure young children's connection to nature and the *Interpretation of Drawings* (Salazar et al., 2020) framework used to understand children's attitudes towards and relationships with nature.

The Biophilia Interview highlighted children's shared interest in learning about animals and birds, which was used by Nature Play SA staff to engage them in early sessions. The lowest-scoring biophilia item was "dig in mud," with only 8 of 25 children expressing enjoyment. Many clarified that their dislike stemmed from a parent or caregiver's reluctance towards mess.

Notably, the top four preferred activities involved some physical distance from nature, while the bottom three required direct contact. This insight guided Nature Play SA in creating more opportunities for muddy and messy play while also educating parents and caregivers on its benefits. *The Biophilia Interview* was repeated at the program's end to track any changes.

Interpretation of children's nature drawings can be used to understand children's attitudes to and relationships with nature (Salazar et al., 2020). Children were prompted to draw their favourite thing to play outside in nature. Children were asked to describe their drawing to a teacher or Nature Play SA educator to minimize adult misinterpretation of their drawings. Children's drawings were observed, and four themes identified: depictions of nature; social representation; emotional affect; and engagement with nature.

Children's biophilia item scores: Pre-program

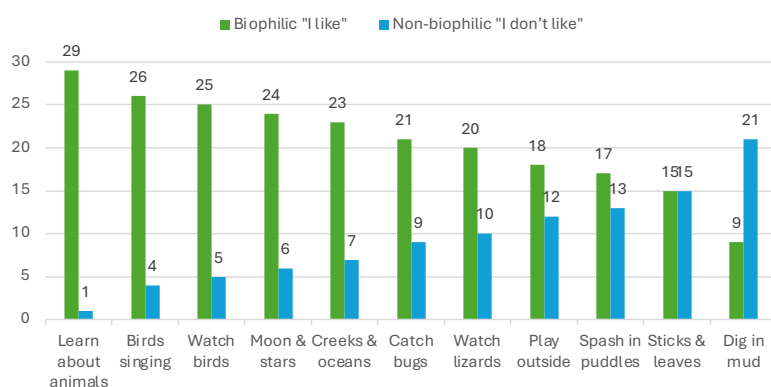


Image: Biophilia interview responses per item.

Nature depictions: Pre-program

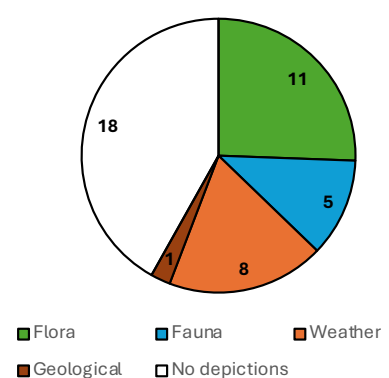


Image: Number of times nature types are depicted in children's drawings.

Most children's pre-program drawings depicted an indirect connection to nature, often through organised sport, or showed no connection to nature at all. Coupled with *Biophilia Interview* responses, the data suggested that children's experiences of nature were often distant or indirect. A key aim of the program was to increase the presence of nature in children's drawings, encourage the depiction of people in natural settings, foster the portrayal of positive emotions, and enhance the level of direct engagement with nature.

Prior to the program, Nature Play SA staff engaged with the school's staff in a focused professional development session, exploring teachers' connections to nature through their early play memories. Educators identified barriers to nature play, including funding, space, curriculum demands, and uncertainty around play-based learning. Notably, teachers observed that students were drawn to out-of-bounds areas, often the school's natural spaces, reflecting their own childhood play experiences. The preschool's outdoor area was recognised as a source of inspiration for expanding nature play within the primary school.

