



PROJECT SPOTLIGHT BY:

**Susannah Laramée Kidd, PhD**



Mural Arts Department  
**Art Education**

Artist  
**Benjamin Volta**

Assistants  
**Monay Washington, Russell Craig, Andrew Grasso, Jesse Krimes, Jason Mattis, and James Schuster**

Project Manager  
**Lisa Murch**

Program Manager  
**Jocelyn Nelson**

Location  
**Morton McMichael Public School, 3543 Fairmount Ave, Philadelphia, PA 19104**

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## Micro to Macro

How does Mural Arts collaborate with students, schools, and the surrounding communities? “Micro to Macro” serves as a strong example that dramatically transformed a school building. Dedicated in October 2014, the mural serves as the final product of a yearlong partnership between Mural Arts and the Morton McMichael Public School in the Mantua section of Philadelphia. Artist Benjamin Volta worked closely with the school’s 7th grade science and math teachers. They developed programming that integrated art into each class’ existing math and science curriculum. Additional afterschool programming with interested middle school students allowed Volta to assemble a group of students to design, paint, and drive the final mural project. By working both in and out of school, Volta was able to reach an average of 50 student participants per week.

Volta and the McMichael students were inspired by Charles and Ray Eames’ film, “Powers of Ten,” which depicts the entire universe in a scale of factors of ten. The mural features a map of the world that on one side morphs into trees. The trees branch out to images of neurons. It then zooms in on DNA, atoms, and finally particles. On the opposite side, the map scales out and provides images of the earth and the larger universe. The mural

wraps two sides of the school building and continues into the interior entryway. Each aspect of the mural incorporates drawings directly from, or inspired by, the student participants. Members of the Restorative Justice Guild helped to install the mural. Community members and PECO employees also helped to paint the mural during paint days.

Below, we share the story of how the mural came together, with the lens of illustrating one of Mural Arts' approaches to engaging young people in creating artworks in school and out-of-school programming. We draw out lessons learned and impacts and describe arts-integrated learning in action.

## Who Worked Together to Make a Mural with a Big Impact

“Micro to Macro” brought together a mix of collaborators, partners, and participants with the ideal backgrounds, experiences, and passions. The magic of working together led the team to widen the vision for the mural halfway through the project. Mural Arts started out with a budget of \$50,000 for the project but found additional funding to increase the budget to \$168,000 to cover the significant increase in labor and materials needed to wrap two whole sides of the school. Others looking to do something similar should note that this figure does not include the portion of the project manager's salary devoted to making this project happen and Mural Arts' administrative costs.

**The artist:** Benjamin Volta honed his collaborative design process through extensive experience. He often integrates art with math, science, and reading in his approach. He spent seven years working with students at Grover Washington Jr. Middle School, in addition to other school-based residencies and projects with school-aged children. With Mural Arts, he had developed several other mural projects, including “Written in Wood” with the Mural Arts Restorative Justice Guild in 2012. He was excited to merge his arts-integrated approach with Mural Arts' track record of transforming school buildings.

**Students:** Students served as collaborators for this mural. They co-determined the direction for the mural design each step of the way. Throughout the project, Volta worked with approximately 50 7th graders per week in the context of their math and science classes and after school. Individual students' drawings are featured in the final mural and the after-school group made design decisions with Volta. The team held an in-school paint day for 3rd through 8th grade students. For a paint day, the mural design is printed on panels of mural cloth and coded using a paint by number system. This way, practically every student in the school touched the mural at some point in the process.

**School community:** Brian Wallace, McMichael's principal, championed the mural process. He shared the school theme “McMichael Goes GREEN” and the school's goals around STEM education. The 7th grade math teacher Emitta Woods and science teacher MaryLynn Cos were also key collaborators. They helped to sync design activities with topics in their curricula. They suggested concepts or skills that the students might be struggling with to particularly feature in the design process.

