

Tables

Table S1. Summary of demographic information of student survey participants alongside Carlton North Primary School demographic information from 2019. Carlton North Primary School data is sourced from the Australian Curriculum, Assessment and Reporting Authority (ACARA). *Note that students were asked whether they or their parents identified as Aboriginal or Torres Strait Islander.

| | Pre-program survey | Post-program survey | Carlton North Primary School |
|--|--------------------|---------------------|------------------------------|
| Gender | | | |
| Female | 55 (45.1%) | 33 (52.4%) | 48% |
| Male | 62 (50.8%) | 27 (42.9%) | 52% |
| Other | 1 (0.8%) | 1 (1.6%) | - |
| Prefer not to say | 4 (3.3%) | 2 (3.2%) | - |
| Age | | | |
| 8 | 12 (9.8%) | 0 (0.0%) | |
| 9 | 27 (22.1%) | 0 (0.0%) | |
| 10 | 32 (26.2%) | 10 (15.9%) | |
| 11 | 30 (24.5%) | 30 (47.7%) | |
| 12 or older | 21 (17.2%) | 23 (36.5%) | |
| Identify as Aboriginal or Torres Strait Islander* | | | |
| Yes | 8 (6.6%) | 1 (1.5%) | 2% |
| No | 113 (92.6%) | 62 (98.4%) | 98% |
| Unanswered | 1 (0.8%) | 0 (0.0%) | - |
| Language background other than English | | | |
| Yes | 52 (42.6%) | 24 (38.1%) | 33% |

| | | | |
|--------------------------|-----------------|-----------------|------------|
| No Unstated | 70 (57.4%) - | 39 (61.9%) - | 49% 18% |
| Total sample size | 122 | 63 | |

Table S2. Means and 95% confidence intervals for student responses pre- and post-program for all measures. See Table 2 in the main manuscript for an outline of all survey items within measures. Bold text highlights variables where there are perceptible differences between pre- and post-program responses, defined by no overlap between 95% confidence intervals. Note that the first Knowledge of Culture measure is not included here because it was not measured on a 5-point scale and therefore means were not calculated.

| Measure | | Pre-program | | | | Post-program | | | |
|---|---|-----------------|-----------------|----------------------------------|-----------------|-----------------|-----------------|----------------------------------|-----------------|
| | | Sample size (n) | Mean (M) | 95% Confidence Interval for Mean | | Sample size (n) | Mean (M) | 95% Confidence Interval for Mean | |
| | | | | Lower Bound | Upper Bound | | | Lower Bound | Upper Bound |
| Connection to Nature (16-scale index) | | 121 | 4.408815 | 4.333042 | 4.484589 | 63 | 4.380489 | 4.262472 | 4.985507 |
| Other Cultures | 1 | 122 | 4.213115 | 4.044990 | 4.381240 | 63 | 4.174603 | 3.937228 | 4.411978 |
| | 2 | 122 | 4.540984 | 4.432536 | 4.649431 | 63 | 4.587302 | 4.414260 | 4.760343 |
| Knowledge of Totemic Species | 1 | 122 | 2.032787 | 1.773163 | 2.292411 | 63 | 4.984127 | 4.952397 | 5.015857 |
| | 2 | 122 | 1.647541 | 1.452113 | 1.842969 | 63 | 4.396825 | 4.088246 | 4.705405 |
| | 3 | 122 | 2.434426 | 2.177833 | 2.691019 | 63 | 3.380952 | 3.044191 | 3.717714 |
| | 4 | 121 | 2.669421 | 2.444864 | 2.893979 | 62 | 1.887097 | 1.622522 | 2.151671 |
| Care for Totemic Species | 1 | 122 | 2.270492 | 2.011787 | 2.529197 | 63 | 1.634921 | 1.377841 | 1.892000 |
| | 2 | 121 | 3.735537 | 3.492081 | 3.978993 | 62 | 4.129032 | 3.832862 | 4.425203 |
| | 3 | 122 | 4.213115 | 3.997892 | 4.428337 | 63 | 4.666667 | 4.523627 | 4.809706 |
| Knowledge of Culture | 2 | 122 | 4.254098 | 4.085450 | 4.422747 | 62 | 4.241935 | 3.987212 | 4.496659 |

