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More Kids in the Woods: Morris Arboretum as Outdoor Laboratory

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An independent study project report by The McLean Contributionship Endowed Education Intern (2012-2013)

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Abstract

The Morris Arboretum, a 92-acre historic public garden and educational institution, seeks to enhance people's awareness of their interdependence with plants. To support this mission, the Arboretum formed a partnership with the USDA Forest Service and developed the framework for More Kids in the Woods (MKIW) – a two-year pilot and grant-funded program intended to serve underrepresented youth in the Philadelphia region. As Education Intern, I have had the privilege to help support the first stages of the grant. In this report, I summarize the challenges, programming, and goals of MKIW. Additionally, I briefly reference the developmental stages of children's relationship to nature – as well as discuss the theory of “nature” – to provide context and acknowledge the unequal access to nature across cultures and socio-economic classes. The intended audience is anyone interested in fostering an environmental consciousness in youth and/or implementing a federal grant to achieve this purpose. It is my hope that certain initiatives will become established through the implementation of MKIW, such as an annual outdoor career symposium for high school students. Through the cumulative efforts of all department heads and financial supporters, the Morris Arboretum can begin to pave the way for educational programming that is socially, culturally, and economically inclusive.

Disciplines

Outdoor Education

Comments

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Author: Sarah Bolivar
The McLean Contributionship Endowed Education Intern

Date: March, 2013

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The Morris Arboretum, a 92-acre historic public garden and educational institution, seeks to enhance people’s awareness of their interdependence with plants. To support this mission, the Arboretum formed a partnership with the USDA Forest Service and developed the framework for More Kids in the Woods (MKIW) – a two-year pilot and grant-funded program intended to serve underrepresented youth in the Philadelphia region. As Education Intern, I have had the privilege to help support the first stages of the grant. In this report, I summarize the challenges, programming, and goals of MKIW. Additionally, I briefly reference the developmental stages of children’s relationship to nature – as well as discuss the theory of “nature” – to provide context and acknowledge the unequal access to nature across cultures and socio-economic classes. The intended audience is anyone interested in fostering an environmental consciousness in youth and/or implementing a federal grant to achieve this purpose. It is my hope that certain initiatives will become established through the implementation of MKIW, such as an annual outdoor career symposium for high school students. Through the cumulative efforts of all department heads and financial supporters, the Morris Arboretum can begin to pave the way for educational programming that is socially, culturally, and economically inclusive.

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More Kids in the Woods Structure

In the fall of 2012, The Morris Arboretum received federal funding to implement More Kids in the Woods (MKIW), a two-year pilot program that provides resources to Title I schools in the Philadelphia region, in conjunction with the USDA Forest Service.¹ The grant is intended to serve underrepresented and underserved youth that might otherwise not have access to large-scale, open spaces.² By increasing access to the Morris Arboretum, students will be able to integrate their curriculum into the physical environment and vice-versa. These experiential interactions will allow students to utilize the Arboretum as an “outdoor laboratory” – a space where students can observe red-tailed hawks flying overhead, explore the dawn redwoods, and enhance their understanding of local and regional ecosystems. In this paper, I will discuss the challenges, programming, and goals of More Kids in the Woods within the context of Morris Arboretum educational programming initiatives.

Though the Morris Arboretum has an institutional mission to serve underprivileged youth through Partners in Education, the MKIW is a formal agreement among Morris Arboretum, the USDA Forest Service, and three schools: W.B. Saul High School of Agricultural Sciences, Mercy Vocational High School, and Wissahickon Charter School. The grant applicants were Liza Hawley, Visitor Education Coordinator, and Bob Gutowski, Director of Public Programs. This application was a competitive process, but the Morris Arboretum has had a successful record with the USDA Forest Service, and the two have collaborated on urban forestry projects in the past. Throughout this process, USDA Forest Service Field Station Coordinator, Sarah Low, has worked closely with Arboretum staff and educational partners. At the two-year benchmark, the Forest Service and Arboretum staff will make their findings publicly available.

“Nature” versus “nature”

To encourage a frank discussion regarding the relationship between children and the environment, I will first address a term that is not inherently fixed in meaning and which asks us to reflect on what we deem to be “natural.” Nature, or rather how we perceive nature, has inevitably changed throughout the last century. No longer can we preserve a view of “pristine wilderness” as the apogee of nature. Rather, we can acknowledge the beauty and function of ecosystems within highly built environments to embody our social construct of nature. The definition can be infinitely expanded upon, but the point I want to emphasize is that though “nature” and “natural” are interlinked conceptually and etymologically, we must not forget that urban environments, which 70% of the world population is expected to inhabit by 2050, fit within this framework as well.³ Addressing this issue – helping students understand they can

¹ “USDA Forest Service Makes \$1 Million Commitment to Get Kids Outdoors.” US Forest Service. Web. 03/2013. <<http://www.fs.fed.us/news/2012/releases/03/kids.shtml>>.