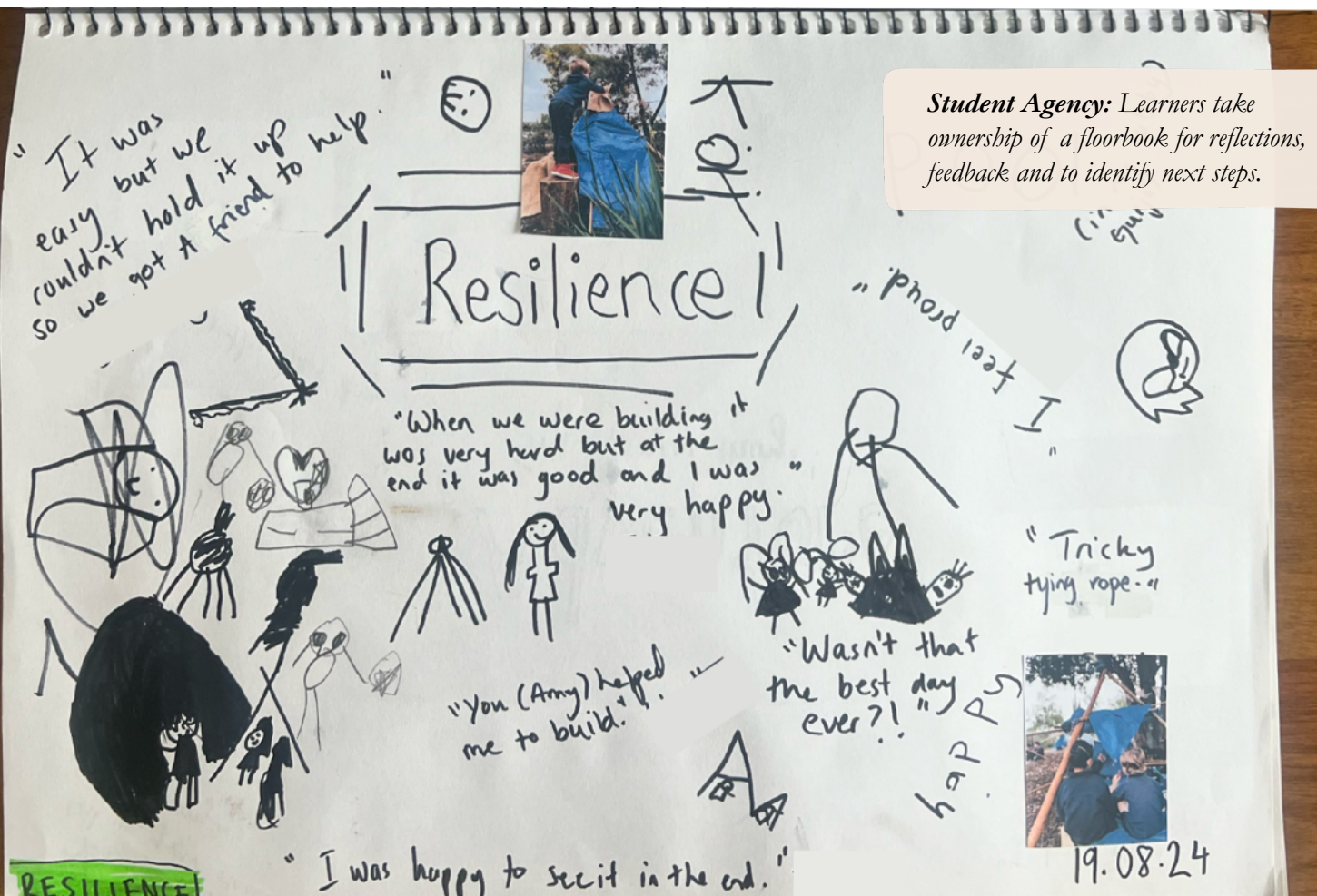
It was clear that a connection to place and nature, where all children felt welcomed, included, and engaged, was at the heart of the staff's hopes for their students and their school.

Documenting Impact

The program was documented using a *mosaic approach* (Clark & Moss, 2011) which included a range of formal and informal tools to centre the voices of children and capture the diversity of learning for the duration of the program. This approach allowed us to be adaptable, inclusive, creative and responsive. We used the following informal and qualitative methods:

- Anecdotes
- Floor book to collect children's voices, writing, and photographs.
- Samples of children's work.
- Photography.
- Reflective stories to capture learning over weeks for individual children.
- Records of conversations with groups of children.
- Learning Stories to capture and link nature play to the Areas of Impact and curriculum.

The program took place on Monday mornings, for 90 minutes between recess and lunch. The program was shaped around dispositions for nature play: Playful; Curious; Resilient; Adventurous; Nurturing; and Mindful.



Student Agency: Learners take ownership of a floorbook for reflections, feedback and to identify next steps.

Group times were held with children before nature play sessions to intentionally teach aspects of wellbeing and play through storytelling, song, and puppetry. Play experiences were selected to nurture specific play dispositions. For example, cubby building often requires resilience, while being adventurous encourages children to try new activities, such as playing with mud. We also drew on natural assets to guide learning; in the garden space, children frequently encountered magpies, rainbow lorikeets, and noisy miners.