| | | | | | | | | | |
|--|----|-----|----------|----------|----------|----|----------|----------|----------|
| | 3 | 122 | 3.590164 | 3.376769 | 3.803558 | 63 | 4.603175 | 4.449518 | 4.756832 |
| | 4 | 122 | 2.262295 | 2.037924 | 2.486666 | 63 | 1.777778 | 1.456514 | 2.099042 |
| Responsibility and Agency (Caring for Nature) | 1a | 122 | 4.803279 | 4.709280 | 4.897278 | 63 | 4.761905 | 4.620924 | 4.902886 |
| | 1b | 118 | 4.762712 | 4.668713 | 4.871104 | 63 | 4.730159 | 4.589178 | 4.888192 |
| | 2 | 122 | 4.459016 | 4.320470 | 4.597563 | 63 | 4.412698 | 4.212265 | 4.613132 |
| | 3 | 122 | 4.557377 | 4.407948 | 4.706806 | 63 | 4.523810 | 4.312338 | 4.735281 |

Table S3. Means and 95% confidence intervals for parent/guardian and teacher responses post-program for all measures. See Table 2 in the main manuscript for an outline of all survey items within measures. Note that the first Knowledge of Culture measure is not included here because it was not measured on a 5-point scale and therefore means were not calculated.

| Measure | Parent/Guardians | | | | Teachers | | | | |
|---|------------------|----------|----------------------------------|-------------|-----------------|----------|----------------------------------|-------------|----------|
| | Sample size (n) | Mean (M) | 95% Confidence Interval for Mean | | Sample size (n) | Mean (M) | 95% Confidence Interval for Mean | | |
| | | | Lower Bound | Upper Bound | | | Lower Bound | Upper Bound | |
| Empathy for creatures | 29 | 4.405172 | 4.024442 | 4.785903 | 5 | 4.55 | 4.039934 | 5.060066 | |
| Sense of oneness | 29 | 4.528736 | 4.134252 | 4.923220 | 5 | 4.533333 | 4.061428 | 5.005238 | |
| Sense of responsibility | 29 | 4.517241 | 4.116879 | 4.917604 | 5 | 4.8 | 4.429807 | 5.170193 | |
| Nature Connectedness Scale (6-item scale) (Nisbet & Zelenski 2013) | 29 | 3.91954 | 3.556293 | 4.282787 | 5 | 3.866667 | 3.222143 | 4.51119 | |
| Other Cultures | 1 | 26 | 4.653846 | 4.293623 | 5.014069 | 5 | 4.4 | 3.719913 | 5.080087 |
| | 2 | 26 | 4.576923 | 4.230915 | 4.922931 | 5 | 4.4 | 3.719913 | 5.080087 |
| Knowledge of Totemic Species | 1 | 26 | 3.461538 | 2.833404 | 4.089673 | 5 | 4.8 | 4.244711 | 5.355289 |
| | 2 | 26 | 3.384615 | 2.688983 | 4.080248 | 5 | 5.0 | 5.0 | 5.0 |
| | 3 | 26 | 3.538462 | 3.078207 | 3.998716 | 5 | 3.8 | 2.181068 | 5.418932 |
| | 4 | 26 | 2.846154 | 2.073918 | 3.618389 | 5 | 1.4 | 0.289422 | 2.510578 |
| Care for Totemic Species | 1 | 26 | 1.730769 | 1.294882 | 2.166657 | 5 | 1.2 | 0.644711 | 1.755289 |
| | 2 | 26 | 4.538462 | 4.107496 | 4.969427 | 5 | 4.8 | 4.244711 | 5.355289 |

| | | | | | | | | | |
|--|---|----|----------|----------|----------|---|-----|----------|----------|
| | 3 | 26 | 3.961538 | 3.457305 | 4.465771 | 5 | 4.6 | 3.919913 | 5.280087 |
| Knowledge of Culture | 2 | 26 | 4.384615 | 3.941022 | 4.828208 | 5 | 4.4 | 3.719913 | 5.080087 |
| | 3 | 26 | 3.769231 | 3.267243 | 4.271219 | 5 | 3.4 | 2.719913 | 4.080087 |
| | 4 | 26 | 2.307692 | 1.750717 | 2.864667 | 5 | 1.2 | 0.644711 | 1.755289 |
| Responsibility and Agency (Caring for Nature) | 1 | 26 | 4.538462 | 4.122914 | 4.954009 | 5 | 4.8 | 4.244711 | 5.355289 |
| | 2 | 26 | 4.538462 | 4.122914 | 4.954009 | 5 | 4.8 | 4.244711 | 5.355289 |
| | 3 | 26 | 4.461538 | 4.062003 | 4.861074 | 5 | 4.8 | 4.244711 | 5.355289 |
| Sharing | 1 | 26 | 3.523077 | 3.024485 | 3.821669 | - | - | - | - |
| | 2 | 26 | 2.961538 | 2.542083 | 3.380994 | 5 | 4.2 | 3.644711 | 4.755289 |