² “Open Space Conservation.” United States Department of Agriculture Forest Service. Web. 03/2013. <<http://www.fs.fed.us/openspace/>>.

³ “Human Population: Urbanization.” Population Reference Bureau. Web. 03/2013. <<http://www.prb.org/Educators/TeachersGuides/HumanPopulation/Urbanization.aspx>>.

apply what they learn at the Arboretum to their own built environments – will help empower students to be proud of their communities and enable them to promote environmental conservation practices at local, regional, and global scales.

Writer Neil Evernden distinguishes between “‘nature’ when referring to the great amorphous mass of otherness that encloaks the planet” and “‘Nature’ when referring specifically to the system or model of nature which arose in the West several centuries ago.”⁴ The latter embodies a mostly non-human cultural ideology, but this is not accurate as human beings have inhabited land throughout millennia. A corollary to this discussion is the question of access to nature. Historically, aesthetic appreciation of nature has been restricted to white middle and upper classes while citizens in lower-income brackets and/or people of color have been susceptible to subtle forms of exclusion.^{5,6} In a rapidly changing social landscape, where Philadelphia’s projected population growth will largely stem from non-white residents,⁷ collecting, analyzing, and sharing data about these demographic trends will become a prominent issue for arboreta and public gardens.

Through the MKIW grant and Partners in Education, the Morris Arboretum has formally begun to recognize and address disparity across the socio-economic spectrum. To further shed light on the populations we serve, it would be beneficial for the Arboretum to undergo an in-depth analysis of the needs and demographics of the visiting youth population; lead and participate in civic dialogues regarding public garden’s growing social roles; and invest in an internal task force charged with attracting diverse populations to the Arboretum.

Children’s Values of Nature and Programmatic Context

To help contextualize the Arboretum’s varied educational programming, it is useful to examine children’s values of nature across their developmental stages.⁸ Studies suggest that the first developmental stage occurs between three and six years of age, during which children crave security. Thus, they generally appreciate familiar surroundings but can exhibit indifference or anxiety in the presence of unfamiliar environmental stimuli.⁹ Through our partnership with Wissahickon Charter School, we have been able to schedule visits with 136 pre-k and kindergarten students. Generally, the students went on self-guided or Seasons and Cycles tours.

The middle school age, when the child is six to twelve years old, is a critical and formative period as children’s regard of nature changes from a sense of wonder to a sense of exploration. During this time, “humanistic, symbolic, aesthetic, and knowledge components of

⁴ Adamson, Joni, Evens, Mei Mei, and Stein, Rachel. Eds. *The Environmental Justice Reader: Politics, Poetics, and Pedagogy*. (Arizona: The University of Arizona Press, 2002), 182.

⁵ Adamson, Evans, and Stein. Eds., 151.

⁶ “Demographic Transformation and the Future of Museums.” The American Association of Museums. 2010. Web 03/2013. <<http://www.aam-us.org/docs/center-for-the-future-of-museums/demotransaam2010.pdf?sfvrsn=0>>.

⁷ “Demographic Trends and Forecasts in the Philadelphia Region Key Findings.”

⁸ Kahn, Peter H., and Kellert, Stephen. *Children and Nature*. Eds. (Cambridge: The MIT Press, 2002), 132.

⁹ Kahn and Kellert. Eds., 132.

the scientific value develop most rapidly, while utilitarian, negativistic, and dominionistic perspectives diminish in importance.”¹⁰ This information, if accurate for all children, is important since the More MKIW program has yet to inspire firm commitment from 6th and 7th grade classes to visit on a consistent basis, funding availability notwithstanding.

Despite a gap in reaching 6th and 7th grade, we have been able to cumulatively host 239 pre-k - 6th grade students during the first six-month period of the grant. Additionally, in October, Morris Arboretum interns were able to develop and teach environmental-related lessons, such as forest succession, to nine Wissahickon Charter School classes between 1st and 6th grades. All the interns provided positive feedback, though they wished there had been a sequential opportunity to link the interns’ work with their lesson at the Arboretum. [This comment is being taken into consideration and will potentially become a reality in the second six-month period of the grant].

