Polli:Gen

Polli:Nation for the Next Generation

Evaluation report

Learning through Landscapes

Green Recovery Challenge Fund

Department for Environment Food & Rural Affairs

The National Lottery Heritage Fund

Environment Agency

NATURAL ENGLAND

CFEY The Centre for Education & Youth

The Centre for Education & Youth

This report was written by The Centre for Education and Youth. CfEY is a 'think and action-tank'. We believe society should ensure all children receive the support they need to make a fulfilling transition to adulthood. We provide the evidence and support policy makers and practitioners' need to support children.

We use our timely and rigorous research to get under the skin of issues affecting children in order to shape the public debate, advise the sector and campaign on topical issues. We have a particular interest in issues affecting marginalised children.

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Foreword

For over thirty years, Learning through Landscapes has been advocating for regular time outdoors to be valued, appreciated and recognised as a crucial part of all stages of education.

We passionately believe that outdoor learning, play and connection with nature are fundamental to children's wellbeing, development and engagement with learning. We're committed to ensuring that every child and young person can access the outdoors every day.

In the wake of pandemic lockdowns and reports of growing youth anxiety over the climate crisis, our mission has only become more important in recent years.

It's the reason we deliver projects like Polli:Nation for the Next Generation (Polli:Gen).

Made possible by the UK Government's Green Recovery Challenge Fund, Polli:Gen took its roots from our 2015 award-winning Polli:Nation project. Over the course of ten months, Polli:Gen worked to engage children across Leicester with their local environment and natural heritage. In particular, our team empowered children to learn how to make outdoor spaces better for pollinators, to share that knowledge with wider communities, and to take environmental action.

It's been amazing to see the results. More than one fifth of Leicester schools and over 800 children and community members participated, and together they made substantial environmental improvements across the city – planting trees, creating nesting habitats and building ponds to make shared spaces throughout Leicester more pollinator-friendly.

The children truly made the project their own. So, we're delighted to see this report reflect their raised levels of environmental stewardship, as well as their increased knowledge of and engagement with the natural world. While we hoped for more substantial gains in children's mental and physical wellbeing, we recognise that Polli:Gen was delivered in a tumultuous time, against a background of ongoing pandemic disruption in a city hit particularly badly by COVID-19.

We're grateful to our project partners, the Wildlife Gardening Forum and Leicester City Council, for their invaluable support throughout. The council's passion for engaging children with the environment shone through the entire project, and Leicester is truly leading the way in delivering green education.

Now, we're excited to explore where the seeds sown by Polli:Gen will lead. During this project, hundreds of Leicester children have learned that little changes can make a big difference to their local environment and, ultimately, to their planet.

Carley Sefton
CEO, Learning through Landscapes

1 Executive Summary

1.1 Project Overview

Polli:Nation for the Next Generation (Polli:Gen) is an outdoor learning project, run by the charity Learning through Landscapes, in partnership with Leicester City Council and the Wildlife Gardening Forum.

The project is funded by the UK Government's Green Recovery Challenge Fund. This fund was developed by DEFRA and is being delivered by the National Lottery Heritage Fund, in partnership with Natural England, the Environment Agency and the Forestry Commission.

Polli:Gen has been delivered by expert project officers in 24 school groups across Leicester, with the ambition of making Leicester the most pollinator–friendly city in England.

LtL is the UK's leading outdoor learning and play charity, helping children and young people to connect with nature, become more active, learn outdoors and have fun.

Through Polli:Gen, LtL aimed to engage with children and community groups across Leicester to teach them about their local natural heritage and how to create pollinator-friendly school grounds and community areas. The project sought to improve young people's connection with nature, increase their knowledge of pollinators and their importance, and make improvements against a range of additional outcomes, such as social wellbeing and physical activity. Alongside child-level impact, Polli:Gen intended to change the attitudes and behaviours of parents, carers and the local community towards pollinators and nature more broadly.

Polli:Gen project delivery began in May 2021 and covered over one fifth of Leicester schools. This report presents an evaluation of the project, conducted by The Centre for Education and Youth (CfEY). The project and the evaluation took place during a summer and autumn term heavily disrupted by the COVID-19 pandemic. Project delivery was only possible with a great deal of flexibility, and as a result some schools had different experiences of Polli:Gen.

The effectiveness of the project was assessed against a series of outcomes outlined by LtL. These are presented in the report, as follows:

Diversity and accessibility

1 A wider group of children, families and their local communities are learning about nature and pollinators in school grounds and community spaces.

Improved knowledge

2 Children have improved knowledge relating to pollinators and their importance.

Changing behaviours to make changes to school grounds and the local community

3 Children feel empowered to enact physical changes that help pollinators and other wildlife in their school grounds.

4 The condition of heritage has been improved in school grounds and community group spaces.

5 Children and the wider community have changed their behaviour.

6 Children intend to make long term changes to their behaviour.

Local environment and nature

7 Children feel more engaged with issues about their local environment and natural heritage.

8 Children feel more connected with nature.

Physical and mental wellbeing

9 Children have improved levels of physical activity.

10 Children have improved social wellbeing.

11 Members of the wider community, including families and community groups, have greater wellbeing.

In addition, the report includes two further sections, detailed below:

Unexpected impact

Impact we observed that was not related to intended outcomes but may be worth noting in future project designs and evaluations.

Project delivery

Insights concerning Polli:Gen's delivery, with a focus on process factors that aided the project and those that hindered it, such as communication and timetabling.

The evaluation

In 2021, LtL commissioned CfEY to conduct an independent evaluation of the Polli:Gen project. The evaluation brings together replicable, robust, validated measures together with four qualitative case studies, with data for both gathered at the start and end of the autumn term 2021. Combining quantitative measures with detailed qualitative data in this way allowed more confident conclusions where there was alignment between multiple data sources.

1.2 Key findings

Overall, the evaluation reveals positive findings regarding several aspects of the project. In other areas, results were more mixed, with the positive findings from the qualitative fieldwork not reflected in our quantitative survey analysis.

This project is intended to bring benefits to children in deprived communities. The collected demographic data suggests that Polli:Gen reached a diverse range of children in terms of pupil premium status, special educational needs and disabilities (SEND) and ethnic background.

The evaluation finds several positive findings in terms of Polli:Gen's impact. In particular, children who took part in the project:

- **Gained new knowledge:** Across all topic areas, children's knowledge increased significantly. This was true for all groups of children, including those eligible for pupil premium and those with identified SEND. Case studies suggested many participants enjoyed sharing their knowledge with classmates, school staff, friends and family.
- **Felt more empowered to make changes in their school grounds:** Survey results show that children felt better able to enact physical changes that help pollinators and other wildlife in their school grounds. In addition, case study data suggests that children felt a greater ownership of their school grounds and a sense of pride, both of which motivated them to make (and maintain) positive changes to it.
- **Felt that the condition of heritage had been improved in school grounds and community spaces:** Survey results show a slight improvement in children's perceptions of whether there were good homes for pollinators on their school grounds, from a high baseline score. Case study data suggests significant improvements when it came to school grounds, with more modest improvements in terms of community group spaces.
- **Changed their behaviour:** Case study data suggests that the project led to children changing their behaviour towards pollinators and to nature more broadly, and that this extended towards their home and other outdoor spaces beyond their school. There were fewer examples of Polli:Gen leading to changes in the wider community.
- **Showed ambitions to make longer-term changes to their behaviour:** Across several case study schools, children expressed a desire to make long-term behaviour changes, following the project. In some instances, children had also persuaded friends, family and others to make positive behaviour changes too.
- **Felt more engaged with issues about their local environment and natural heritage:** Survey data shows that more children felt that their actions were connected to changes to the natural environment at their school. Moreover, case studies revealed that children were able to apply knowledge acquired through Polli:Gen to engage with their local environment and natural heritage.

There were also some areas of unexpected positive impact, which are covered in the report. Progress against other outcomes was mixed:

- **There appeared to be limited impact when it came to behaviour change among members of the community:** While case study data suggests that the project led to children changing their behaviour both towards pollinators and to nature more broadly, there are fewer examples of Polli:Gen leading to behaviour changes in the wider community.
- **Findings gave a mixed assessment of Polli:Gen's impact on children's connectedness to nature:** Survey data derived from the Connectedness to Nature (CTN) scale suggests that children did not progress against this outcome through the project. However, qualitative case study data from project officers, teachers and children was more positive. Future evaluations could potentially focus more closely on the links between project motivation and wider social and emotional wellbeing.
- **Rates of physical activity did not increase over the course of Polli:Gen:** Survey data shows that self-reported rates of physical activity fell very slightly between baseline and endpoint surveys. It is likely that these figures were influenced by other factors, such as COVID-19 disruption and colder weather as the term progressed. During the case studies, some staff and children reported Polli:Gen giving opportunities to go outside but did not allow comparison with children's levels of physical activity before the project.
- **Outcomes in terms of social wellbeing were mixed:** The quantitative survey data marks a very modest increase in young people's Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) scores, with falls in life satisfaction and happiness regarding the school they attend. It is worth noting that children's social wellbeing was measured over a period of the COVID-19 pandemic, which is likely to have had a greater (negative) impact on wellbeing than other factors. However, case study data suggest that Polli:Gen may have made a positive contribution to some children's social wellbeing but staff were cautious in their assessments, particularly as the project took place over a short period of time.
- **It was difficult to determine whether members of the wider community, including families and community groups, had greater wellbeing as a result of Polli:Gen:** This outcome was not measured directly in the survey and was difficult to gather from case studies, particularly given that schools had often found it hard to secure strong community ties during the pandemic.