Observations of play were documented and reflected upon to inform the following week's resources and provocations. This cycle of observing, documenting, reflecting, and planning is underpinned by intentional teaching and reflective practices. Reflective practice (Kennedy, 2018) improves outcomes by assessing successes and refining approaches, while intentional teaching (Houghton, 2013) responds to children's interests, development, and learning stages.

By observing children's play and their interactions with materials, the environment, their peers, and educators, we were able to scaffold children's learning over the weeks. Scaffolding uses the *Zone of Proximal Development* (Vygotsky, 1987) to afford children the tools and support to extend their learning just outside of their capabilities. Providing extensions, or adaptations to materials in nature play settings, as well as adult initiated wondering statements and emotional attunement, we observed children mastering new skills across many areas of development.



Dear Families,

This year, we are exploring the benefits of sensory play using natural materials such as clay, sand, dirt, water (mud), twigs, plants, and flowers.

Spending time in nature forms part of a 'balanced diet' of childhood experiences, supporting healthy development, well-being, and a love for the environment.

FURTHER READING

Balanced and barefoot: how unrestricted outdoor play makes for strong, confident, and capable children by Angela J. Henson. Freely available to borrow via the South Australian Public Library Network.

Magnificent Mud: An essential

Family Resources: *Nature Play SA developed a collection of fact sheets for download.*

The Benefits of Sensory Play:

Insights from The Biophilia Interview informed Nature Play SA's approach to creating opportunities for children to engage in muddy and messy play while also communicating its value to parents and caregivers. Of the 25 children interviewed, only eight expressed enjoyment in digging in mud. Many of those who said they didn't like playing in mud independently clarified that their reluctance stemmed from a parent or caregiver's dislike of mess or dirt.

In response, a fact sheet outlining the benefits of sensory play was created and distributed to families. As the program progressed, we introduced more muddy and messy play provocations to help children overcome non-biophilic responses to sensory play in nature.

Partners in Learning: *A learner illustrates their favourite nature activities.*



Areas of Impact: Observational Stories



“I want to paint like my cousin. She's a teenager. It was an Aboriginal painting.”

Observational Stories, using a tool designed by Nature Play SA, provided educators with a meaningful way to record the impact of sessions. This tool also helped build their understanding and confidence in the Areas of Impact. The following are snapshot examples of practice that highlight the program's impact.

Observation: Nurturing a sense of self

Kirra had a plan for her painting¹. She worked to paint the canvas carefully in a bright pink colour, waiting for it to dry, then mixed a light pink paint².

Kirra asked for support to get an accurate circle on her canvas³. We searched for something to trace. Once Kirra had her circle, she added squiggly lines projecting from the circle.

Kirra shared with me about her inspiration⁴: *"I want to paint like my cousin. She's a teenager. It was an Aboriginal painting."*⁵ Using her light pink paint, she carefully painted dots around the canvas. Out of all the children, Kirra spent the longest time on her painting⁶. While painting, I asked Kirra how she was feeling. *"Confident,"*⁷ she replied.

Reflection:

Kirra worked in an unhurried and purposeful way. She felt safe to express her Aboriginal culture⁸, and proudly shared her connection to family⁹. I reflected that this experience for Kirra met the hopes of her teachers that the program would nurture creativity, connection to place, and wellbeing.

1. Effective Learners: Strategic Awareness
2. Effective Learners: Creativity
3. Effective Learners: Changing and Learning
4. Wellbeing: Belong and Safety

5. Excellence and Equity: Aboriginal Learners
6. Excellence and Equity: Knowledge, skills, competencies, and capabilities
7. Learner Agency: Voice to Agency

8. General Capabilities: Intercultural Understanding
9. General Capabilities: Personal and Social Capability
10. Dispositions: Resourceful
11. Knowledge: Identities, change and relationships

Effective Learners: *Biophilia Interviews* showed learners were reluctant to engage in messy sensory play for fear of getting dirty.



Observation: Piper's Experience with Mud

Piper chose not to use the paintbrushes and instead covered her hands in mud, creating handprints on the paper canvas. As she worked, she smiled broadly, showing her muddy hands to the adults around her. She continued to cover her hands in thick, runny, and multicoloured mud, stretching them up high to make prints at the top of the mural. I wondered if she was having fun and said, 'You're smiling so much, Piper.' She responded with an even bigger smile.

