

### The CitySprouts Model

CitySprouts partners with public schools to integrate garden-based learning in schools' curriculum and culture. Our School Partnership Program and the Middle School Program combined provide children and youth with comprehensive year-round programming.

The purpose of our School Partnership Program is to expand children's access to garden-based learning, with high quality support to teachers and their schools so that children's potential for learning is maximized and sustained throughout a child's elementary and middle school journey. From September to June, we give targeted support to teachers to help them create inquiry-based learning for their students in the garden and meaningful follow-on in the classroom. Our garden educators provide 10 hours of support to our partner schools each week throughout the school year: meeting with teachers in grade-level staff meetings as well as individually to assist them in developing and implementing garden-based extensions to teachers' science, English language arts and other curricula. With the garden educators' support, teachers are more able to facilitate their students' deeper engagement in the garden through season-long projects.

Our theory of change is that children from all walks of life will have stronger language skills, science skills & knowledge and social emotional skills if they are provided with ongoing opportunities to investigate and explore the natural systems of the garden as part of their public school education. Our assumptions are based on research that shows that children develop science skill and knowledge over time, and that experiential, hands-on learning helps children build the foundation of science skills and knowledge they will need for future success.<sup>1</sup> Studies also show that opportunities to explore nature in children's early years makes a positive difference in healthy social emotional development.<sup>2</sup>

For these reasons, CitySprouts tracks the frequency with which teachers are bringing their students to their school learning garden as a marker for how much garden access children have during the school day. We combine this data with teachers' observations on the impact of the garden on their students' science skills, on social emotional capabilities, and for English Language Learners and students on special education plans. Our aim is to make the learning garden a place for genuine inquiry for all kinds of learners— a place to see science concepts in practice, to apply math skills to solve a problem, to engineer a solution to a challenge and to practice and refine communication skills.

CitySprouts is committed to sharing its best-practices and learning from its peers in the field. We are an active member of professional networks at the local, regional and national level. This past year, CitySprouts staff collectively presented at eight professional conferences or gatherings. We presented at two national conferences in 2018: National Children and Youth Garden Symposium in Ithaca, NY; and the Farm to Cafeteria Conference in Cincinnati, OH. We hosted a site visit as part of the 2017 Community Food Systems Conference. Closer to home, CitySprouts staff participated in the Wheelock College Curiosity & Learning conference, and presented at the following conferences: Massachusetts Environmental Educators Society (MEES), Urban Farm Institute, and the Massachusetts Horticultural Society annual school garden conference. Executive director Jane Hirschi gave the keynote at the annual Massachusetts Garden Association meeting in May 2018.

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<sup>1</sup> National Science Teachers Association (2014). NSTA position statement: Early childhood science education.

<sup>2</sup> Miranda, N., Larrea, I., Muela, A., Barandiaran, A., (2017). Preschool children's social play and involvement in the outdoor environment. Early Education and Development, 28(5), 525-540.

### New Early Education in the Garden Initiative

Since the CitySprouts program began in the early 2000, the majority of teachers utilizing the garden (70% or more) have been early grade teachers. This past year, CitySprouts embarked on a new initiative to strengthen teachers' comfort and competence in early grade science instruction, and to improve CitySprouts educators' skill in supporting early education teachers and their students in the garden. The program is based on a year-long series of site-based professional development workshops for participating schools' early education staff. We anticipate that this is the start of a multi-year initiative that will ensure more young children start off with a strong and engaging science experience by building teachers' knowledge about and confidence in science teaching in the school garden. Beginning in school year 2018-19, Sun Associates will conduct an outside evaluation of the project.

From a teacher in this year's pilot: *"I really enjoyed the series. I feel it made me, someone who doesn't feel quite competent in science, very comfortable with teaching science. The instructor was very knowledgeable and very welcoming and able to work with people from all types of backgrounds and knowledge levels."*

### Our District Partners

We partnered with every elementary and middle school in Cambridge Public Schools (CPS), and 11 schools in Boston Public School District (BPS)<sup>3</sup> for a combined total of 10,830 students<sup>4</sup> in our 23 partner schools. CitySprouts worked with a total of 352 teachers this past year (for a total number 2,360 discrete garden or classroom educational activities).

In November 2017, CitySprouts was one of sixty community organizations to meet the rigorous standards for inclusion in the inaugural **Boston Public Schools Opportunity Portfolio** overseen by the BPS Office of School and Community Partnerships. All Portfolio partners are listed on [partnerbps.org](http://partnerbps.org) and promoted to BPS principals as high quality programs that align with district goals. This spring, BPS also released a new model for distributing partnership funds to its schools. The Index Fund effectively redistributes BPS funding to schools with higher numbers of children in need. We fully support the intention of this new funding distribution model even though it has had mixed results for our current school partners: we have gained a partner because of the Index Funds and lost at least one partner who no longer has access to the same level of district funding. We anticipate at least one more year of change before our BPS school cohort stabilizes again.

### Evaluation

We are confident that teachers are uniquely suited to report on how the garden impacts their students' learning and well-being, and in what ways the CitySprouts program supports good teaching. We capture data through weekly records of our garden educators' teacher interactions and in an annual survey of the teachers in our partner schools. The combined data from these two sources track children's access to the learning garden during school time and indicates how the garden and our program influence children's learning, especially science learning. It also reflects how the garden experience impacts children's health, specifically children's interest in fruits and vegetables and the the school's social-emotional learning environment.