1.3 Programme delivery

Overall, senior leaders and lead teachers in case study schools could see many benefits to the Polli:Gen project and were keen to work with LtL in the future. Additionally, case study data revealed a number of ways in which the design and delivery of Polli:Gen had contributed to positive outcomes.

These enabling factors included:

- Effective leadership from project officers.
- Support from school staff.
- Support from LtL central team.

In addition, case studies highlighted several factors that had a negative impact on the project. These include:

- Length of the project.
- Balance between classroom activities and practical activities.
- Demand on workload.
- Finding the space within school timetables.

1.4 Summary of recommendations

We make the following recommendations for any future roll-out of Polli:Gen:

For Learning through Landscapes

- Carry out more detailed discussions with senior leaders and lead teachers about how Polli:Gen's curriculum relates to the school curriculum.
- Consider whether the current length of the Polli:Gen project is sufficient to make sustained impact at the child, school and community level. This may also involve considering how sessions are spread across the term.
- Develop the community component of the Polli:Gen project. This could involve improving guidance for schools and community groups and how they might collaborate. Project officers, schools and community groups should ensure that their goals are aligned and that results are achievable in the time-frame.
- Allow participant senior leaders and lead teachers more flexibility in deciding the balance between classroom and practical activities. This may vary between year groups and involve trade-offs between outcomes, which should be discussed with schools.
- Consider developing on the areas of unexpected positive impact highlighted in this report, such as professional development for staff.
- Maintain contact with participant schools and consider commissioning future work that looks at the longer-term impact of Polli:Gen on participant children, the school and the wider community.

For schools taking part in Polli:Gen

- Consider how Polli:Gen might build on existing infrastructure the school has to increase benefits derived from the project. This could be physical infrastructure (eg. a small school garden) or staff infrastructure (eg. a professional development lead).
- Work closely with LtL prior to the start of the project to ensure that Polli:Gen design and delivery is closely matched to participant children, the school's curriculum and intended outcomes.
- Protect the capacity of the lead teacher and draw on other members of school staff, where possible, to mitigate workload implications of project participation.
- Continue to work with the community group after Polli:Gen formally finishes to further project impact.

For future evaluators of Polli:Gen

- Consider using a quasi-experimental approach, with a comparison group, to support causal claims of impact.
- Take a multi-year approach to evaluation to assess the extent to which the impact(s) of Polli:Gen have been sustained.
- Develop a stronger means of assessing whether members of the wider community, including families and community groups, had greater wellbeing as a result of Polli:Gen.
- Consider using more granular breakdowns of children's SEND status. This could also involve making a distinction between those children who do and do not have EHCPs.

2 Methods

This mixed-methods impact and process evaluation of Polli:Gen uses a range of quantitative and qualitative data to draw its conclusions.

Quantitative data was collected through a baseline survey (administered in September 2021) and an endpoint survey (administered at the end of the project in December 2021).

The quantitative survey covered a knowledge test centred on the material covered during the project, validated scales for wellbeing and connectedness to nature, alongside additional questions on young people's outlook towards nature, their community and their role within it.

With the help of LtL, CfEY also asked teachers involved in Polli:Gen (lead teachers) to submit demographic data concerning participant children. This allowed CfEY to survey results down by pupil premium status, identified special educational needs or disability (SEND), and ethnicity.

Ethnicity data was principally used to understand the ethnic diversity of the participant cohort, while pupil premium and SEND data was used to assess differences in impact between groups, such as whether knowledge gains were different for children with an identified SEND.

Surveys

The baseline and endpoint surveys used an identical structure and question set, allowing for comparisons between baseline and endpoint scores. The survey draws on two validated scales: the Short Warwick–Edinburgh Mental Wellbeing Scale (SWEMWBS) and the Connectedness to Nature Scale (CNS). Both scales were tested on a group of children, after which we decided to adapt the CNS scale. This judgement was also based on our evaluation of LtL's My School, My Planet pilot in 2020, during which some teachers reported children struggling to access the questions in the CNS.

The CNS was adapted to improve accessibility, while maintaining as much of the original language as possible, to aid comparison with other research and evaluations. These scales were accompanied by questions about young people's school grounds and community environment, their awareness of nature, happiness at school and physical activity, among other areas. We also created a more accessible version of the survey, for use with children with particular communication and language needs. However, the sample of responses for this adapted survey was low (n=23) and we have not included it in our analysis.

We were able to match between 265–318 survey responses for each question (the number of responses varied between questions). In addition, demographic information was collected for between 299–410 respondents (with variation between categories of SEND, pupil premium and ethnicity – none were made compulsory). This means we received matched survey responses for between 51.3 – 61.5% of participants and demographic data for between 57.8 – 79.3%. This is a high response rate, although those who did respond may not be representative of the cohort as a whole.

Children completed surveys either online directly into the Alchemer survey platform, or on paper, with data manually entered onto the platform by LtL project officers. Demographic data was provided by participant schools and matched with individual survey responses. Where survey measures were based on validated scales, they were analysed in line with the available guidance.

Case studies

The qualitative component of this evaluation focussed on four case study schools. Each case study consisted of baseline and endpoint interviews with Polli:Gen project officers, school teachers involved in Polli:Gen (lead teachers), members of the schools' senior leadership teams (SLT), and community members (where applicable and possible). In addition, CfEY conducted baseline and endpoint focus groups with children participating in Polli:Gen.

Initially, CfEY planned to visit three schools, but COVID-19 closures in one school meant a second visit was not possible, so another case study school was added. Taken collectively, this baseline and endpoint case study data allowed CfEY to better understand the progress made against various outcomes over time and see how adults' and children's perspectives changed over time, as well as revealing process-oriented feedback. Interviews and focus groups, topic guides were semi-structured and covered themes related to the project outcomes (see Appendix 1).

Finally, CfEY also worked with LtL to gather photos of project activities, progress made in school and community grounds, and children's work, among other archival material. Data across the four case study schools was thematically organised against the 11 outcomes agreed with LtL prior to the start of the evaluation. In addition, transcripts were also analysed for unexpected impact and insights regarding project delivery, with a focus on enablers and barriers.

Limitations

The quantitative component of this study involves baseline and endpoint measures to explore changes across the project against a range of outcomes. Both the baseline survey and case study visits took place several months after the Polli:Gen project had started. This reduced the time for measurable changes to take place, in an already comparatively short two-term intervention.

Some further limitations related to survey design:

- The pre- and post- tests used as part of this evaluation do show marked changes in certain areas, particularly in terms of knowledge. However, given the absence of a control group, it is not possible for us to determine whether children learnt and retained more or less through Polli:Gen than they would have done if they had not taken part in the project.
- Disrupted delivery due to COVID-19, and exogenous factors (such as restrictions around Christmas and school closures) may have had a significant impact on certain measures, such as social wellbeing and physical activity.

Other limitations related to the case studies:

- COVID-19 factors (such as school closures and concerns about infection) may have affected children's responses to various questions, including connectedness to nature, school enjoyment and physical activity.
- While efforts were made to select a diverse range of children to participate in the focus groups in the school, pupils may have been self-selecting.

3 Findings

3.1 Diversity and accessibility

3.1.1 A wider group of children, families, and their local communities are learning about nature and pollinators in school grounds and community spaces.

Polli:Gen led to a wide group of children learning about nature and pollinators in school grounds and community spaces.

Participant data confirms that many children taking part in Polli:Gen had an identified SEND, came from socio-economically disadvantaged backgrounds and/or were from disadvantaged ethnic groups. In addition, qualitative data indicated that Polli:Gen had enabled families of participating children to learn about nature.

SEND and pupil premium

In the demographic survey, lead teachers reported that 12.9% of Polli:Gen participants had a recognised SEND (15.9% of children at school in England have an identified SEND), while 23.7% of participants were eligible for pupil premium (20.8% of children at school in England are eligible for the pupil premium).

These proportions are high and are likely underestimated, given the low useable response rate to the demographic survey.

Case study data revealed ways in which project officers made efforts to adapt activities to ensure inclusion of children with physical disabilities.

Ethnicity

Participants in Polli:Gen came from a range of different ethnic backgrounds. The two most common groups, Indian and White British, make up over a third of the cohort. Again, given that demographic information was missing for a quarter of children, it is likely that a greater range of ethnic backgrounds were represented on the Polli:Gen project.

Lower prior attainment and EAL

Case studies suggested other groups of children benefited from taking part in Polli:Gen. At one school, the senior leader reported that they had chosen two groups of children in Year 8 to take part in Polli:Gen:

- Those with low attainment in KS2 SATs.
- Those who were new to the UK, and with English as an additional language.

