2015

Progressive Education in Context, V & VI

Bank Street College of Education

Progressive Education in Context V & VI

Bank Street
School for Children

Progressive Education in Context V

Introduction

We are very excited to present *Progressive Education in Context: Volume V*. Each volume is designed to give the reader insight into the thinking and planning that goes into the activities and curriculum in the School for Children.

Volume V highlights three areas of our program: math, high school placement, and art. The last article, *The Last Word*, is our new tradition—a graduation speech by a student that offers the reader a different and unique perspective into the experience of life at Bank Street.

The first article, *Turning the Tide: A Thoughtful and Developmentally Appropriate Approach to Teaching Mathematics*, is written by Sally Borduin, Math Specialist for the 5/6s through the 8/9s. In this article, Sally describes her work with teachers and children in order to develop and sustain a strong, vibrant approach to mathematical thinking and problem solving. This article lays out some of the mission-driven and philosophical thinking behind the math program for our younger children. The second article by Evie Gurney, Director of High School Placement, focuses on the high school application process, a topic of great interest to families considering an 8th grade school. In *From Bank Street to High School*, Evie demystifies the process and includes some of the views of students who have experienced it. Stan Brimberg's article, *The Fall and Rise of the 8th Grade School* in Volume I of *Progressive Education in Context* complements this article to give a well-rounded and complete picture of our mission, vision, and values in this regard. Maria Richa, one of the art teachers in the School for Children and an adjunct faculty member at Bank Street College writes about her approach to teaching art to children in *Developing Visual Language*. The hallways of the School for Children clearly tell the story of the creative thinking and visual problem solving that occurs in the art room at Bank Street. The final piece, *The Last Word*, is written by Patrick Brady, class of 2013, in which he reflects on the challenges of being a Republican amongst a predominantly Democratic community and what he learns and gains from that experience.

It is always our hope that these articles are enjoyable to read and provide a deeper understanding of what happens in the classrooms at Bank Street. We try to keep the articles short and to the point with the hope that just a little bit will go a long way. Happy reading!

Turning the Tide: A Thoughtful and Developmentally Appropriate Approach to Teaching Mathematics

By Sally Borduin, *Lower and Middle School Math Specialist*

Contemporary Contexts

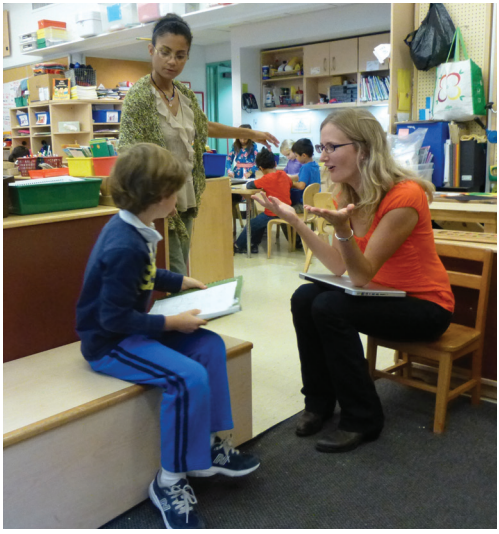
At our school, we recognize that providing high quality education in mathematics so that our students are equipped for their futures is no easy feat. With this in mind, and in line with our mission, we try to embrace an attitude of constant self-reflection with the intention of improving our work. Our approach to learning and to planning our work is driven by research. We strive to foster not only competent mathematicians, but also students who get pleasure from engaging with numbers and who understand the significance of math. In order to reach this goal, one aspect of our work is to undo the influence of "math phobia," a phenomenon so prevalent in our society in which math is often viewed as unappealing, mysterious, and inaccessible. If you combine the possibility of children's preconceived ideas gained from this cultural norm with the fear of making mistakes, and a modern world filled with expectations for instant gratification, the necessity of building the groundwork becomes clearer. We need to create safe environments where children feel comfortable taking risks, persevering through challenges, and believing in their capacity to do math.