Reflection

Her teacher remarked how joyful Piper was. Piper's biophilia score was 5 (categorised as low), and she had previously indicated that she didn't like playing with mud. Her observed play suggests this may have changed. The sensory and creative play supported her wellbeing, fulfilling the aims of the program.



Persistence: *Jarren explores the creative possibilities of sand, focused and calm as he shapes, carves, and rebuilds with care.*

Observation: Jarren Shaping Sand

Jarren was using a sand tray to explore the properties of sand while three other children played nearby. Using loose parts, clay tools, and his hands, he manipulated the sand in careful and considered ways. He built mounds with his hands, smoothed them down, and then altered their shape and size, testing how much he could carve before they collapsed. He appeared unfazed when the mounds fell, simply beginning again.

At one point Jarren told me, "I'm playing this game." He remained focused and purposeful, engaged in the activity for about half of the session. As I commented on how carefully he was carving what resembled a cave, he smiled widely.

Reflection

I wondered what opportunities Jarren had previously to play with sand. He seemed confident and deeply interested in its potential as a creative medium. I admired his focus and connected demeanour. The way he shaped the sand into circles and placed stones around the perimeter reminded me of symbolism found in Aboriginal art. It appeared to me that he felt calm, safe, and accepted.

When I checked his biophilia score, I noted it was 10. The only thing he had reported disliking was playing with mud. On this occasion, he chose to work mainly with dry sand but still explored the mud mural in a way that suited him, using a paintbrush.

I heard him call out to me for the first time, "Amy, look!"

Areas of Impact Observational Story: Matthew and the Rainbows

Matthew speaks Pitjantjatjara and is learning to speak English. I don't speak any language other than English, but I noticed this didn't stop Matthew from clearly communicating what was important to him. From our first session, he showed a strong affinity for rainbows.

During our pre-program week, Matthew shared that his favourite thing to do in nature was to ride in the car and look for rainbows out the window. At each session, he carefully selected the materials he needed to create a rainbow. Every time, he would seek out one or two adults to proudly share his creation. Matthew smiled broadly each time he completed a rainbow.

By Week 5, we noticed that Matthew was beginning to use many new English words with us. For the first time, I heard him call out to me by name: "Amy, look!" He had a big smile on his face. He had made a raft using corks and elastic bands and was demonstrating how well it floated in the water. He said excitedly, "Look what I made!"

Reflection

Matthew displays pride in his work. As he learns English, the creative mediums offered in our programs give him meaningful ways to connect and communicate.

His connection to culture is supported through the school's performing arts program, where students sing in Pitjantjatjara — reinforcing that his identity and language are recognised and valued.

Each week, Matthew accessed learning through play, often working alongside peers with shared interests or common challenges. His joy, persistence, and engagement suggest a strong sense of belonging, agency, and growing confidence in communication.



Outcomes and Post-Program Results:

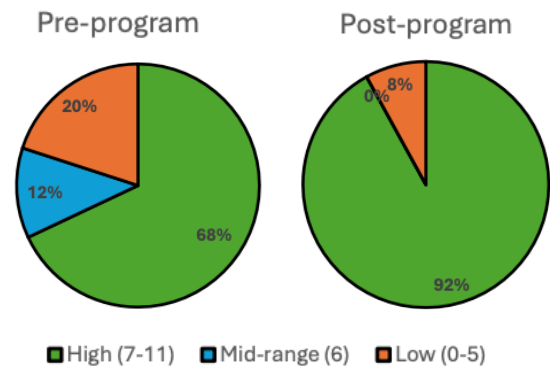
Results showed the program significantly increased children’s affinity for nature, with all mid-range biophilia scores shifting to high and three of five low-range scores improving. This growth in biophilia and comfort in nature demonstrates that immersive nature play experiences help children develop a deeper connection to the natural world.

As children engaged with a variety of outdoor activities, their play preferences expanded, particularly in their enthusiasm for playing with sticks and leaves, which saw the biggest increase. While some children remained hesitant about mud play, the data showed a notable shift in attitudes, reinforcing that repeated exposure builds confidence in sensory-rich experiences.