For these groups of children, the opportunity to learn new vocabulary in a practical, outdoor setting as well as in the classroom was seen as particularly beneficial.

Deprivation

Elsewhere, a member of SLT at two case study schools explained that the high deprivation in their school's catchment and issues with anti-social behaviour (and fly-tipping in particular) in the community had motivated them to take part.

For these schools, there was a perception that children would otherwise not have opportunities to take part in practical, outdoor activities that gave them experiences in the natural world:

> "They've been given an experience, so it's something that they might not have been [able to] do with their families (...) it's something to remember."
>
> Lead Teacher, School 4

> "The ones who are on the [school] field in the evening don't [otherwise] get the experiences that other children get when it comes to planting; when it comes to creating their own space."
>
> Senior Leader, School 4

Barriers to participation

Not all children were able to participate fully in all sessions. At one school, the lead teacher voiced concerns about the inclusivity of the project. They explained that some content was too challenging for some children with SEND and more scaffolding was needed. As a consequence, the lead teacher felt they needed to help those children to catch up with classroom content, which meant they were less available to participate in outdoor activities.

For a small number of children in other case study schools, working outside of the classroom proved difficult. There were some instances where children opted out of activities, or where their behaviour deteriorated during sessions and they were unable to finish work outside. However, lead teachers felt that Polli:Gen project officers and schools had done all they could to include these children in the activities.

3.2 Improved knowledge

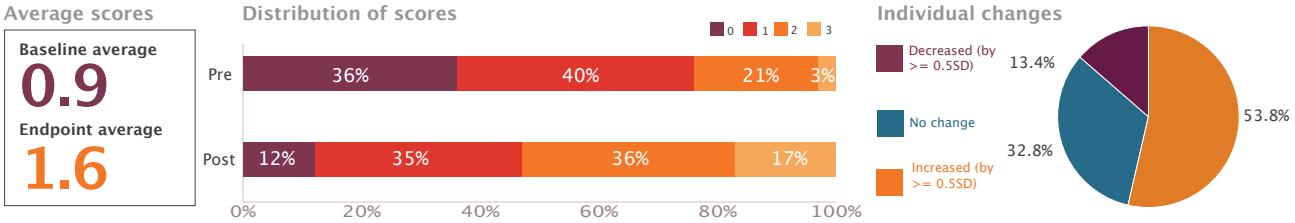
3.2.1 Children have improved knowledge relating to pollinators and their importance.

Children's knowledge of the importance of pollinators, features of pollinators and the school grounds increased over the course of Polli:Gen.

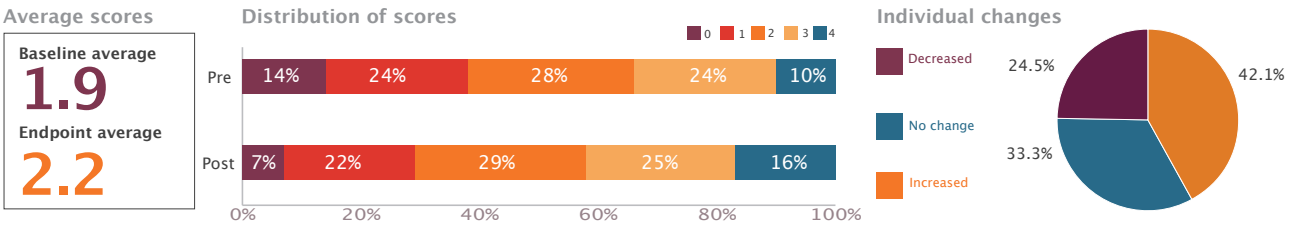
This was also reflected in the case study data. Polli:Gen helped children gain knowledge through well-planned, engaging sessions; giving children opportunities to apply their knowledge outdoors; and aligning content to school curricula. Polli:Gen's focus on acquiring knowledge outside the classroom may have helped attract schools to take part.

Children's knowledge

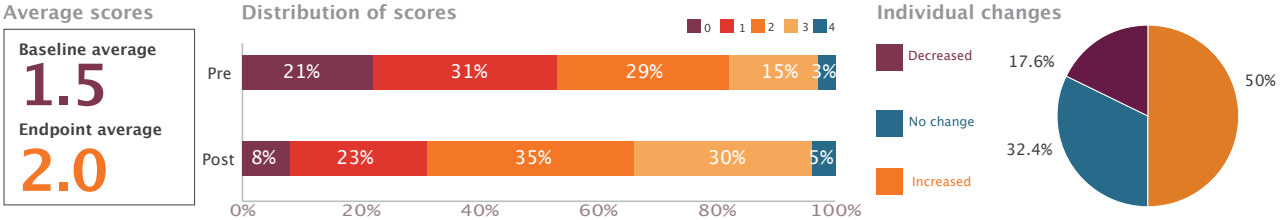
Questions about the importance of pollinators (Q14–16 combined) n=314



Questions about pollinators (Q17–20 combined) n=318



Questions about the school grounds (Q21–24 combined) n=318



Survey

The data breaks knowledge questions down into those about the importance of pollinators (Q. 14–16 in the survey, max score =3), knowledge of pollinators (Q. 17–20, max score = 4) and the school grounds (Q. 21–24, max score =4).

Pre- and post- tests suggested that children made progress in all knowledge areas covered over the Polli:Gen project.

There were marked improvements for all sub-groups, including children eligible for pupil premium and those with an identified SEND across all topic areas. At the individual level, over half of all children had significant (> 0.5 deviations) increases in their knowledge about the importance of pollinators and the school grounds. This figure was 42.1% for questions about pollinators. Overall, survey evidence shows strong evidence that children gained knowledge over the course of Polli:Gen.

Case study insights

Case studies also suggested that children acquired new knowledge as a result of taking part in the project:

> "In terms of knowledge, they now understand about pollination. They can tell you lots of facts... things about bees that they wouldn't have known before."
>
> Teacher, School 4

For example, the lead teacher at School 1 noted that when the children conducted their community visit towards the end of the project, children were explaining facts about pollinators to community members which they had learnt at the start of the project. In particular, she recalled one child with an identified SEND, who was able to detail information about pollinators to others.

> "And it obviously stuck in her mind because she described it extremely well as though it was like yesterday that she'd done that. And actually this child that was doing that was a SEND child."
>
> Lead Teacher, School 1

The community group corroborated children's grasp of knowledge relating to pollinators and were impressed by the information they were able to share about pollinators and their habitats. This had then proven useful to the community group's development of their own pollinator-oriented project.

> "We're starting our own project and there's not a lot that we know about like bees and pollinators and stuff like that. So we have actually learned quite a bit from the kids."
>
> Community Group Representative, School 1

Factors enabling knowledge acquisition

Three factors appeared to contribute to successful knowledge acquistion.

- Content delivery was varied and engaging, with the sessions in the school grounds allowing children to experience first-hand concepts and ideas they had covered in the classroom. The project officer at School 2 felt that seeing insects in the school grounds allowed the children to further the conceptual understanding they had acquired in the classroom. Classroom sessions were also well-planned and delivered. For example children at School 1 reported that the project officer explained concepts and processes in a variety of ways, ensuring that all children could understand the content. At school 3, the lead teacher observed conversations between children about the knowledge they had acquired during activities, something she felt was unusual and positive in comparison to purely classroom-based lessons.
- Polli:Gen's curriculum design helped children to retain knowledge through planned repetition of facts and concepts throughout the project. This was seen as working well at KS2, but less so at KS3. The lead teacher at the secondary case study school (School 3) felt that for KS3 children there was too much repetition and the content did not always provide enough age-appropriate stretch.

> "They learned the basics and then I felt like it was a little bit repetitive in what they had done. So the content, it wasn't challenging enough at that stage [mid-way through the project] because they were just sort of covering the same thing over and over again."

Senior Leader, School 3

Similarly, in KS2 the project was most closely aligned with Year 4. In school 4, the lead teacher felt that weaker curricular ties in Year 5 meant that the project was less coherent with what children were learning in science lessons at the time. The lead teacher was reportedly not included in discussions about curricular links, which came from an outdoor learning lead. In other schools, lead teachers played a role in aligning Polli:Gen and school curricula.

- Content was aligned with science curricula, and helped to consolidate elements of knowledge children had acquired in previous years. At School 2 for example, elements of content taught during Polli:Gen helped children consolidate knowledge they had picked up in science two years previously (in Year 4).

> "It was brilliant because we did a plant topic and then after that the Polli:Gen project came around. So it was kind of all linked together. They all remembered the previous learning."

Lead Teacher, School 4

The role of knowledge in attracting schools to Polli:gen

Finally, Polli:Gen's knowledge component may have helped attract some schools to the project.

A senior leader at school 3 reported that the links to the KS3 curriculum on ecosystems were a reason they chose to take part in Polli:Gen.

The key reason School 3 chose to take part in Polli:Gen was the opportunity to apply knowledge outside the classroom, as this senior leader explained:

> "I think that was what attracted us: that it's not just theoretical. They are going to be hands on, going to be outside, going to be involved with things rather than just classroom based."
>
> **Senior Leader, School 3**

3.3 Changing behaviours to make changes to school grounds and the local community

3.3.1 Children feel empowered to enact physical changes that help pollinators and other wildlife in their school grounds.