We are very pleased to announce that we now have a new custom database tool that allows CitySprouts to compare the frequency of teachers' garden visits to their effectiveness in meeting student learning goals. In early 2018,

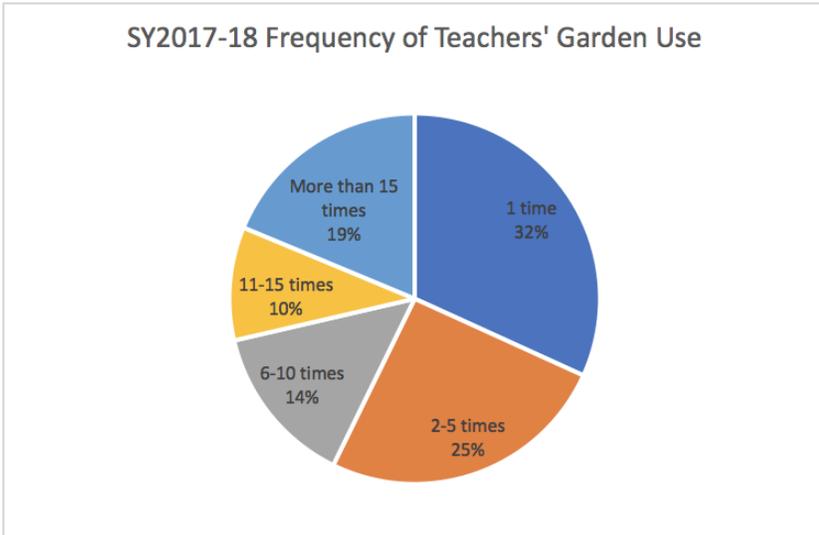
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<sup>3</sup> Boston Public Schools: Baldwin Early Learning Pilot Academy, Henderson Inclusion School Upper Campus and Lower Campus, Higginson-Lewis K-8, David Ellis Elementary, Holmes Elementary, McKay K-8, Orchard Gardens Pilot School, West Zone Early Learning Center, Winship Elementary and Winthrop Elementary.

<sup>4</sup> From Massachusetts Dept of Secondary & Elementary Education School Profiles 2017-18

CitySprouts engaged **Common Impact**, a not-for-profit that coordinates professional services from businesses to other non-profit organizations. From February to June, Common Impact coordinated a project between CitySprouts and a team of employees from **Fidelity Investments FPCMS** (Fidelity Pricing and Cash Management Services) based in Merrimack, NH. The Fidelity team worked closely with us over several months to create several reporting tools that compare the results of thousands of teachers' surveys from previous years, and across both districts. We look forward to further integrating these custom tools in our future data analysis.

**Findings**



*Because of CitySprouts, thousands of children have access to garden-based learning during the school day.* A total of 352 teachers used their school garden one or more times this year (not including teachers' report of independent use). The number of teachers using the garden 15 times or more throughout the year increased 10 percentage points from last year.

*"Students often sat in the garden with their 5th grade reading partners reading and talking."* CPS Kindergarten

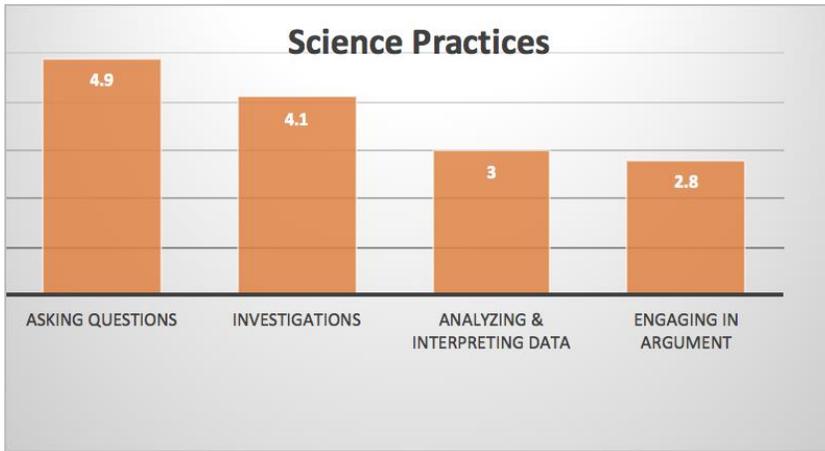
*"We all just became more perceptive of the plants in our daily lives."* BPS Grade 2



***CitySprouts helps children learn.***

Teachers rate the impact of the garden in five areas: opportunities for meaningful hands-on learning, increasing their curiosity about the natural environment, increasing their comfort being outside, and making the curriculum more accessible to English Language (EL) learners and to special education students. The scale is 1-5, with 5 being "strongly agree."

*"I've seen my SPED students come out of their shells in the garden in ways I'd never seen before... hands on activities!"* BPS Grade 4



*had on plants.” BPS Grade 1*

**CitySprouts improves children’s science skills.** We track the impact of the garden experience in four of the eight Next Generation Science practices: asking questions, planning & carrying out investigations, analyzing & interpreting data, and engaging in argument from evidence. Teachers across both districts consistently report “asking deeper questions” and “more confidence in planning & carrying out investigations” are the most influenced criteria.

*“It was such a great experience for my students to be able to get outside. They saw the effect that weather and climate*



*regulation skills as students grew to be flexible thinkers and interpreters of the world.” CPS Grade 1*

**CitySprouts makes a positive difference in children’s health and well-being.** We define health as both physical and emotional well-being. Teachers report that the garden experience positively impacts students’ interest in fresh fruits and vegetables, and also key social-emotional competencies.

*“[The garden] made them more open to trying new things (not just foods).” CPS Jr. Kindergarten*

*“[The garden] also supported self*