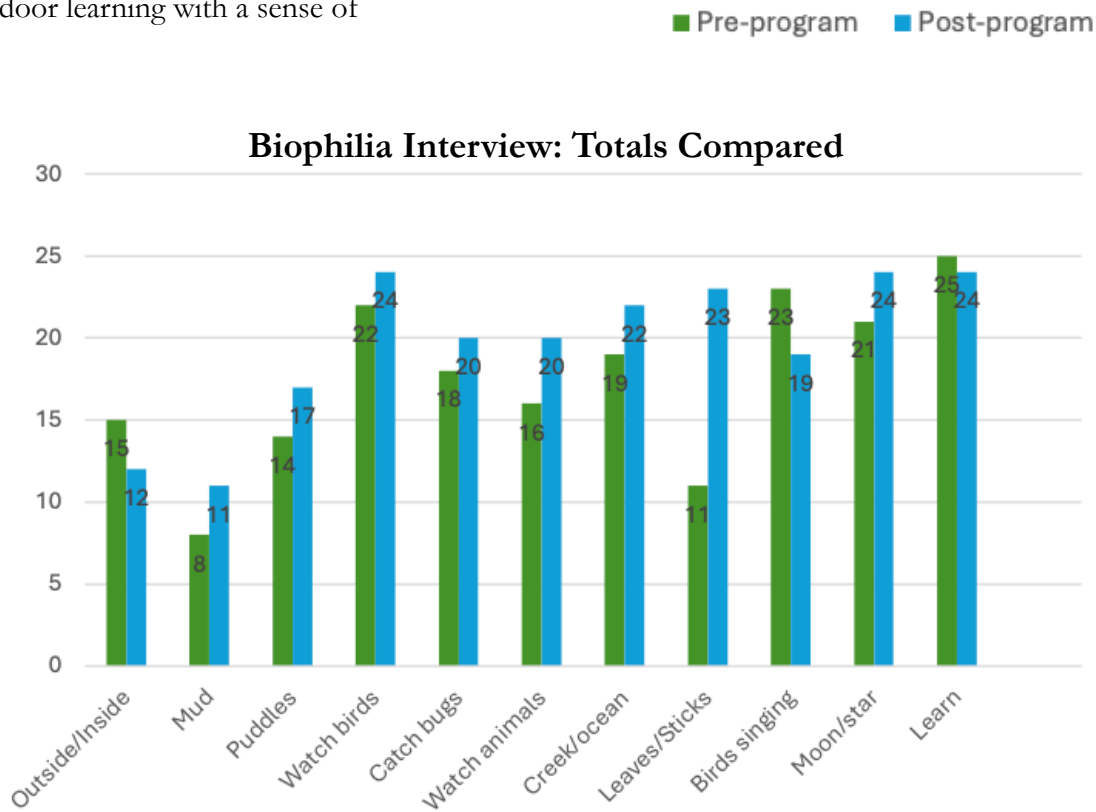
Children’s environmental awareness and perceptions of nature were also dynamic, shaped by personal and seasonal experiences. For example, while most biophilia indicators increased, enjoyment of *‘listening to birds singing’* slightly declined for some children who reported being kept awake by noisy birds at home. This finding underscores that children’s relationships with nature are fluid, shifting with their lived experiences.

Confidence through challenge and play was evident as exposure to a variety of nature-based experiences helped children feel more comfortable engaging with the outdoors, even in challenging or messy situations. Hands-on, repeated interactions with nature not only fostered curiosity but also built resilience and confidence, encouraging children to embrace outdoor learning with a sense of adventure.

Total Biophilic Scores Catergorised



Low and Mid-range Scores change over time		
Pre-		Post-
Low 4	Unchanged	Low 4
Low 4	Unchanged	Low 4
Low 3	➡	High 7
Low 5	➡	High 9
Mid 6	➡	High 8
Mid 6	➡	High 8
Mid 6	➡	High 9



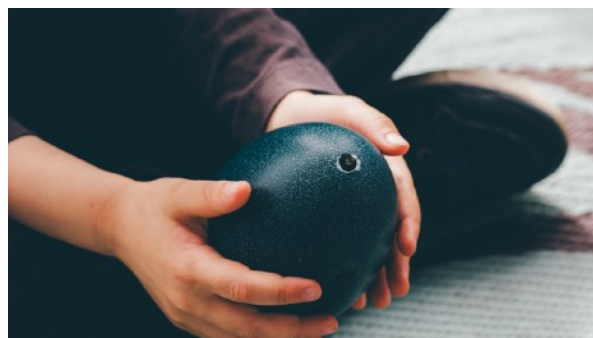
When children already have high biophilia scores, what is the role of nature-based play in children's learning and wellbeing?