Survey results suggest that children participating in Polli:Gen felt better able to make changes to their school grounds that help pollinators at the end of the project.

The survey also suggests that young people felt more empowered to make changes to the natural environment at their school following Polli:Gen. At baseline (before children had begun making changes to the school grounds as part of Polli:Gen), children generally felt some sense of empowerment. This was strengthened by the end of the project.

This was also borne out in the qualitative data, with young people making tangible changes to their school grounds and beyond.

Survey insights

Over a third of children felt more empowered to change their school grounds to help pollinators following the project. Overall, the average score for this question (7a) increased from 4.2 to 4.5. Notably, there was a significant rise in the proportion of students that strongly agreed with the statement, moving from 45% to 61%. Similarly, the average score for a question about children's ability to change the environment at their school (8b) increased from 3.5 to 4.0, with scores increasing for 46.3% of respondents. The proportion of students strongly disagreeing with the statement 'Nothing I do will change the natural environment at my school' (which was reverse scored), increased from 27% to 45%.

Children's empowerment to enact physical changes

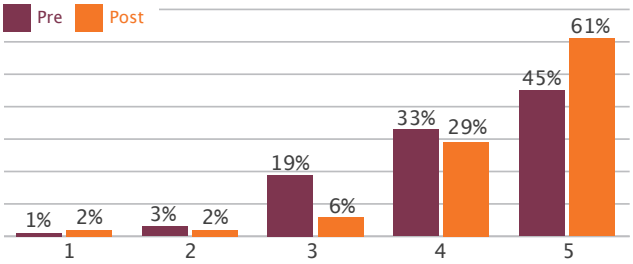
"I can change my school grounds to help pollinators such as bees." n=311

Average scores

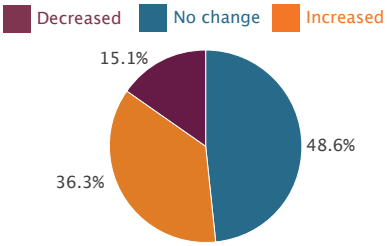
Baseline average **4.2**

Endpoint average **4.5**

Distribution of scores



Individual changes



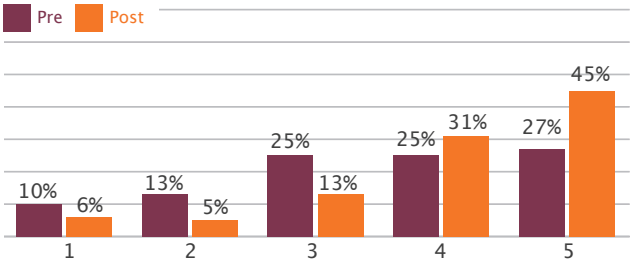
"Nothing I do will change the natural environment at my school." n=298 (reverse scored)

Average scores

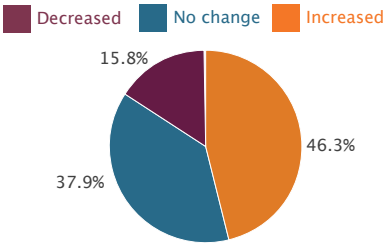
Baseline average **3.5**

Endpoint average **4.0**

Distribution of scores



Individual changes



Case study insights

- **Ownership of changes:** Children in all case study schools demonstrated their growing sense of empowerment to enact physical changes in their school grounds. Children were enthused and excited by the agency they had to make changes in their school grounds.

> "It gives them that sense of 'I'm here. I'm being listened to, and I'm actually sort of taking part in this particular project, but also I helped to build this as well.' So it gives them that sense of ownership."
>
> Lead Teacher, School 2

At School 4, children told us that they took great pride in returning to the garden they had cultivated, ensuring that the space was being looked after.

Children in two case study schools ran sessions for younger year groups to showcase their Polli:Gen work to ensure that the changes they make will be sustained in the longer term.

Staff in case study schools felt that the extent to which children felt empowered by the changes they had made depended partly on the scale of those changes.

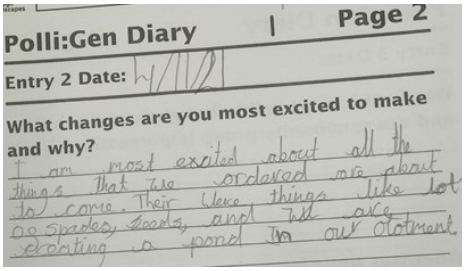
For example in School 1, while their overall view of Polli:Gen's impact on school grounds was positive, the project officer felt that some changes were not visually noticeable, and that children may have felt more empowered if their contributions were more striking.

In contrast, in School 4, where the lead teacher felt that significant changes had been made to the school grounds, children reportedly had higher self-esteem and were using their initiative to take care of the natural world in their local community:

"It's going outside: planning, being practical and actually seeing what they produce. And I think that's really vital for our children in this community; that they see what they've made."

Senior Leader, School 4

- **Making changes in the community:** Children in case study schools held mixed views about their agency to make changes beyond the school gates. Some were positive, and felt empowered to make changes in their community. For example, the project officer at School 4 recalled conversations with children where they explained that they had been going to the park in their spare time to do litter picks with their parents and their frustration at litter when they go out into the community. Others felt that they could only make changes where they were allowed to by adults. For example, children at School 1 felt that the project had taught them about the importance of their local environment and reported feeling happy that there were now more habitats for pollinators in the school grounds and at the community centre. However they were unconvinced that they would be able to influence other local spaces such as parks.
- **Legacy:** In all case study schools, teachers and SLT were keen to enable children to maintain and make use of the changes made as part of Polli:Gen. In School 4 for example, SLT had been speaking to school caretakers about how to develop the school grounds and how any positive changes could be sustained. The project officer also felt that teachers were more receptive to outdoor learning as word had spread through participant teachers, and noted that some children were going to join a group run by the school's eco-lead to continue their work.


Polli:Gen Diary Page 2

Entry 2 Date: 4/11/21

What changes are you most excited to make and why?

I am most excited about all the things that we ordered are about to come. There were things like lots of spades, seeds, and we are creating a pond in our allotment.

▲

Child's diary excerpt, School 2: "I am most excited [that] all the things that we ordered are about to come. There were things like lots of spades, seeds and we are creating a pond in our allotment."

3.3.2 The condition of heritage has been improved in school grounds and community group spaces.

Overall, survey results suggest a slight improvement in children's perception of whether there were good homes for pollinators on their school grounds, from a high baseline. Qualitative data, on the other hand, revealed significant improvements to school grounds, and to a less extent community group spaces.

Survey insights

Survey results showed a small increase in children's perception of whether there were good homes for pollinators in their school grounds, with a small increase in average scores from 3.7 to 3.9. Most positive change occurred at the upper end of the scale, with the proportion of children strongly agreeing with the statement rising from 25% to 31%.

The condition of heritage

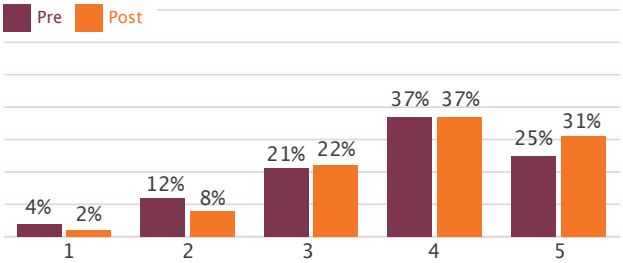
"There are good homes for pollinators such as bees in my school grounds." n=300

Average scores

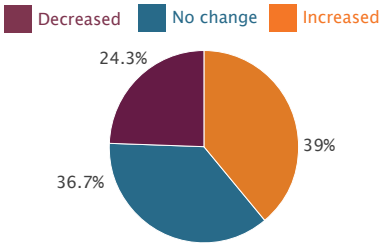
Baseline average **3.7**

Endpoint average **3.9**

Distribution of scores



Individual changes



Case study insights

- **Improvements in the school grounds:** At three of the four case study schools, children had made clear improvements to the habitats for pollinators and other wildlife in their school grounds. At one school, COVID-19 had meant improvements were still ongoing. School staff were clear that outdoor spaces had been improved. At School 2, for example, the lead teacher reported that Polli:Gen created nature spaces for children that did not otherwise exist in the local area.

> **"They haven't really got open spaces. They've got a few tiny little parks and those parks are polluted with rubbish... So they haven't actually got anywhere lovely to sit and play and just read a book. This is their back garden and that is really good for them."**
>
> Lead Teacher, School 2

There was some evidence that Polli:Gen had prompted schools to think more about their use of their outdoor spaces. At School 3, LtL asked questions at the outset of the project which helped the senior leader to acknowledge the existing spaces in their school grounds, and how they could be used. For example, recent building work meant that some areas of the school grounds did not have uses at the start of the project, and Polli:Gen helped the school find uses for them that also encouraged nature.