The Bank Street credo and our practice emphasize courage, engagement, and flexibility; our school values empowering students, respecting individuals, viewing mistakes as learning opportunities, and developing self-efficacy. A key objective we share with the National Council of Teachers of Mathematics is for children to have the expectation that their math work make sense to them, and then to actually have it make sense. Those two things engender a sense of confidence as well as real competence.

Math Misunderstood

The unfortunate reputation the subject has often gained is largely due to the way many of us learned math ourselves: by memorizing facts and procedures, applying them, and then moving on, we were placed in the role of passive receivers of information. Within such a framework, math became a mechanical rather than a creative process: we relied heavily on memory, conformity, and compliance, while underlying concepts often remained unclear.

We have had greater aspirations for our students, however. Lucy Sprague Mitchell, Bank Street's founder, wrote in our credo that we want to develop "a zest for living that comes from taking in the world with all five senses alert," and, "lively curiosities that turn the world into an exciting laboratory." We want our students to experience what mathematicians do and to actively engage with mathematics by searching for patterns, making conjectures, proving or disproving theories, solving problems, and sharing work and discoveries with their peers. We want to nurture critical thinkers and problem solvers; we want children to learn by doing and through exploration. We understand this places higher cognitive demands on students, yet know this is what is required for optimum outcomes. When the practices of mathematicians are incorporated in a curriculum and school philosophy, and a secure understanding of mathematical content is fostered, the odds are high for igniting passion for the subject, in addition to developing proficient and confident mathematicians.



Sally Borduin (right) teaching math

It is not the knowledge of and ability to carry out a standard algorithm that determines a strong student in mathematics. It is far less taxing to memorize a procedure and carry it out without much thought, than to manipulate numbers in personally meaningful and efficient ways based on deep understanding of the number system. Historically, much math education has focused on such low level cognitive demands and has produced many people who remain afraid of math. We want our students to learn more sophisticated and flexible ways of calculating, based on their understandings of how numbers can be put together and taken apart. Emphasis on the underpinnings of addition, subtraction, and the base-ten number system in the first half of Middle School supports this endeavor, and students come to learn standard algorithms later in Middle School to add to their repertoire.

Our Program and Approach

Throughout the Middle School, teachers predominantly use *Investigations in Number, Data and Space* (TERC, 2012), alongside knowledge of their students, to plan learning experiences for their students. It is a child-centered, developmentally-

appropriate, research-based program, in which children are guided to be meaning makers, build on what they know, approach mathematical tasks in their own ways, make connections, think flexibly, discover relationships, and understand that there are multiple strategies for solving problems. By investigating how many red and blue crayons there may be in a set of 10 such crayons, a student in the 6/7s experiences that math tasks can have more than one correct answer. They are also challenged to find *all* the possibilities, then see if they can discover and use a mathematical structure, and generalize it to other similar problems, making logical estimations before doing so. Classroom discussions elicit communication of a variety of strategies, so students are exposed to multiple representations and can deepen their understanding of available pathways to solutions. Teacher recordings of varied student methods aid developing understanding of standard notation to write equations, important for algebra.

Students in the 6/7s and 7/8s at the School for Children can frequently be found playing many math games with their classmates. Engaging in these games is one way our curriculum addresses the 5 Strands of Mathematical Proficiency as outlined by the *National Research Council: Conceptual Understanding, Procedural Fluency, Strategic Competence, Adaptive Reasoning, and Productive Disposition*. The games are also designed to facilitate conjecture and discovery, which encompass foundations of algebraic thinking (such as a + b = b + a). Teachers guide small and large group discussions around these important mathematical ideas, facilitating effective communication, representation, reasoning, and proof. Math is not solely taught through games or purely during discrete math periods. For example, learning about data and measurement takes place during social studies too. Most investigations are grounded in real-world contexts, such as when the 7/8s analyze line plots and uncover the story the data has to tell about classes of students and the teeth they have lost.