When children already have a strong connection to nature, measurable growth may be less obvious. While some learners show clear shifts, such as increased comfort with sensory-rich play, changes in those with high biophilia scores often manifest in more subtle ways.

Observations suggest that children with high nature connection often enter a state of play that is truly autonomous and unburdened by external expectations. This type of play can be described as an emergent process, one that encourages children to return again and again (Eberle, 2014). Within this space, play becomes a tool for achieving mastery, allowing children to attempt challenges they might not otherwise explore (Chazan, 2002). The ongoing nurturing of a love for and connection with nature appears to contribute to a positive sense of self, a deepened connection to the world, confidence in one's abilities, and an intrinsic motivation to seek out new opportunities.

Interpretation of Children's Drawings

Children's drawings showed an overall increase in depictions of nature, although this change was not statistically significant. Factors such as confidence in drawing abilities and limited time may have influenced the level of detail and representation. Social variations remained largely unchanged, with the most notable shift being an increase in depictions of children playing in pairs. A quarter of the children did



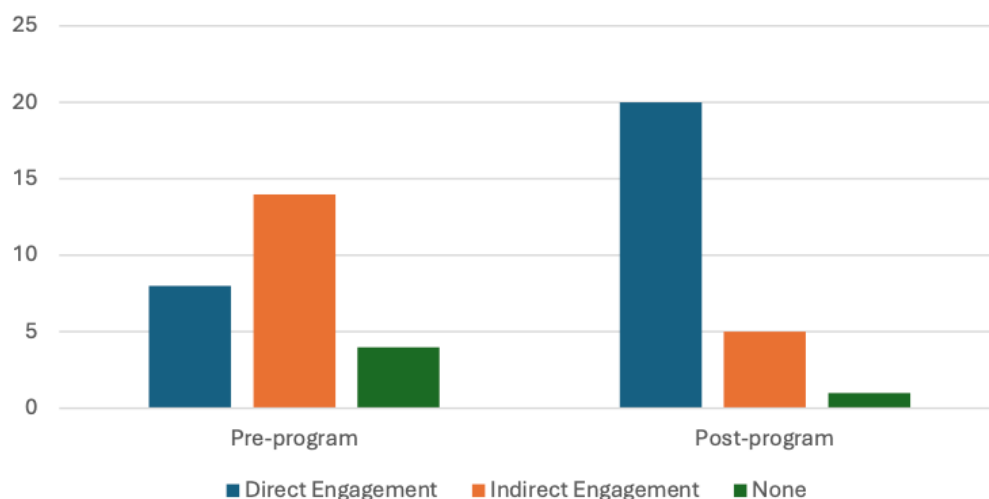
***Curiosity:** An emu egg is used as a provocation to inspire curiosity.*

not draw people in their illustrations, and this remained unchanged post-assessment, suggesting they are still developing a personal connection to nature.

A key positive shift was seen in emotional expression, with more children depicting positive emotions and a greater overall representation of feelings. The program's intentional teaching about play dispositions, including naming emotions and amplifying children's voices, may have contributed to this change.

The most significant transformation was a shift from indirect to direct engagement with nature, with fewer illustrations of organised sports and more depictions of immersive, hands-on experiences. This suggests that time spent in nature, coupled with meaningful learning opportunities, strengthens children's personal connection to the natural world, particularly for those who may have had limited prior experiences.

Engagement with Nature in Children's Drawings



Example of Interpreting Children's Drawings:

The two drawings below compared pre- and post-program depictions of nature, social representation, emotional affect, and engagement with nature.

Pre-program, no nature depictions were present, the image is of a stadium. No affect conveyed though there may be excitement depicted with the scores. The image places the child outside of the play as an observer.

Post-program, two large natural elements were drawn, a large tree and grass, that take up much of the page. The tree drawn is in the garden space where the group often meets. A happy affect is displayed with the smiling person, and a sense of pride may be indicated with child's name written boldly top left*. The child is describing a session where they worked alongside a friend.

While both drawings depict something important to the child, and they have spent time carefully telling a story in both, there are clear differences that indicate a stronger connection to nature in the post-drawing.