- **Improvements in the community:** Case studies revealed a mixed picture in terms of Polli:Gen's impact on community spaces. Where children had been able to spend time working in community spaces, there had been improvements. At School 4, the lead teacher explained that children had enjoyed making their allotment area more pollinator-friendly, as well as their litter picking with a local community group.

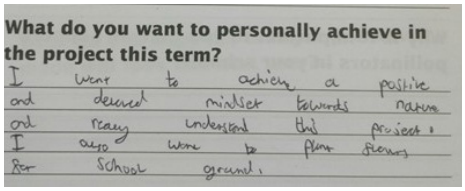
However, at other case study schools COVID-19 and timetabling issues had made community visits difficult. In two case study schools, children had not yet had a chance to make changes to community spaces. Nevertheless, the community groups working with those schools planned to use their ongoing partnership with schools to improve their use of outdoor spaces.

3.3.3 Children and the wider community have changed their behaviour.

Case study data suggests that the project led to children changing their behaviour both towards pollinators and nature more broadly. There was evidence of children being inspired by Polli:Gen to protect pollinators, improve gardens and outdoor spaces at their homes, and carry out other pro-environmental actions. There were fewer examples of Polli:Gen leading to changes in the wider community.

Case study insights

- **Changed behaviour in school:** Children in all case study schools demonstrated changes in their protectiveness towards pollinators. Whilst at the start of the project, many children admitted feeling fearful of bees, towards the end of the project they were taking steps to protect bees, including handling them. According to the lead teacher at School 1, children found bees in the school grounds struggling with the cooler weather. The lead teacher suggested that in the past these same children would not have noticed this or been concerned but, following Polli:Gen, they took the bees to plants they had planted in the school grounds to protect them. At School 4, children also expressed concern about how other children were treating flowers and insects, suggesting they were invested in the work they had done on the school grounds. The project officer at the school explained that some children had shared their knowledge with their parents, who had then joined litter picking groups or otherwise become more invested in looking after community spaces. At another school, children told us about their new sense of protectiveness over pollinators, stopping children from other year groups killing bees in the playground.



▲

Child's diary excerpt, School 3: "I want to achieve a positive and deserved mindset towards nature and really understand this project. I also want to plant flowers for school grounds."

Children also demonstrated changed behaviour through their attitude to planting, both in the school grounds and at home. One child at School 3 described this attitude as a new "positive mindset towards nature".

Children also demonstrated changes in other pro-environmental behaviours.

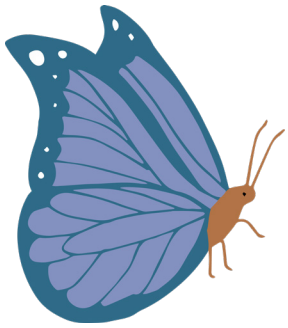
At School 4, the senior leader reported that children who had been involved in Polli:Gen had lobbied their school council to promote more greenery and litter picking in the school grounds. At this school, children who had not taken part in Polli:Gen had been keen to get involved in maintaining the gardens built as part of the project.

The school had responded by establishing an after-school gardening club and inviting participants in Polli:Gen to give an assembly to other year groups explaining what they had done on the project and how looking after the school grounds would benefit the school.

- **Changed behaviour in the community:** There were fewer examples of changed behaviour in the community, although at one case study school Polli:Gen participants had become involved in community litter-picking groups.

> **"Being out of school, being able to talk to the people in their community, family members, friends (...) they've actually taken what they've learned and used here and taken it home, which has then benefited everybody else."**
>
> **Lead Teacher, School 4**

In general, interviewees felt that Polli:Gen offered potential to impact community behaviour (for example, through planting in community green spaces) but that there had been limited time for such changes to take place.



3.3.4 Children intend to make long-term changes to their behaviour.

Across several schools, children expressed a desire to make long-term changes to their behaviour in light of Polli:Gen. In some instances, children had also persuaded friends, family and others to make positive behaviour changes too.

Case study insights

▲

Project mood board, School 3.

In all case study schools, children were able to make links between the activities they carried out in Polli:Gen and longer term positive impacts on the environment. For example, children reported intentions to avoid using pesticides, as demonstrated in this mood board made by children as part of their project planning at School 3.

In three case study schools, Polli:Gen supported pre-existing environmental campaigns to influence child, staff and parent behaviour. For example, School 2 were partly motivated to participate in Polli:Gen to help them gain Green Flag awards.

Children at School 1 similarly recognised how Polli:Gen contributed to their eco-school status. However some initiatives were planned as a direct consequence of the project. For example, School 4 planned to start a gardening club to make use of the changes made in the school grounds as part of Polli:Gen.

There was some evidence that children's intentions to change their behaviours might impact on the community through the influence they exerted on their families.

For example, the children, project officer and lead teacher at School 1 reported that, as part of homework connected to the project, some children had passed on knowledge about suitable habitats for pollinators to their families. Children at School 1 understood their project work in the context of wider issues affecting the natural world.

> **"We can live in a better environment when we grow up, because now you have a very severe case of climate change and we just wanted to try and improve... planted some wallflowers and then that kind of grow in spring, so it will attract more pollinators to pollinate them."**
>
> **Child, School 1**

3.4 Local environment and nature

3.4.1 Children feel more engaged with issues about their local environment and natural heritage.

Children's engagement in issues about their local environment and natural heritage increased during Polli:Gen. Survey data shows that more young people felt that their actions were connected to changes to the natural environment at their school.

Meanwhile, the qualitative data revealed how children were able to draw on the knowledge acquired through Polli:Gen to engage with their local environment and natural heritage.

Survey insights

There was an increase in the average score that young people gave when asked whether their actions will lead to changes to the natural environment at their school. In particular, the proportion answering 'Strongly Agree' (5) for this question rose from 27% to 45%.

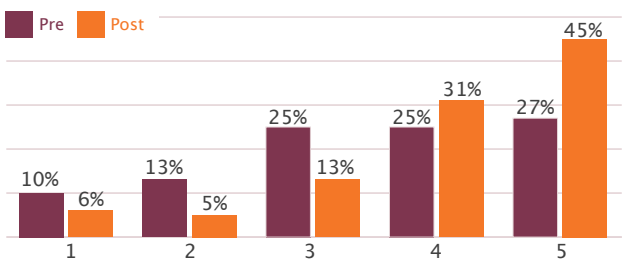
Children's engagement with issues about their local environment and natural heritage

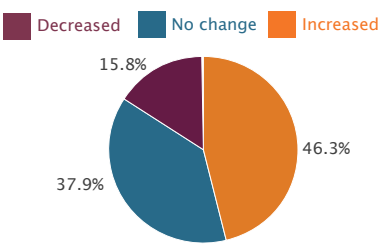
"Nothing I do will change the natural environment at my school." n=298 (reverse scored)

Average scores

Baseline average 3.5

Endpoint average 4.0

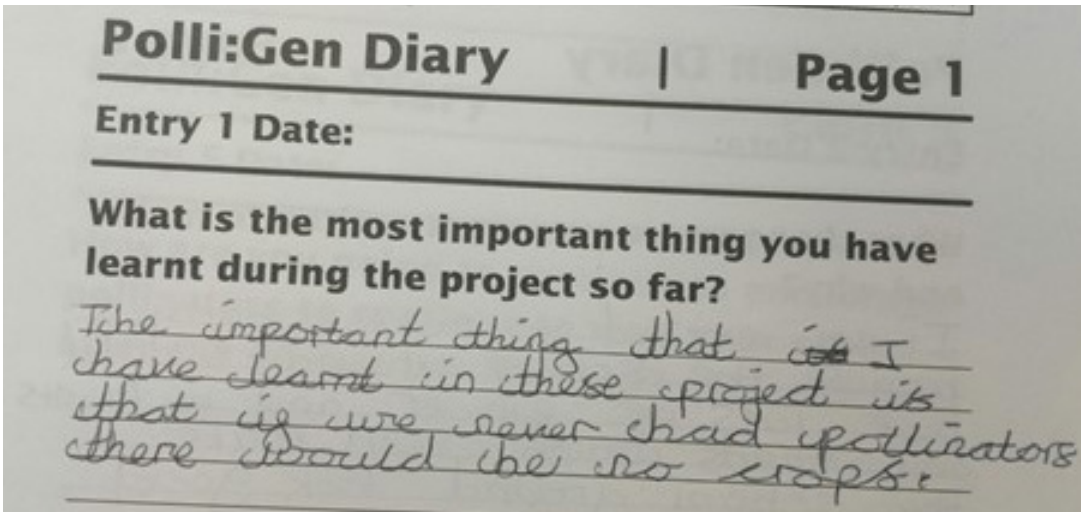




Case study insights

Case study data supported these survey-based changes in children's feelings of engagement with the environment. Across all case study schools, children were able to draw a link between the work they were doing in their school grounds and a wider impact on pollinators, nature and the environment, as this pupil diary from School 2 exemplifies:

> "There are not really many trees. They've chopped them down. That's not really good [because trees]... take in the CO2 and then replace it with oxygen."
>
> "Now that drive is all concrete, and there are not many trees in sight."
>
> Children, School 2



▲

Child's diary excerpt, School 2: "The important thing that I have learnt in [this] project is that if we never had pollinators there would be no crops."