**Assistants and crew:** Monay Washington, who started her relationship with Mural Arts as a student in the arts education program, served as a teaching assistant to Volta. Washington collaborated with Volta to engage students; she built her own connections to them. When it came time to paint and install the mural, Mural Arts hired Russell Craig, Andrew Grasso, Jesse Krimes, Jason Mattis, and James Schuster as assistants. Some of these men were alumni of the Restorative Justice Guild who were ready for bigger projects. They were able to oversee the work of the current Guild



members who helped paint and install the mural. The team also sent about 60 panels for the mural class at Graterford Prison to paint.

**Mural Arts staff:** As part of the Arts Education program, program managers oversee the work of teaching artists, whereas project managers coordinate all of the logistics of mural installation, such as getting paint and materials to the site. Project managers normally handle the budget. For this project, project manager Lisa Murch found funds midway through in order to implement the full vision for the mural. Mural Arts also conducts a design review process for every mural project. For a school-based project, there are additional administrative tasks, such as getting the design approved by the School District's Capital Improvements Committee and signing a right of entry agreement in order to install artwork on school property.

**Site neighbors and stakeholders:** Project manager Lisa Murch led the process of connecting with neighborhood leaders from the Mantua Civic Association, the Mantua Community Improvement Committee, and the Mantua Community

Association Education Subcommittee. For this mural, engaging with these groups was less about collecting their contributions to the design and more about explaining that the young people's visions would drive the design. Community members saw the design in process, got to paint some panels, and approved the vision for the mural. When the design was complete, Mural Arts canvassed the blocks around the school building to collect signatures approving the mural's installation. Overall, neighborhood stakeholders were pleased that the young people in their community would get to work on such a large-scale project.

**Funders:** Significant funding for this project came from the PECO Energy Company, The Lindy Family Charitable Foundation, and the City of Philadelphia Department of Human Services. PECO employees and their families participated in paint days at the school soon after the first parts of mural design were completed. During the mural dedication, the funders, city officials, and school district representatives came together to celebrate the work that the school community had put into the mural process.



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Mural Arts Program / Benjamin Volta.  
Photo courtesy of Volta Studio.