Table S4. Results from an open-ended question asking students (n = 57) to share their thoughts on the Indigenous Garden Project, grouped by theme: Indigenous Culture, Learning, Enjoyment and Nature. Responses have been edited for spelling and formatting errors only.

| Student responses (n = 57) | |
|---|---|
| Indigenous Culture | Learning |
| <p><i>I enjoyed growing the plants, and I learned so much about the indigones culture</i></p> <p><i>The garden project was really fun and I learnt a lot of new indeginous things. Thankyou for making this happen.Thanks for the donation of money RMIT</i></p> <p><i>I thought it was a good thing to learn about different cultures and their traditions</i></p> <p><i>I enjoyed learning about indigenous topics and all about ecosystems!!!!!!!!!!</i></p> <p><i>I thought it was a really great idea to teach students about different cultures and I learnt a lot of new things about cultures, plants, animals and planting. It was also really good to teach kids about what they can do to help the environment.</i></p> <p><i>I think it was very useful and interesting to learn about cultures and foods other than our own, and also learning about how the traditional owners lived.</i></p> | <p><i>I think that everyone got something out of it and it was very educational. I enjoyed going to the gardens and looking at all the native and aboriginal plants and learning their purposes and uses. I also enjoyed planting Matted Flax-Lilies in our garden and watching it grow.</i></p> <p><i>I loved learning all the different things that each of the plants are used for. it was kind of fun planting the plants but I didn't enjoy it that much.</i></p> <p><i>I really enjoyed this project, and I think it is really important for young children to learn about these things at a young age.</i></p> <p><i>I thought it was nice to learn of indigenous plants and animals as well as what they can be used for. It was really fun planting.</i></p> <p><i>it has helped many people expand their knowledge on many important matters</i></p> <p><i>i thought what we learnt was different and new so that was great and i had never heard of any of the plants we learnt about before this term</i></p> |

| | |
|---|---|
| <p><i>I think it was great that we were able to learn about Indigenous culture and help make a difference in our community by planting native plants. I loved the cooking activity as well.</i></p> <p><i>I thought it helped us learn more about Indigenous culture but we could have learnt a bit more about it. But overall I thought it was a great thing to do and we should definitely keep continuing to learn about it. We are helping improve our school's environment and that is always good.</i></p> <p><i>I think it was important for us to learn about indigenous culture and biodiversity and ecosystems. I enjoyed planting and growing indigenous plants. I had a great experience</i></p> <p><i>In the indigenous garden project I learnt a lot about the environment and cultures in this project such as plant names and where the plant is from, what the plant does to the environment, traditional owners and more. I am very glad we did this project. I think everybody expanded their knowledge on indigenous gardening.</i></p> <p><i>I really liked learning about Indigenous plants and how indigenous people used them</i></p> <p><i>I planted a indigenous plant native to my area and I learnt what m indigenous areas were called and how things worked back before the British came. I learnt how cultural objects work and what they mean.</i></p> <p><i>I think the indigenous garden project has helped me understand how important indigenous culture is. I thought it was great 👍</i></p> <p><i>i really enjoyed science this term even if i was away or some of it i feel much closer to our indigenous culture than i ever have</i></p> <p><i>It was quite short and rushed I thought but it was very interesting and I learned quite a lot about the indigenous culture. It was really cool to learn about the people and cultures and tribes, and finding out the tribe who lives on our soil.</i></p> <p><i>okay, learnt about some indigenous stuff</i></p> | <p><i>I thought it was a great experience for those who didn't know so much about the environment and plants</i></p> <p><i>I learned a lot in this in science this term and I think it is important what we learned this term</i></p> <p><i>I would've liked to do a lot more cooking!! The cookies were fun to make and it was interesting to learn about OTHER indigenous plants not just the same couple.</i></p> <p><i>I think going to the museum was great because I learnt a lot about indigenous plants. I'm a very visual learner, so that helped me a lot</i></p> <p><i>I thought the format and structure of all the lessons was good and fun.</i></p> <p><i>It was fun and enjoyable and I learnt more than I thought I did.</i></p> <p><i>I thought it really helped going to the museum and seeing the indigenous garden.</i></p> <p><i>I thought it was a great learning experience</i></p> <p><i>I thought it was good for us to learn about this program in school.</i></p> <p><i>I feel as if it will fizzle out. It was short and a bit rushed, but I did learn a lot. I would like to do more on this ans wish we did it for longer. Definitely do this next year, and the year after</i></p> |
| <p>Enjoyment</p> | <p>Nature</p> |
| <p><i>it was very fun and i wish we could do more of it</i></p> <p><i>I thought it was very fun and enjoyable and it was nice be part of something that we found important</i></p> <p><i>I thought that the excursion was a lot of fun and it was very interesting too. With the cooking, I thought that maybe we could be learning a bit more rather than just making it</i></p> <p><i>It was fun, I enjoyed planting the indigenous plants and my favourite part was cooking the cookies with our indigenous signature ingredient. And I was very happy that we were learning something related to leaving Earth.</i></p> <p><i>its cool fun and we learned about different types of plants and we learnt how to plant them.</i></p> <p><i>it was really fun and i love ed planting the plants</i></p> | <p><i>I thought this indigenous garden project was a lot of fun because we got to learn a lot about many different species and plant multiple plants 🌱🌱🌱😊😊😊</i></p> <p><i>I learned a lot of different types of plants and their uses</i></p> <p><i>I thought it was a good way to get involved with the earth.</i></p> <p><i>it makes all plants safe and healthy</i></p> <p><i>I think making a indigenous garden was an excellent idea! I learnt loads of things like, the matted flax lily actually exists! And that they are critically endangered but it's awesome to think that our school has one of the worlds biggest population of matted flax lilies!</i></p> <p><i>I never knew about the matted flax lily and that it was going extinct and now I'm planning to plant some in my backyard!</i></p> |