Though the Pennsylvania School for the Deaf is not a formal MKIW partner, we have provided learning opportunities with the USDA Forest Service to 6th and 7th graders. For example, Sarah Low has led a small group around the Wetland on a bi-monthly basis to help them observe seasonal changes, learn more about wetland benefits, and study ecosystem dynamics. Students have expressed their enthusiasm for these sessions and it has personally been a rewarding experience to work with the deaf and hard of hearing population.

The final stage in children’s development occurs between 13 and 17 years of age. This is a time during which children can understand more “abstract, conceptual, and ethical reasoning about the natural world.”¹¹ The majority of our work with this age group takes place in form of specialized educational programming. In the next section, I describe these various partnerships and programs.

Cultivating Partnerships and Learning Process

Rachel Carson poignantly remarked, “For the child . . . it is not half so important to *know* as to *feel*. If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are fertile soil in which the seeds must grow.”¹² In my role as Education Intern, I have had the good fortune to see first-hand the impact of the Arboretum’s environment on visiting students. To share an anecdote, Mercy Vocational High School, a MKIW partner, brought a group of sophomores and juniors to conduct a writing exercise in the midst of the dawn redwoods. Though the students were gregarious in the beginning – as adolescents are apt to be – they began to quiet down and focus intensely on their task at hand. It was incredible to behold the students contemplating the next mark on their pages. Similarly, I have seen children’s eyes open wide at the sight of wildlife or pour over their surroundings. This *feeling* is exactly what we are striving for and what is relatively easily achieved when the students get to the Arboretum. Truly, the main challenges preventing students from visiting the Arboretum are lack of school funding for buses or substitute teachers, teachers’ preoccupation

¹⁰ Kahn and Kellert. Eds., 132.

¹¹ Kahn and Kellert. Eds., 135.

¹² Carson, Rachel. *The Sense of Wonder*. (New York: Harper and Row, 1965).

with whether tour content aligns with state standards, and a school structure that impinges upon the teachers' sense of flexibility and creativity.¹³

Through More Kids in the Woods, we have been able to break down barriers, such as access to transportation. Since each school bus generally costs \$250, teachers are grateful that we can help ease this financial burden. During the first six months, Wissahickon Charter School's pre-k and kindergarten classes visited on almost a monthly basis until we realized the MKIW grant would not be able to cover future bus expenses. This was a difficult but much-needed realization. Since then, we have begun to strategize how we can have as many age groups as possible visit the Arboretum without exhausting our transportation budget. In addition to providing transportation, we also strive to show teachers that they can apply almost any lesson plan within the Arboretum. Moreover, all our tours already meet standards of learning objectives. These barriers are all much easier to address if our partners are committed to bringing their classes on a consistent basis.

W.B. Saul High School of Agricultural Sciences is a school we have had a strong partnership with for several years. Two teachers, Barbara Brown and Jessica Naugle McAtamney, have brought their horticulture and landscape design classes to the Arboretum on a monthly basis. During these repeated field experiences, students learn about a staff member's career. Such experiences enhance students' understanding of the various career paths within the horticulture field.

We hope to have as strong a partnership with Mercy Vocational High School. Though the English class visited in early fall, other classes had not scheduled visits for fall or spring. To help teachers better understand the benefits of MKIW, we invited teachers to visit the Arboretum as part of their in-service professional development. On January 28, eleven teachers and administrative staff visited and met with Lucy Dinsmore, the Rose Garden Horticulturist, and Dianne Smith, Greenhouse and Fernery Volunteer. After this in-service event, we were able to schedule spring tours with a variety of classes. For example, different classes are scheduled to practice yoga at Bloomfield Farm, meet with Bob Gutowski to learn about non-profit management, as well as cook with our caterer.

Strong partnerships have been integral to helping us achieve our goals. If there were no partnership with the Forest Service, we would have less leverage with our school partners' support of repeated field experiences. We cannot disregard the strength of cultivating partnerships with organizations such as the Forest Service. Another factor aiding our success has been working with teachers who are both passionate and committed to providing their students with varied experiences at the Morris Arboretum. Though it is intuitive to say that arboreta should seek out partnerships, it is also equally vital to acknowledge that partnering institutions need a point person to spearhead and build momentum for collaborative efforts. Underpinning this success is also the strength of the Partners in Education Committee, comprised of staff and the Morris Arboretum Guides, which has shown unparalleled devotion to sharing its knowledge of the Arboretum.