Children also reported that they were able to apply their knowledge of biodiversity and plants to their local area, recognising particular species and noticing aspects of local spaces that were more beneficial to pollinators.

Children had strong feelings about how nature had not been looked after in their local area, and linked these feelings to their experiences and knowledge acquired during Polli:Gen:

The project officer at School 4 noted that children in their school had tied their project content to the COP26 summit, with references to climate change which was a key part of the school's curriculum.

The project officer felt that this helped connect the knowledge they were acquiring through the sessions to wider issues affecting the natural world.

3.4.2 Children feel more connected with nature.

Overall, our findings give a mixed assessment of Polli:Gen's impact on children's connectedness to nature.

Quantitative data derived from the Connectedness to Nature Scale (CNS) suggests that children did not progress against this outcome during the course of the project. However, qualitative assessments from project officers, teachers and children were more positive.

Survey insights

Across the full sample, children's CNS scores were more likely to increase (34.3% of children) than decrease (24.9% of children). However, overall, average CNS scores did not change between baseline and endpoint, with only very small increases for children with an identified SEND and those eligible for pupil premium.

Children's connection with the outdoor environment and nature

Connection to nature (adapted CNS) n=265

Average scores

Baseline average **3.9**

Endpoint average **3.9**

Distribution of scores

SEND pupils (n=32)

Baseline average **3.8**

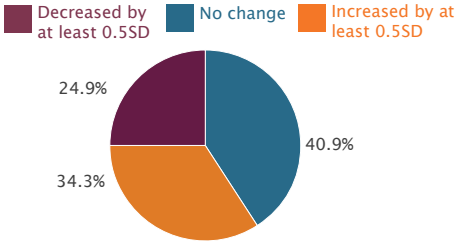
Endpoint average **3.9**

Pupil Premium pupils (n=32)

Baseline average **3.8**

Endpoint average **3.9**

Individual changes



One possible explanation for this lack of significant change is that scores for CNS were high at baseline. 94.7% of children started the project with a baseline score of three or above (out of five), while 46.0% of children started with scores above 4.

This left less headroom for improvement during the course of the Polli:Gen project. Future evaluations should draw on the adaptations we made to the CNS scale to improve accessibility, which were received positively by teachers.

Case study insights

Case studies revealed examples of children feeling connected to nature through taking part in Polli:Gen as this child exemplified:

> "Being in nature is relaxing because in the spring you can see all the bees pollinating and you can hear the birds and it's really sunny."
>
> Child, School 4

There were examples when project and school staff noted changes in children's connection to nature. Although the survey data suggests children had a high baseline on average, teachers were aware that some pupils began the project with limited connection to nature:

> "When we first went outside, some of them, I don't think they've ever seen a stinging nettle... not all of them have got gardens, not all of them have got outdoor space that they go."
>
> Lead Teacher, School 1

A common finding across the case study schools was that there was a clear difference between children's connection to nature at the start of the project and at the end of the project.

At School 1, for example, the lead reported that they had asked children about nature stories or encounters they had outside school, on a semi-regular basis throughout the project. At the end of the project, children's stories contained greater detail and a greater number of children were keen to share stories.

> **"They would start to go into extensive detail about one little experience they'd had with an observation. Sometimes it would take up too much time [laugh] but I think that was a positive sign that they were actually looking at things in more detail."**
>
> Project Officer, School 1

Across case study schools, children showed clear evidence of feeling a greater connection to pollinators.

All were able to describe, in simple terms, how pollinators contributed to human life and how human actions could impact on pollinators.

A number of children noted that they had gone from being afraid of minibeasts to feeling comfortable picking them up.

Children described how being in nature made them feel happy, and how they wanted more experiences in nature.

3.5 Physical and mental wellbeing

3.5.1 Children have improved levels of physical activity.

Polli:Gen presented children with an opportunity to engage with physical activity during Polli:Gen sessions and community visits.

The survey showed that average physical activity rates declined very slightly between the baseline and endpoint. It is likely that these figures were influenced by other factors such as COVID-19 disruption and colder weather. While some staff and children discussed the opportunities that Polli:Gen created for physical activity, evidence for increased physical activity was comparatively weak.

Survey insights

Survey data suggested a slight decline in the number of times young people had been 'very active' between baseline and endpoint. Given that the baseline was conducted at the start of the autumn term and the endpoint at the end of the autumn term, it is possible that COVID-19 restrictions, weather and other factors may have affected results. Many factors shape young people's activity, and it may be instructive to compare these results to national trends concerning young people's rates of activity to put them in greater context.

Children's levels of physical activity

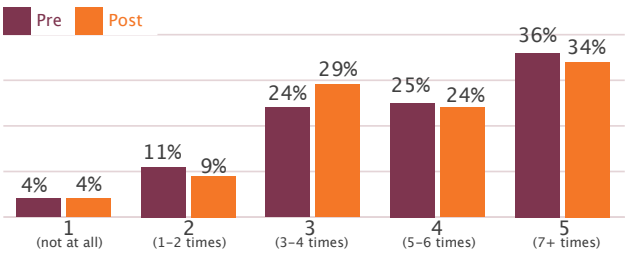
"In the last 7 days, how often have you been very active?" n=316

Average scores

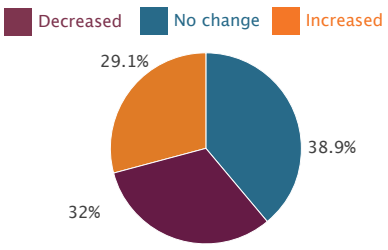
Baseline average **3.8**

Endpoint average **3.7**

Distribution of scores



Individual changes



	Baseline average	Endpoint average
SEND pupils (n=43)	3.7	3.6
Pupil Premium pupils (n=75)	3.9	3.9

Case study insights

Polli:Gen included numerous strenuous activities for participating children. For example, one child at School 4 described the physically demanding work of digging up a pond and removing plants.

Case studies also suggested that schools' existing efforts to support children to be more active may have muted the impact of the Polli:Gen project in this area. The lead teacher at School 1 described how they offered children plenty of other opportunities to be active. Likewise, children at School 2 reported that there were opportunities for physical activity during Polli:Gen but that they already did at least 30 minutes of strenuous exercise a day through a mixture of formal sports, informal sports, and playing with friends. Across all case study schools, children enjoyed the physical activities that were part of Polli:Gen sessions:

> **"I liked digging. It was kind of hard, but like once you get used to it you get better at it."**
>
> Child, School 4

3.5.2 Children have improved social wellbeing.

Outcomes in terms of social wellbeing were more mixed. The quantitative survey data showed no change in young people's Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) scores, with falls in their life satisfaction, or happiness regarding the school they attend.

While some of the qualitative insights suggest that Polli:Gen may have made a positive contribution to some children's social wellbeing, staff were cautious in their assertions, particularly as the project took place over a short period of time.

Survey insights

On average, children's scores on the Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) remained the same between baseline and endpoint, with a negligible increase from 24.8 to 24.9 across the cohort.

Increases were slightly higher among children eligible for pupil premium (21.9 to 22.1) and there was a larger margin of change for children with an identified SEND (21.3 to 21.9).

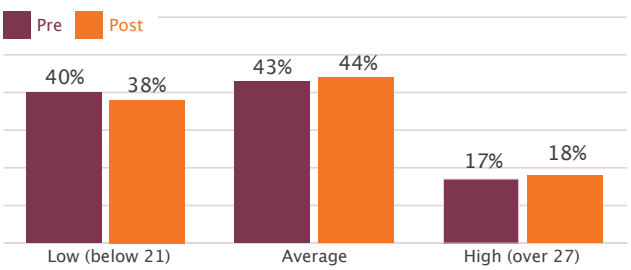
Children's social wellbeing

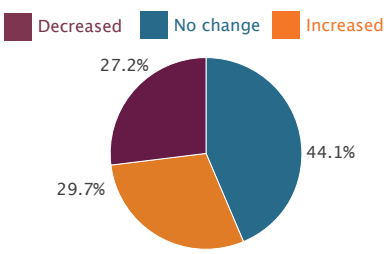
The Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) n=272

Average scores

Baseline average **24.8**

Endpoint average **24.9**





SEND pupils — Baseline average **21.3** — Endpoint average **21.9**

Pupil Premium pupils — Baseline average **21.9** — Endpoint average **22.1**

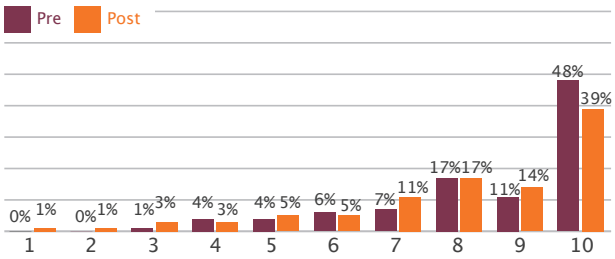
"How happy are you with your life as a whole?" n=277