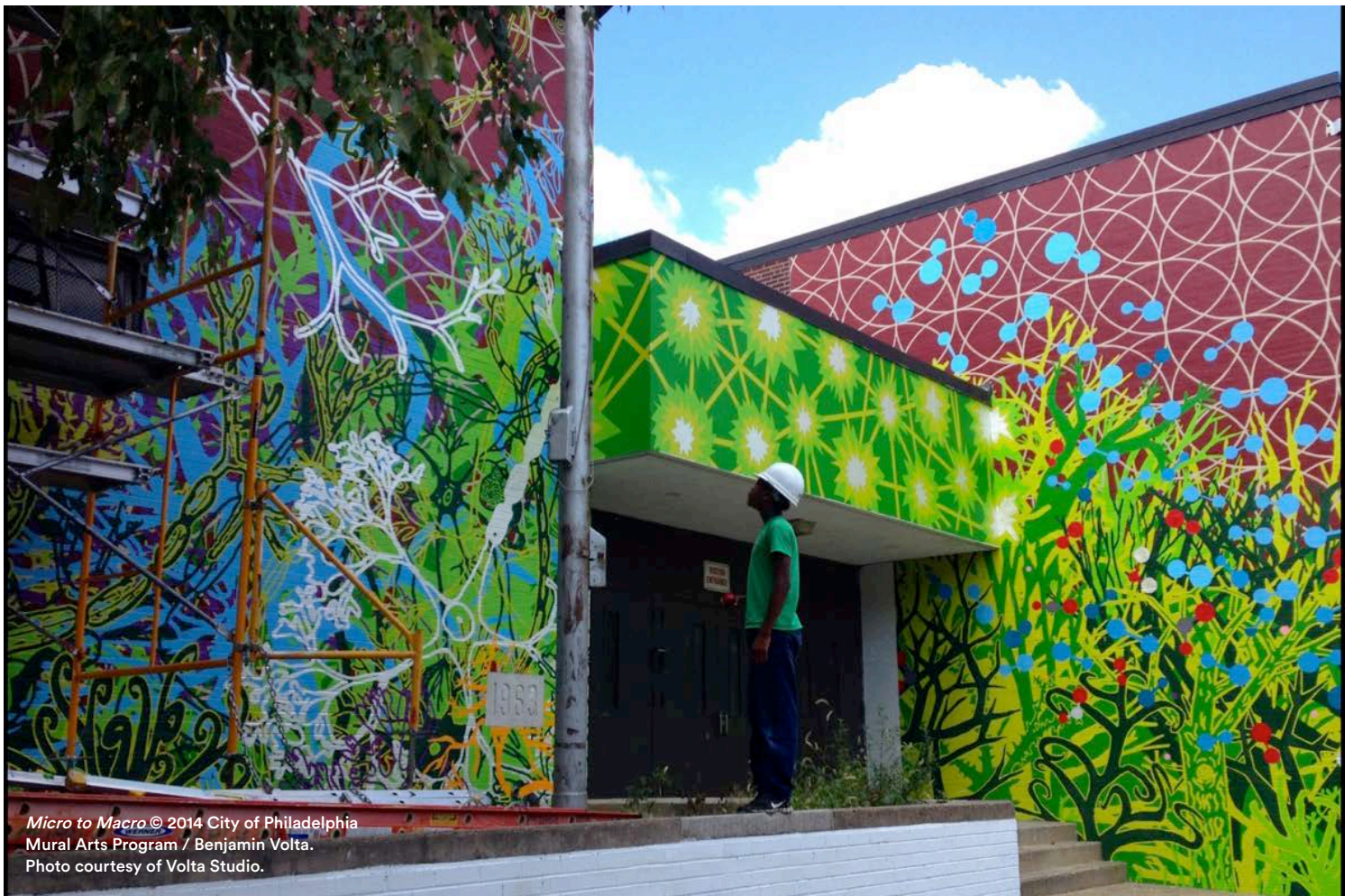


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