¹³ Nagel, David. *Education System Stifles Creativity, System Finds*. The Journal. 04/2012. Web. 03/2013. <<http://thejournal.com/articles/2012/04/23/education-system-stifles-creativity-survey-finds.aspx>>.

Our successes have not transpired without their challenges. As I mentioned earlier, teachers lack funding to bring students to the Arboretum and are potentially unfamiliar with our tour content. Though the MKIW grant provides funding, we are only able to provide transportation subsidies to a limited number of students. To address this shortfall in funding, the Arboretum must have an internal dialogue for how it can best raise funds to cover expenses when the MKIW grant ends next year. A financially solvent model is required, but it also cannot compromise the functioning of other Arboretum programs. To address unfamiliarity with tour programming, a revamping of online content might be beneficial. We are in the process of developing a webpage that will highlight Partners in Education, a larger Morris Arboretum initiative, and MKIW as a sub-set of youth education. We hope that creating the Partners in Education page will clarify and reinforce our mission to serve the youth population.

One of the primary challenges and learning experiences has been evaluating the children's understanding of educational content. Below are some of the most pervasive challenges in regards to evaluations:

1. Education Intern has little knowledge of content evaluation practices
2. Education partners and staff have different schedules and deadlines
3. Training or guidelines for grant evaluation is not established
4. There is little time for evaluations during tours

During this process, I learned that evaluations are most successful after discussing the structure and medium with partners. For example, I learned that online evaluations work best with Saul High School and Mercy Vocational High School because students have direct access to the internet. Wissahickon Charter School, on the other hand, prefers paper evaluations because teachers have little time to reserve the computers and ask students to complete evaluations. Also, evaluations are most successful when the person most knowledgeable about the content produces and evaluates them. Despite our challenges, we are enthusiastic about the future of MKIW.

Moving Forward

Moving forward, we plan to build on two initiatives with the MKIW program. One of them is the Learning-By-Doing Tree Inventory Project, in which students conduct a tree inventory of the Saul campus through line transect sampling. Essentially, students pace out a given distance to their plots along a transect and obtain a sample of the tree population. This project will encompass skills such as basic geometry, utilizing compasses and other tools, as well as data analysis. A short-term goal is to replicate this project the following year. In the long-term, students will feel comfortable enough with these exercises that they can help conduct tree inventories within their own communities.

Another initiative is the Outdoor Career Symposium, an event during which professionals from the Philadelphia region will participate in panel discussions and lead hands-on workshops

to share career and post-secondary advice with high school students. This event will enable students to explore a variety of career paths they might have not otherwise considered. Though there are comprehensive programs promoting environmental outdoor education across the nation, there are hardly any outdoor or environmental career symposium models. Through this symposium, the Morris Arboretum will potentially create a unique public garden niche.

There have long been talks about creating a high school internship program; though this is not a goal of MKIW, our strong partnership with high schools give us the ability to work with a pool of intelligent and environmentally-conscious youth. Potentially, the Arboretum can work with the University of Pennsylvania to make this a reality through the Penn Summer High School Program.¹⁴ As with any partnership, however, all parties need to be invested in the success and longevity of such programs.

Insights

Working on the MKIW grant has been particularly fulfilling because I enjoy working with community partners and helping youth obtain greater environmental awareness. Moreover, it's important for me to feel that I am contributing to the success of the larger community and challenging others' preconceived notions about youth from highly dense and urban environments. This experience will be beneficial as I enter the field of landscape architecture, where I will potentially apply for grants, as well as continue working with communities to address challenges through creative means. The internship experience overall has been valuable and I've learned a great deal about horticulture and the non-profit structure, which I hope to build on in the future.

Acknowledgements

I would like to thank Liza Hawley, Lisa Bailey, the Partners in Education team, Morris Arboretum Staff, the USDA Forest Service, Parks and Recreation, and our educational partners for making this a very rewarding project to work on throughout the year.

¹⁴ *Penn Summer Academies*. 03/2013. <<http://www.sas.upenn.edu/summer/programs/highschool/academies>>.