Average scores

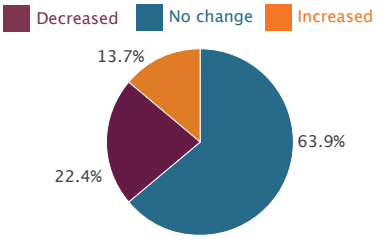
Baseline average
8.5

Endpoint average
8.1

Distribution of scores



Individual changes



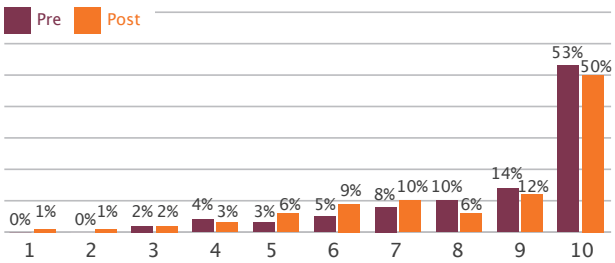
"How happy are you with the school that you go to?" n=274

Average scores

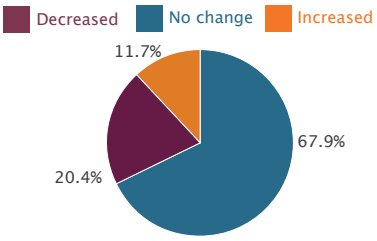
Baseline average
8.6

Endpoint average
8.3

Distribution of scores



Individual changes



Overall, average scores for children's happiness with their lives declined from 8.5 to 8.1, with similar falls for those eligible for pupil premium and those with an identified SEND.

These trends were similar when it came to children's happiness with the schools they attend. Baseline averages were high for both of these measures, at 8.5 and 8.6 out of 10 respectively, and the significant proportion of children giving scores of 10 (the maximum score) for these questions at baseline largely accounts for the low proportion of children increasing their scores at endpoint.

The wider context of the period being measured is also worth acknowledging, with an autumn term disrupted by COVID-19, and with the pandemic entering a new wave towards the end of the period.

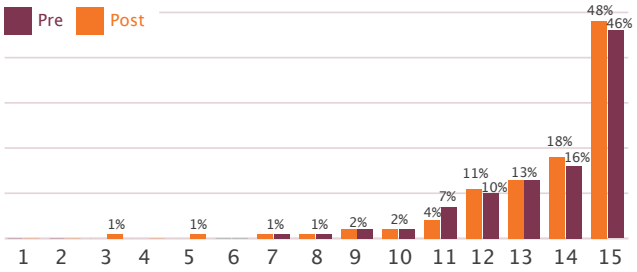
Friendships, play and working together in the school grounds n=302

Average scores

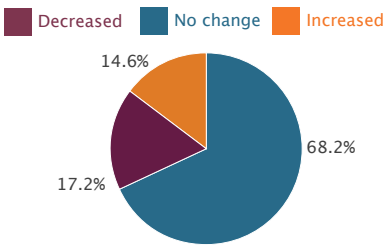
Baseline average
13.7

Endpoint average
13.4

Distribution of scores



Individual changes



Question 12 of the survey was split into three parts, focusing on whether young people feel they a) have good friends at school, b) enjoy playing with friends at school, and c) enjoy working in the school grounds with friends.

Taken together, scores show a small decline from 13.7 to 13.4 during the course of the project. Baseline scores were high, with 90% of children scoring 12 or above out of 15, and 48% scoring 15. This left limited room for their scores to improve between baseline and endpoint.

Case study insights

We observed a number of instances where Polli:Gen led to activities with the potential to improve children's wellbeing:

- School 2 used the peace garden children had made during Polli:Gen for mindfulness lessons with a nurture group.
- At School 3, teachers felt that children working together in teams helped those who had recently arrived at school (and in the UK) to make friends and develop confidence in their peers.
- In School 4, games played as part of Polli:Gen gave opportunities for children to interact with one another. In the focus group, one child recalled working together to rake away leaves and clear space, while another recalled children helping each other out with some heavy lifting.

The lead teacher at School 1 was unsure about the extent of impact in this area, but perceived that the group had worked well together, especially when working with children outside their friendship groups.

The lead also noticed some small changes in resilience, with some children reacting more positively to being cold, wet or muddy. However, they added that some children needed a longer timescale to develop this sort of resilience and attitude adjustment.

> "It's not going to change overnight. This is going to take time."
>
> Lead Teacher, School 1

Children at School 1 reported that they enjoyed the sessions being outdoors, and that they valued a break from the classroom and their books.

Likewise, children at School 2 valued the different pace that Polli:Gen offered compared to regular lessons.

> "Instead of being stressed - one hour-long lesson has so many things to do - it's just a calming activity. Just go outside in nature and explore and discover [something] different."
>
> Child, School 2

3.5.3 Members of the wider community, including families and community groups, have greater wellbeing.

This outcome was not measured directly in the survey and was challenging to determine from case studies, particularly as schools had often found it difficult to secure strong community ties. Although we did not find evidence of impact, we did find evidence of schools and community groups planning to do further work in this area.

Case study insights

There were a number of challenges when it came to organising and running community-based sessions. One of the difficulties here was identifying community groups to partner with schools. While most schools managed the planned two visits, one case study school had no interactions with a community group, whilst another had only one visit.

In some cases, difficulties arose because walking distances between schools and groups made it impractical. In others, community groups were either unwilling to be involved in the project or pulled out, mainly due to COVID-19 restrictions. Other challenges included safeguarding administration and fitting visits into the timetable (particularly for Schools 3 and 4). School 3, a secondary school with different lessons timetabled every hour, decided that it would not be possible to conduct a visit during the school day, and so planned to visit the community group in 2022 as an optional after-school activity.

Despite these difficulties, case study schools and community groups saw the value of engaging with one another, and the potential for the project to lead to wider community wellbeing. The lead teacher at School 1 expected to see benefits to the wider school community in the summer, when children can get outside for longer periods. At the same school the community group believed that, once children were able to visit the group, it would lead to better links between communities in the area.

School 2 were planning to open a peace garden to parents and local allotment groups, which may result in some progress against this outcome. School 3 also planned to continue with this aspect of their work in early 2022:

> **"We didn't get to go away and do the community visit, but we did have connections with someone and that's something we're still going to try and arrange next term."**
>
> **Lead Teacher, School 3**

4

Unexpected Impact

4.1 Additional evidence

While this evaluation primarily addresses a pre-established set of outcomes, we found evidence of other forms of impact generated by the project, including curriculum development and improved community ties.

Case study insights

Some schools reported that Polli:Gen had benefited their curriculum development.

School 1 reported proposed changes to their science curriculum, with plans for some science lessons to continue outdoors after their Polli:Gen project ended.

Some children also reported gaining additional knowledge and skills through participating in Polli:Gen. For instance:

- Planning and managing the budget for the project.
- Oracy through debating sessions.
- Creative writing in School 1, where one child said that being outside had aided their imagination.

Polli:Gen created opportunities for development for school staff.

In School 3, for example, Polli:Gen had enabled a Teaching Assistant who was supporting the project to gain the backing of senior leaders to develop a wildlife area in the school grounds.

Schools and community groups benefited from the partnerships Polli:Gen created.

At School 1, Polli:Gen had introduced the school to a community group that they had previously been unaware of.

The school is now intending to make more of those links and is signposting children to the community centre for after-school activities. The community group representative had seen an increase in children from School 1 signing up to their projects.

Community groups saw value in LtL's work to broker connections with schools, and the opportunity to form new partnerships with schools was a particular selling point for community groups to get involved with Polli:Gen in Schools 1 and 3.

> "So we wanted to find, just to have an introduction to the school, to be honest, and the fact that it was going to help us design a garden, which we were in the throes of developing anyway. ...It was a nice fit."
>
> Community Group Representative, School 3

5

Project Delivery

5.1 Project enablers

Schools were overwhelmingly positive about their experience of how the Polli:Gen project had been delivered by LtL. All staff expressed a desire for their school to participate in Polli:Gen or a similar project in the future. Project officers were similarly positive about how the project had been run and their relationships with participant schools.

However, some project officers and school staff encountered challenges with project delivery and made some suggestions for improvement.

Several factors contributed to the successful delivery of Polli:Gen:

Effective leadership from project officers: Across the case study schools, particular features of project officers' ways of working had contributed to the success of the project:

- Explaining what activities would be taking place and what was needed from the lead teacher in advance.
- Being available via text for instant communication.
- Quality of the planning.
- Interaction with the children.
- Rapport with the teacher.
- Subject knowledge.
- Adapting sessions to the needs and abilities of children in the group.

> "[Our project officer] has been amazing. She's really good taking advice on. She would send me her resources beforehand... the whole reason why the project has turned out the way it has is because of her hard work... she's been so good with the students. She's learned their abilities really quickly, so the delivery's been excellent. Her knowledge is excellent. I think her skills in terms of her managing her time, the fact that she was so accommodating for us on every level, I think that's really helped us with the project and push it forward as well."
>
> Lead Teacher, School 3

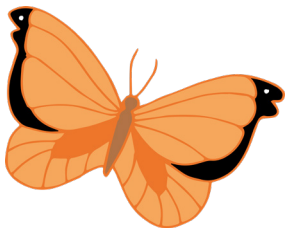
Support from school staff: Interactions with schools had generally been effective for several reasons:

- Frequent and regular communication between the lead teacher and project officers.
- Support with printing/developing resources and classroom layout (both inside and in the school grounds).
- Support with communications with the community group in the initial stages, until they had established their own direct links with the group.
- Involving a number of senior leaders, teaching and support staff in delivery.
- Teachers' existing commitment to environmental initiatives such as the eco-school awards.
- Schools identifying spaces for work in the school grounds that built on existing resources: for example, linking Polli:Gen's development of the grounds in School 4 to an existing outdoor playground to ensure it was an area that will be used.