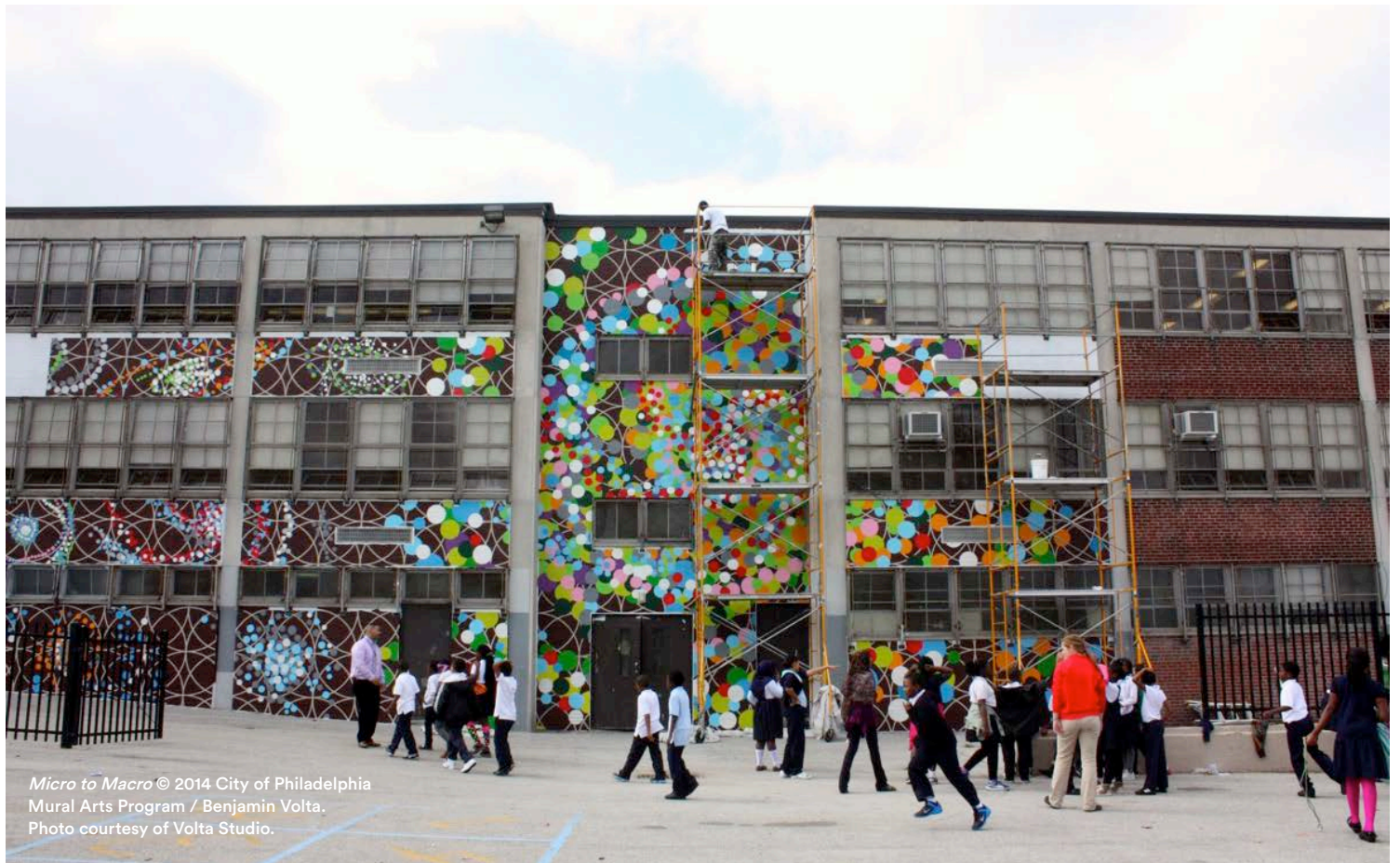