Students experience a wide variety of tasks and problems built on a visual and hands-on approach to learning about number operations, algebraic thinking, measurement, data, and geometry. They use many concrete tools, which ground and deepen their understanding and support building a bridge between the tangible and abstract. In addition to helping students reason and make discoveries about quantity, shape, and space, hands-on materials also help students share and model their ideas and agree or disagree with mathematical arguments. Math tools are introduced in thoughtful and meaningful ways; the 6/7s classes construct a 100s chart from a number line before using the tool to ensure greater understanding of its configuration and purpose. Visualization is important in math, as the development of mental images supports mathematical understanding. Students are shown Quick Images of quantities and shapes to build such mental images and consider and discuss attributes of numbers and shapes.

Confirmation of Our Goals and Vision

High school admissions officers have commented that our students are engaged, cooperative learners and critical consumers of information; ask good questions; and perhaps most notably, know how to think. Lucy Sprague Mitchell wrote as a goal in our credo that we want for human beings to develop, "…the courage to work, unafraid and efficiently, in a world of new needs, new problems, and new ideas." With the future uncertain by nature, we feel optimistic that we are developing a courageous group of mathematicians who expect to make sense of their ever-changing world, and have had a solid foundation in learning how to learn.

References

Bank Street School for Children. (2014). (n.d.). *Misson & credo*. Retrieved from http://bankstreet.edu/school-children/about-sfc/mission/

Burns, M. (1998). *Math: facing an American phobia*. Sausalito, CA: Math Solutions Publications.

Hiebert, J. C., Carpenter, T. P., Fennema, E., Fuson, K. C., Human, P. G., Murray, H. G., Oliver, A. I., & Wearne, D. (1997). *Making Sense: Teaching and learning mathematics with understanding*. Portsmouth, NH: Heinemann.

Kilpatrick, J., Swafford, J., Findell, B., & National Research Council (U.S.). (2001). *Adding it up: Helping children learn mathematics*. Washington, DC: National Academy Press.

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: Author.

Stein, M. K., Smith, M. S., Henningsen, M. A., & Silver, E. A. (2009). *Implementing standards-based mathematics instruction: A casebook for professional development*. New York: Teachers College Press.

TERC. (2012). *Investigations in number, data and space* (2nd ed.). Glenview, Ill.: Pearson Scott Foresman.

From Bank Street to High School

By Evie Gurney, *Director of Secondary School Placement*

"I'm nervous, but excited." This is how one 7th grade boy expressed his feelings about looking for a high school. Some families anticipate that the process will be stressful, and it can be, especially in a city like New York, where the options are vast and varied. At the same time, the average 13-year-old is ready and eager to explore the wider world, hence, the excitement. At Bank Street, moving from 7th to 8th grade means students begin to realize they will have to leave, but they have no idea, at least initially, what the process of leaving really looks like. So begins a search that can be characterized for Bank Street families by three essential qualities: imagination, inquiry, and self-knowledge.

Imagination

When a family begins to think about high school options, a natural starting point is to consider how it will be different from Bank Street. Many of our students have been at the school since they were toddlers, and they and their families don't know any other model. The prospect of change can be invigorating but also a little scary. Students have to learn to envision their high school selves, and imagine how a particular school would work for them, with only a limited exposure to its culture and environment—it's kind of a guided leap of faith. Teachers and counselors at school are in ongoing discussions with families about their choices, but families do a lot of the legwork and brainwork, visiting schools and sizing up their various options. Families may take into consideration many factors beyond the academic program: the social and emotional milieu, extra-curricular activities, social justice and community service opportunities, along with practical elements like commute, size, and cost. We work with students to draw on the natural strengths we have observed over their years at our school. A child may have specific talents that can't be gleaned through test results. So while the students are imagining themselves as the high schoolers they want to become, we help the schools visualize the future student at his or her best.