These features of effective collaboration were partly enabled by giving school staff some freedom and flexibility to tweak aspects of delivery; for example, asking for advice about engaging individual children and involving them in decisions about planning.

The buy-in this generated may also have a positive impact on legacy, ensuring that school staff feel ownership of the changes in the school grounds and have ideas about how to make use of them.

Support from the LtL central team: Flexibility around covering the planned curriculum in a different order, or missing some sections altogether, proved helpful in keeping the project running during COVID-19 disruption.



5.2 Project barriers

COVID-19 caused significant disruption to project delivery through school closures, pupil absences and difficulties being able to visit community groups. There were also some suggestions to lengthen the project, rebalance practical and classroom activities, reduce demands on workload and provide flexibility with school timetables.

In all schools, COVID-19 had caused disruption, leading to school closures, pupil absences and rescheduled or cancelled Polli:Gen sessions.

In School 3, one session was delivered remotely, but this was not possible for all sessions during school closures, or at all schools.

In addition to COVID-19, other barriers included:

- **Length of project:** One case study school felt that the project was too short, both in terms of curtailing preparation time (especially for collaborative working to tailor activity to the needs of children with SEND), and also in restricting the time towards the end of the project for multiple community group visits.
- **Balance between classroom activities and practical activities:** Across case study schools, children and staff felt that they wanted to spend more time planting and building in the school grounds. This was partly a result of COVID-19 disruption in the autumn term, and partly a feature of project design; practical activities followed completion of the classroom curriculum. At one school the lead teacher and project officer suggested integrating the practical sessions and classroom sessions throughout the project timeframe, rather than completing the classroom element before moving onto the practical element.
- **Demands on workload:** The lead teacher at School 2 felt there was too much printing and photocopying at short notice and that they would prefer a week's notice so they could make use of the reprographics team in the school. On the LtL side, one project officer said that it was challenging to juggle admin, planning, community group coordination and other responsibilities. They suggested this would be made easier if they reduced the number of schools they were working with.
- **Finding space within school timetables:** Two case study schools reported difficulties with finding space within the timetable for Polli:Gen. In one secondary school, the project officer described having a 55-minute slot each week to deliver two hours' planned activity which was further curtailed by getting the students out and then back inside a large secondary school building. The lead teacher at this school suggested that the full project might run best as an after-school club in secondary schools, with fewer constraints around timetabling. Within primary schools there was greater flexibility, but one senior leader described competing priorities within the curriculum.

6

Conclusion and recommendations

This report presents an independent evaluation of the Polli:Gen project. The effectiveness of the project was assessed against a series of outcomes outlined by LtL.

The overlapping quantitative and qualitative data gathered as part of this evaluation sets out high-level trends in young people's outcomes during the course of the project, as well as detailed insights into how these changes took place in individual schools. The absence of a control group means that it is not possible to prove that Polli:Gen caused these changes, but our case study data sheds light on the mechanisms that produced them.

Overall, the project evaluation reveals positive findings regarding several aspects of the project. In other areas, results were more mixed, with the positive findings from the qualitative fieldwork not reflected in quantitative survey analysis.

Demographic data suggests that Polli:Gen reached a diverse range of children, in terms of pupil premium status, special educational needs and disabilities (SEND) and ethnic background.

The evaluation finds several positive findings in terms of Polli:Gen's impact. In particular, children who took part in the project:

- **Gained new knowledge:** Across all three topic areas, children's knowledge increased significantly. This was true for all groups of children, including those eligible for pupil premium and those with an identified SEND. Case studies suggested many participants enjoyed sharing their knowledge with classmates, school staff, friends and family.
- **Felt more empowered to make changes in their school grounds:** Survey results show that children felt better able to enact physical changes that help pollinators and other wildlife in their school grounds. In addition, case study data suggests that children felt greater ownership of their school grounds and a sense of pride, both of which motivated them to make (and maintain) positive changes to them.
- **Felt that the condition of heritage had been improved in their school grounds and community spaces:** Survey results show a slight improvement in children's perceptions of whether there were good homes for pollinators on their school grounds, from a high baseline score. Case study data suggests significant improvements when it came to school grounds, with more modest improvements in terms of community group spaces.
- **Changed their behaviour:** Case study data suggests that the project led to children changing their behaviour both towards pollinators and to nature more broadly, and that this extended towards their home and other outdoor spaces beyond their school. There were fewer examples of Polli:Gen leading to changes in the wider community.
- **Showed ambitions to make longer-term changes to their behaviour:** Across several case study schools, children expressed a desire to make long-term behaviour changes, following the project. In some instances, children had also persuaded friends, family and others to make positive behaviour changes too.
- **Felt more engaged with issues about their local environment and natural heritage:** Survey data shows that more children felt that their actions were connected to changes to the natural environment at their school. Moreover, case studies revealed that children were able to apply knowledge acquired through Polli:Gen to engage with their local environment and natural heritage.

Progress against other outcomes was more mixed:

- **There was limited evidence of behaviour change among members of the community:** While case study data suggests that the project led to children changing their behaviour both towards pollinators and to nature more broadly, there were fewer examples of Polli:Gen leading to behaviour changes in the wider community.
- **Findings gave a mixed assessment of Polli:Gen's impact on children's connectedness to nature:** Survey data derived from the Connectedness to Nature (CTN) scale suggests that children did not progress against this outcome through the project, although qualitative case study data from project officers, teachers and children themselves was more positive.
- **Rates of physical activity declined slightly over the course of Polli:Gen:** Survey data shows that self-reported rates of physical activity fell between baseline and endpoint surveys. It is likely that these figures were influenced by other factors, such as COVID-19 disruption and colder weather as the term progressed.
- **Outcomes in terms of social wellbeing were mixed:** The quantitative survey data indicated no change in young people's Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) scores, with falls in life satisfaction and happiness regarding the school they attend. Some case study data insights suggest that Polli:Gen may have made a positive contribution to some children's social wellbeing but staff were cautious in their assertions, particularly as the project took place over a short period of time.
- **It was difficult to determine whether members of the wider community, including families and community groups, had greater wellbeing as a result of Polli:Gen:** This outcome was not measured directly in the survey and was difficult to gather from case studies, particularly given that schools had often found it hard to secure strong community ties.

Overall, we found that Polli:Gen was a well-planned, well-delivered project which succeeded in engaging a diverse range of children from across a significant proportion of schools in Leicester.

Participating children enjoyed taking part and were excited and enthused by the changes they were able to make for pollinators in their school grounds.

Children relished the freedom and responsibility they were given to improve their school grounds, and this translated into measurable impact on their sense of agency in this regard.

We also found measurable change in children's knowledge about pollinators and their engagement and views about their local natural heritage and the future of the environment.

Children finished the project feeling more hopeful and positive about the natural world than when they began it, and were able to see how their actions could produce benefits for the pollinators in their local spaces.

7

Appendix 1: Outcomes and associated measures

Outcome	Measure	Source
1: A wider group of children, families, and their local communities are learning about pollinators in school grounds and community spaces.	Survey: Children's SEND status, pupil premium status and ethnicity. Additional case study insight.	Project data.
2: Children have improved knowledge relating to pollinators and their importance.	Knowledge questions, based on LtL's Polli:Gen curriculum.	
3: Children feel empowered to enact physical changes that help pollinators and other wildlife in their school grounds.	Survey, creating new measure(s). Additional case study insight.	
4: The condition of heritage has been improved in school grounds and community group spaces.	Survey, creating new measures. Case study insight, photos, work produced and other material.	
5: Children and the wider community have changed their behaviour.	Case study insight, photos, work produced and other material.	
6: Children intend to make long-term changes to their behaviour.	Case study insight, photos, work produced and other material.	
7: Children feel more engaged with issues about their local environment and natural heritage.	Survey, creating new measure(s). Case study insight, photos, work produced and other material.	
8: Children feel more connected with nature.	Connectedness To Nature Scale, adapted (CNS).	Adapted from **https://cdn.naaee.org/sites/default/files/assessing_connection_to_nature.7.23.20.pdf**
9. Children have improved levels of physical activity.	"In the last seven days, how often have you been active?"	New measure
10. Children have improved social wellbeing.	Short Edinburgh Warwick Mental Wellbeing Scale (SWEMBWBS).	**https://www.corc.uk.net/outcome-experience-measures/short-warwick-edinburgh-mental-wellbeing-scale/**
11. Members of the wider community, including families and community groups, have greater wellbeing.	Case study insight.	

Learning through Landscapes

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