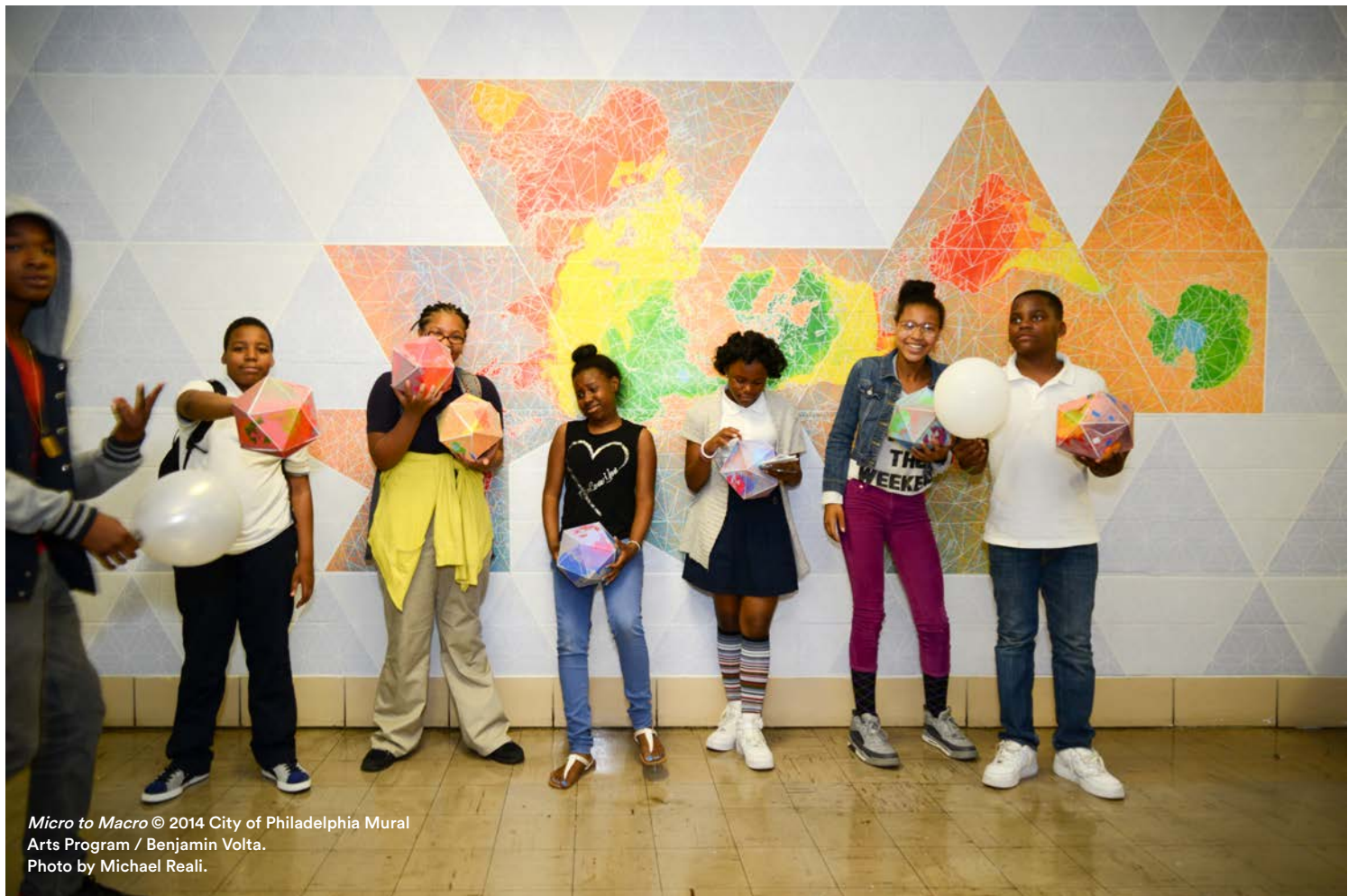








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# Finding Connections: Collaborative Design through Arts Integration

Volta honed his approach to collaborating with students and teachers during previous school-based residencies where he integrated art into math and science instruction. These previous experiences led Volta to suggest working with one grade level both during and after school two days a week for the whole school year.

How did Volta realize this approach for “Micro to Macro”? First, Volta spent time in the classroom as a student, observing normal classroom activities and how the students interacted with their teacher. From these observation notes, Volta made a list of artists and artworks that he thought might resonate with the students. After about a month of observation, Volta started interacting with the students by presenting artists and artworks to start to brainstorm what they could build together. In this early stage, Volta did not present any ideas about what the mural might be or its scale. He simply shared that they would design something that would transform the school in some way.

The big “aha” moment that led to the vision for mural came when Volta was showing the film “Powers of Ten” by Charles and Ray Eames. The film takes the viewer on a journey of relative scales, first expanding out from the Earth to show the entire universe, then reducing inward to view cells, DNA, and atomic particles. Volta had shared half a dozen different artists’ projects with the students and got typical 7th grade attention masked in cool disinterest. Yet during the film, all of the students’ eyes were glued to the screen and they were completely absorbed. When the film was over, Volta asked them if they wanted to explore this idea. Do we want to try to wrap the entire school with the universe? Everyone’s heads went up and down.

From there, the meat of the design process began with a series of drawing exercises and design experiments to try to find the elements that would be included in the mural. At each step of the way, Volta would look for the visual and thematic connections that would get them to the next step and ultimately complete the vision.

The first activity was looking at aerial maps of the Mantua neighborhood surrounding the school. The group noticed how close the school is to natural assets like the Schuylkill River and Fairmount Park, but also how Mantua is cut off from the waterfront by the expressway. The group decided to try to bring nature closer in the design.