I think it was fun to learn about indigenous plants and how to look after them.

I quite enjoyed doing the hands on work, and the fact that we did gardening made it even better because I love to garden and put something in the world that will be there forever.

it was fun

It was fun to learn about different plants.

I liked it alot and I think we should do it more in the future. Even if i have graduated...

it was fun but i wouldn't do it in science

I loved it.I thought it was fun learning about Indigenous Nature

Whilst I do think being educated on Indigenous cultures are important, I found the subject rather boring. I would have liked if it was a bit more fun and enjoyable

ok

I think it was a good choice to do this project because it give lots of information and awareness about our planet endangered plants

I loved learning about aboriginal plants. It's sad that our school will have a very big population of matted flax lilies because we don't even have that many.

It was fun and I think it was good to learn about ecosystems and indigenous plants

I learnt about different native plants and what they would be very useful for! We planted matted flax lily and that was fun, we are also growing sticky everlastings. I enjoyed planting. But not learning about the cultures of aboriginals. I'm not sure why

Table S5. Results from an open-ended question asking parents/guardians (n = 7) and teachers (n = 2) to share their thoughts on the Indigenous Garden Project. Responses have been edited for spelling and formatting errors only.

| Parent/Guardian responses (n = 7) | Teacher responses (n = 2) |
|--|---|
| <p><i>This program has been a great start but we have so very far to go, thanks for making it happen.</i></p> <p><i>Thank you for all your good work. I am going to learn more about Matted Flax lily after doing this survey.</i></p> <p><i>I'd like the kids/me to learn more about bush tukka</i></p> <p><i>The program has been an engaging and inspiring addition to my children's school</i></p> <p><i>Any learning relating to the natural world, indigenous culture and an understanding of how human beings impact on the Earth is warmly appreciated and encouraged at school.</i></p> <p><i>My son regularly asks if we can plant native plants because of how important they are. He's certainly taken a lot on board from this program. Thank you</i></p> <p><i>It should be in all schools</i></p> | <p><i>Loved the program and the education it provided to our whole community.</i></p> <p><i>please continue the wonderful work, its crucial</i></p> |