Appendices

(Appendix 1)

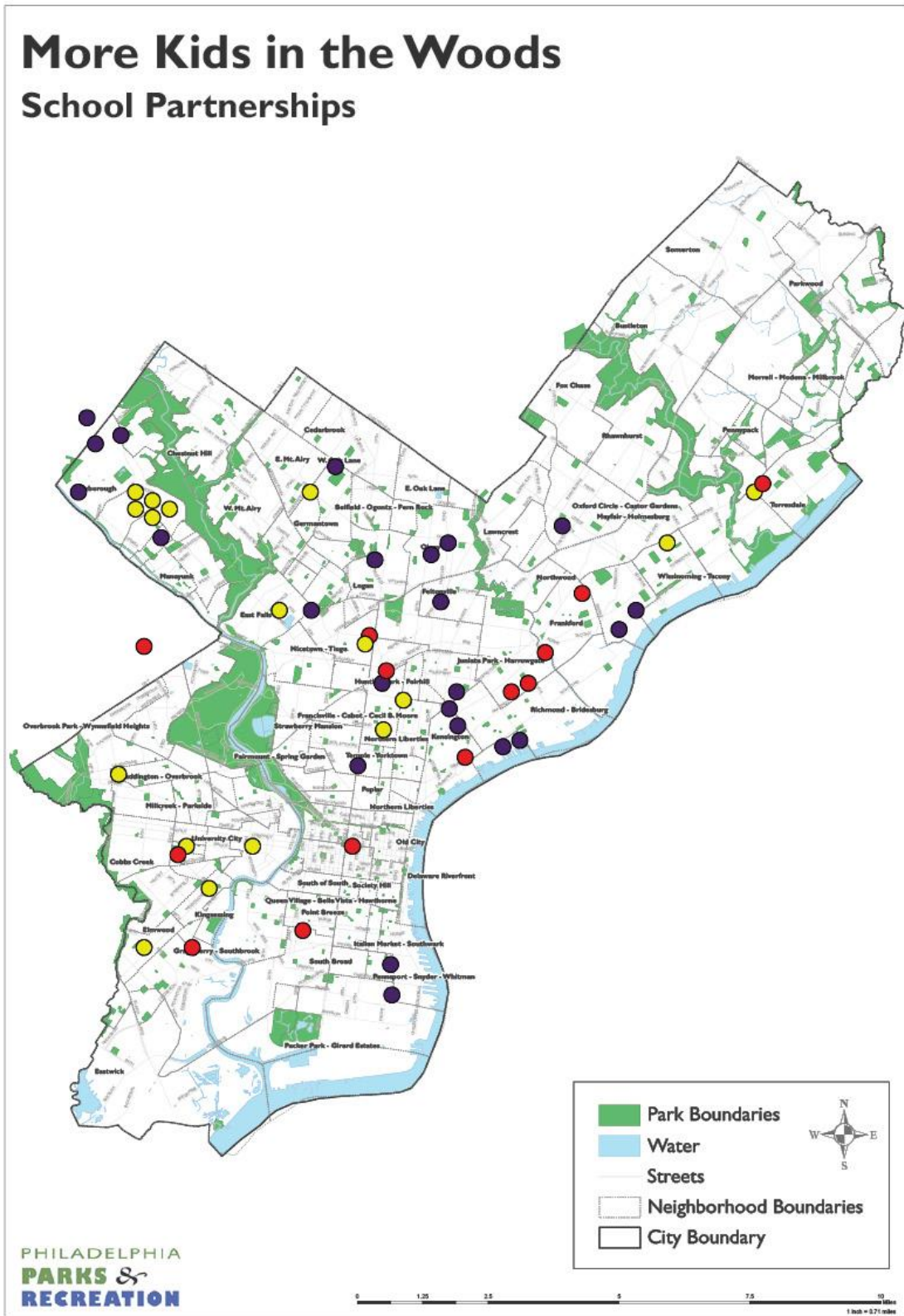
The following map, produced by Regina Stine, Parks and Recreation GIS Intern, illustrates samples of student populations from our Partners in Education schools. Students were asked to look at a map of Philadelphia's neighborhoods and place a pin on where their house is located. The map is an attempt to collect more data about the youth we serve. Part of the goal is to obtain a greater sample population and then analyze public park distribution within each neighborhood to see whether students live within a .5 mile radius of these parks. Oftentimes, educational researchers examine canopy coverage as an indicator of "access to nature," but fail to examine where students' homes are located in relation to this public park. This data, if complemented with reflections from students, could help the Morris Arboretum better understand how students perceive nature and how the Arboretum can best serve the students' needs.

Yellow Circles: W.B. Saul High School of Agricultural Sciences

Red Circles: Mercy Vocational High School

Purples Circles: Pennsylvania School for the Deaf

(Appendix 1)



(Appendix 2)

It was difficult to obtain neighborhood information for Wissahickon Charter School classes, but we did obtain the top ten zip codes of where the student population lives. This map was one of the earlier iterations.

More Kids in the Woods

Student Neighborhoods

Wissahickon Charter School