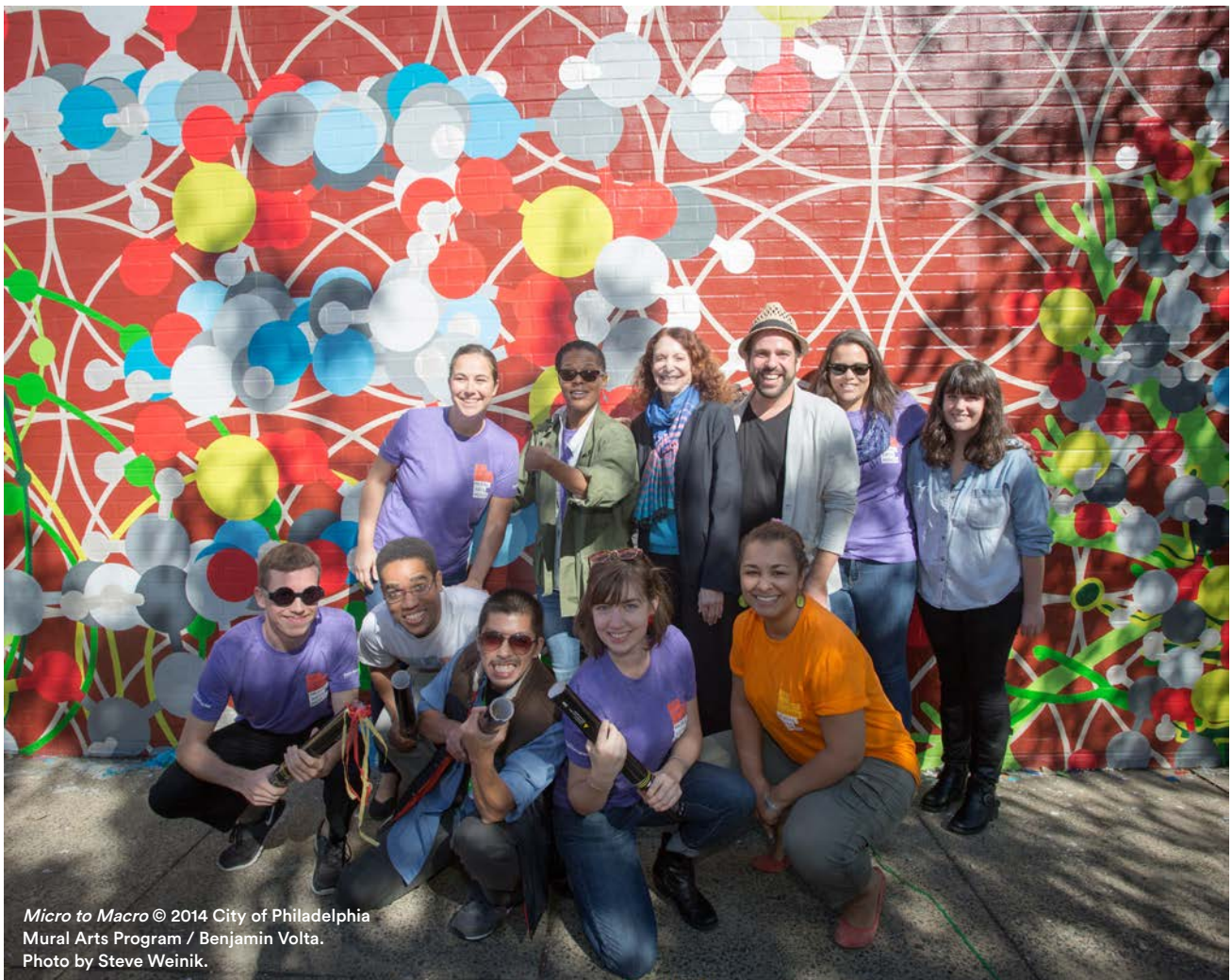
So, in order to bring nature closer, the group began drawing trees. The students learned about the “rule of growth” that dictates each new branch should be smaller than the last. The students worked on their measurement skills, key to both math and science, and fractions to make sure that each branch in their drawing was slenderer than the one before it. The group worked on drawing trees for two months. The leaves, however, weren’t working in the design. Ms. Cos, the science teacher, offered that they were going to be learning about air molecules next. And the idea of interspersing the branches with air molecules was born.

For math-based activities, the students learned how to draw a Venn diagram and other geometric shapes using a compass. They talked about how a Venn diagram can represent how art, math, and science are overlapping subjects. The students also drew their own designs within three overlapping circles with six triangles in the center circle. The overlapping circles ended up leading to the grid of circles that forms the base of the entire design.

The students and Volta generated each design element—maps, trees, circles, air molecules, brain cells with dendrites, DNA, atoms, the moon, the solar system, and the galaxy—using a similar process. Volta would introduce drawing exercises during class time and then refine the design with the group of five to eight dedicated students who came after school. After school, the group would discuss what colors different elements should be and how they should fit together. In January, the School District approved the initial design for the right side of the front of the school, including the globe map, circular grid, air molecules, and trees. The team began painting panels with students and community members in late January, but Volta and the students kept designing together until the end of the school year.