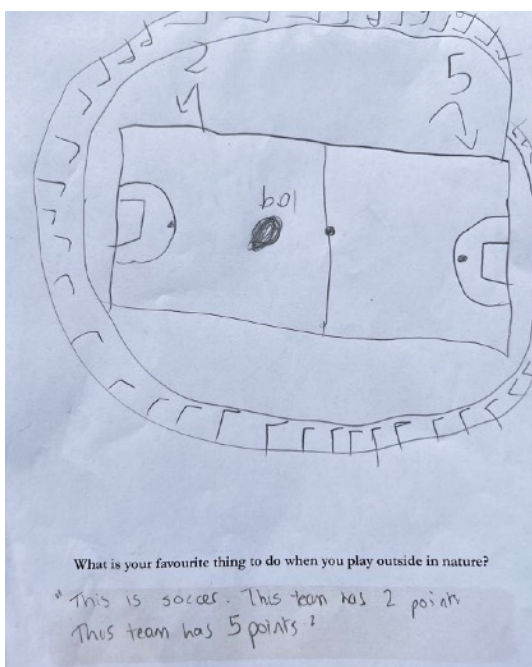


Outdoor Learning: *A comfortable, flexible and inviting space can be created on a small budget.*

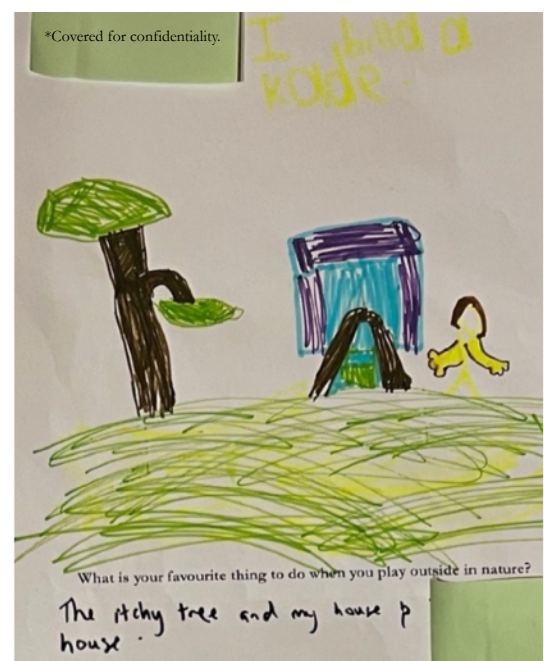
Outdoor Space Activation and Outcomes:

A significant goal of this program was activating an outdoor learning space to build children's connection to place and nature. The garden space, located directly outside the junior primary classrooms, featured some significant trees, paths and largely empty garden beds.

In the absence of seating or furniture, Nature Play SA staff utilised tree stumps, pop-up tables, and sitting mats to create a flexible, comfortable, and accessible outdoor learning space.



- Nature: Nil
- Affect: Nil
- Social: Group (child is observer)
- Engagement: Indirect



- Nature: 2
- Affect: Positive
- Social: Pair (child is with a school friend)
- Engagement: Direct

“You demonstrated so many practical ways that we can set up for learning in nature... Each Monday you blew us away with the transformation of our garden area into a magical, engaging wonderland.”

- Classroom Teacher

"This type of play is exactly what our children should be involved in. It's therapeutic, a mix of active and passive, inclusive, outdoors, supportive and just so much fun for everyone. Nature Play SA Staff were the most kind, knowledgeable, caring and supportive educators to work with who understood the needs of our site."

— Principal



Sensory Play: Learners experiment with Terracotta clay at a whole-school celebration.

Summary

With a model for how the space might be used in the future, the school is exploring ways to transform and better utilise the garden at a minimal cost. Ideas include improved gravel paths and landing pads for activities, increased seating, and a yarnning circle.

For our final session, we hosted a whole-school celebration of play in the main school playspace. Planned by R/1 learners, the event served as a prototype, expanding play opportunities for all students in alignment with the program's goals.

Wandana's *Thriving Learners* program effectively brought the Areas of Impact to life by creating a rich, student-centred learning environment that prioritised agency, connection to place, and deep engagement with nature. Through nature-based experiences, the program ensured that all students, regardless of background or ability, could engage meaningfully with their environment.

Through intentional teaching about emotions and dispositions for play, and by creating a space where all voices were heard, students were encouraged to express themselves freely, further cultivating a sense of belonging. Wandana Primary School's *Thriving Learners* program highlights how nature-based learning can foster inclusivity and empower children, ensuring all children feel seen, included, and empowered in their education.

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