Figures

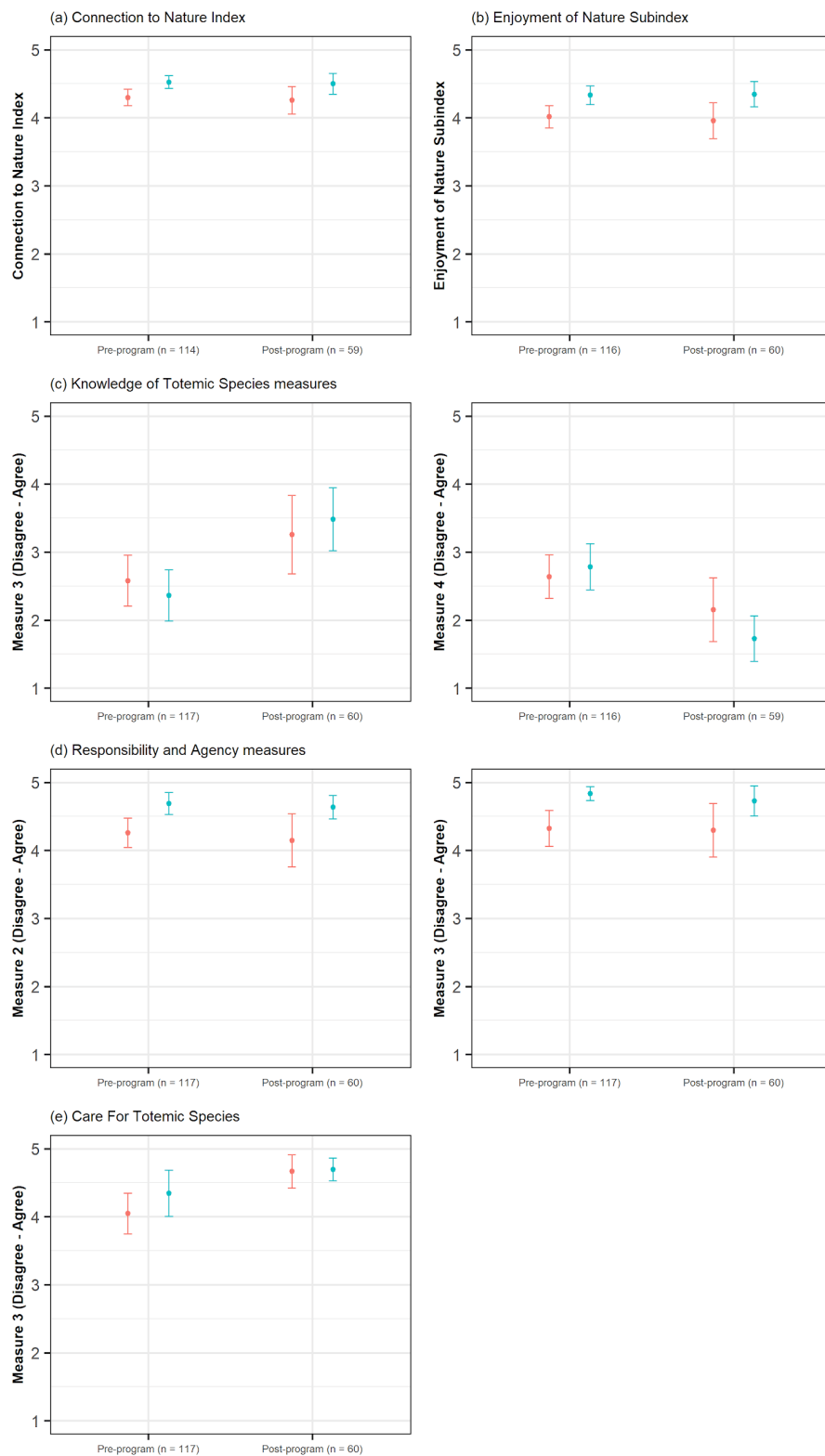


Figure S1. Plot of mean student responses pre- and post-program that indicated differences across gender, split by male (red) and female (blue) students. (a) Connection to Nature Index, (b) Enjoyment of Nature subindex, (c) Measures 3 and 4 of the Knowledge of Totemic Species variable, (d) Measures 2 and 3 of the Responsibility and Agency variable, (e) Measure 3 of the Care for Totemic Species variable. Error bars are 95% confidence intervals.

Please note data from students self-identifying as a gender apart from female or male, and students who preferred not to provide their gender, are excluded from these figures to preserve anonymity, due to small sample sizes.

Reliability tests and inter-item correlations

Reliability test across all CTN variables. Report Cronbach's alpha 0.848 (this is good). 17 items, $n = 185$ sample units. Bootstrap 95% CI based on 1000 samples 2.5% 97.5%

0.784 0.883

Correlation plots between different types of CTN measures