**“We just trusted that if we kept drawing, the connections were going to be made.”**  
**– Ben Volta**



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Photo by Steve Weinik.





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MORTON McMICHAEL  
PUBLIC SCHOOL



# Reproducing the Magic

Mural Arts and Ben Volta drew on their many years of developing community murals with youth to make “Micro to Macro” a success. Here are some of the lessons learned from this project.

**Create meaningful opportunities for youth to contribute and have ownership over the mural:** Selecting one grade to work with was key, so that Volta could appropriately connect activities to what the students were learning and engage with them over the entire year. The arts-integrated approach could then powerfully stimulate students’ excitement around math and science. Volta also got to deeply collaborate with a smaller set of students in the after-school format.

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**Take enough time to develop working relationships, but don’t delay realization:** Volta worked with the students for an entire school year and they were designing together up until the last day. This was important because the team had time to regroup if a particular day did not go perfectly. Even though this delayed the painting and installation of the full mural, it was still important for the mural to be completed before the 7th grade students graduated so that they could see the fruits of their collaboration.

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**Be patient and flexible within the iterative process of collaborative design:** The group began with a street map of Mantua where the global map is in the final design, but it wasn’t working. So, they scrapped that and tried something else. The design process did not move in a straight line, so everyone needed to be comfortable with trial and error. The group also spent two months drawing trees before finding the next idea. Middle schoolers, developmentally, were content to be really absorbed in one thing at a time, which benefited this process. When the vision for the mural grew, Mural Arts demonstrated flexibility and found more resources.



**Communicate regularly and well to help ensure the community will embrace the mural:** This mural project was unusual in that the group finalized the design in stages. Volta skillfully used his experience to communicate how the final design of a mural is refined and realized later in the process. When presenting in the early design review steps with the School District and community groups, Volta showed how other projects had developed this way. Feeling satisfied that the design was headed in the right direction and youth would continue to direct the process created buy-in from community members.

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**Combine experienced and emerging artists to create a dream team and build capacity:** Volta, an experienced artist, thrives in collaborative teams. Washington served as a reflective partner to Volta, especially in trouble-shooting how to engage the students. She went on to be a lead teaching artist in other Mural Arts programs. Likewise, the assistant artists successfully used this project as a step in their development. Many of them have gone on to create their own artworks with Mural Arts and independently. This project serves as an example of how Mural Arts has built informal and formal workforce pipelines for artists, especially by strategically aligning projects across programs.

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**Commit adequate resources for quality work and big impact:** The scale of this mural design was crucial both to realize the vision of wrapping the school with the universe and for creating a visual impact that transformed how people felt about the school. Yet many, if not most, mural projects do not have such big final budgets. Even with big budgets, timeline overruns can lead to artists committing unpaid time to a project. Mural Arts is always balancing the desire for big impact with feasibility in terms of installation and materials and time. Organizations that don't have the same access to internal program synergies can seek to pool resources and have a greater impact through partnerships.





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Photo by Michael Real.



# From Youth to Community Impact

Projects that engage youth are the most successful when they solidly place young people as collaborators in the process rather than just executors of something already created. Volta practiced a deep collaboration with the Morton McMichael School 7th graders. As a result, the team was able to share the young people's voices with the community in public space.

An approach that integrates art into subjects like math and science deepens the potential impact for students. When one integrates art and creativity through other subjects, it increases young people's engagement and focus. An arts-integrated approach also opens the possibility of connecting with students who might not think that art was "their thing." In other words, this approach increases students' engagement with both math and science and their own creativity.

The mural produced through this project also had a dramatic impact itself. Beforehand, the school building was old and depressing. The mural completely transformed the exterior of the building and did so without tearing it down and starting fresh. Principal Wallace received a lot of positive feedback and noted that it has profoundly impacted the way people feel about entering the building. This is an example of how school-based projects have an impact beyond the youth who directly touch the process of making the mural, or even the students who attend that school in the future. Large scale murals that have a big visual impact can make a difference by making school buildings welcoming to all.

**"The students' involvement in the design was a really positive experience and they felt a lot of agency in the process."**

**– Lisa Murch**







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