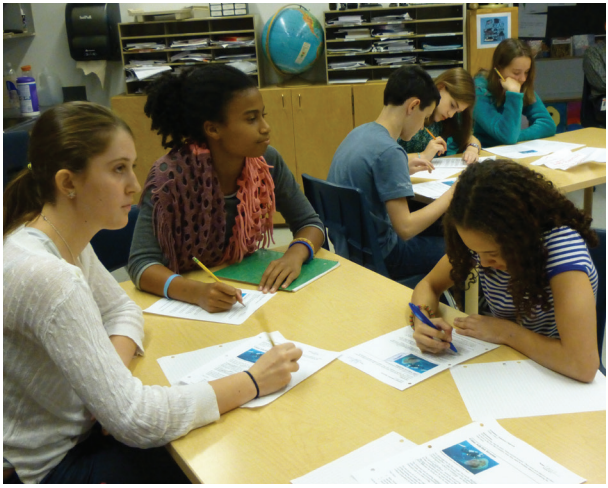
Inquiry

Students want to know what makes each high school unique. At Bank Street, they are encouraged to dig deep all the time, and so this applies to looking at school options too. Our families approach the high school search with some healthy skepticism, but also with vigor and curiosity. Bank Street students love a challenge, and

they especially love to observe and to ask questions. One student remarked that he paid special attention to how students at each school used the library: was it a quiet workspace, a social scene, a nap zone, or a bit of everything? Another student said, "I liked looking at the younger kids at the schools I visited and tried to imagine them in high school at that same school." Yet another student commented on the amount of time schools allotted to interviewing and touring. School A "was like a deli line," he said, and School B "was like a doctor's office – next!" Coming from a progressive school, the question is often how much will be the same and how much will be different. Some children want an environment as close to Bank Street as possible; some want something very different for high school. "I'm ready for grades!" one proclaimed. Many kids are looking for the same values, and felt most positively about schools where the current students seemed excited to be there. In addition to learning about the schools, students often learn about themselves. As one student put it, "I always waited until the last minute, and I learned that I can't do that." Another said: "It really helps to be organized."

Self-Knowledge

While we tell parents and students that there is the right school for every child, finding that right fit can be a challenge. It helps enormously when students have a solid sense of themselves and how they relate to the larger community. Bank Street students are used to participating in community service activities in school and beyond; they embrace the importance of community. From years of morning meetings and from the thousands of group work experiences they've had, they know how to collaborate. But they have also been asked, especially in their 8th grade year and as leaders of the student body, to think about who they are as individuals. They write about themselves at some length and talk with their parents, teachers, with each other, and with me. They practice interviewing with the Coordinator. As they are learning the skills of being a high school applicant, they begin to develop some expertise; they



Bank Street Upper School students

step into these new shoes and find that they fit. They begin to take ownership of the process. We encourage parents to be partners with their children in pursuing schools that would be appropriate options. One parent had the right idea when she said, "I told her she'll be making the choice, but that we wouldn't let her make a bad one."

Parents and students are often surprised to discover that where they started is not anywhere near where they end up. While they have expended a lot of time and energy, they are also stimulated by the active and interactive nature of the search. It is a wonderfully fluid process, saturated with communication between the school and families, parents and children, students and peers, and graduates and students. Most parents are struck by how supportive the Bank Street community is throughout, and express admiration for the fact that students treat each other with sincere sensitivity. Going through the process together as a grade, they've had opportunities to share and empathize. By the end of school, students have a deeper understanding of who they are, what they want and where they are going. They are thoroughly prepared for the transition to high school. Understandably, as with all major life changes, there are mixed emotions. They are sad to be leaving Bank Street but they are ready for the next chapter. Echoing the words of his 7th grade peer, a graduating 8th grader summed up his feelings about going to high school: "I'm nervous, but excited."

Developing Visual Language – Teaching Art

By Maria Richa, *Art Teacher*

Parents and guests often notice how personal the works of art are in our school. Along with these observations, I hear a string of comments such as, "You can tell the children really enjoyed this," or, "They are all so different from one another." These comments validate a core value of a child-centered education: that the work is about joy and self-discovery. The art on the walls are celebrations of the process of making art and not a teacher's planned product. At Bank Street, we value children's natural artistic development, their interests, and the process of making art.

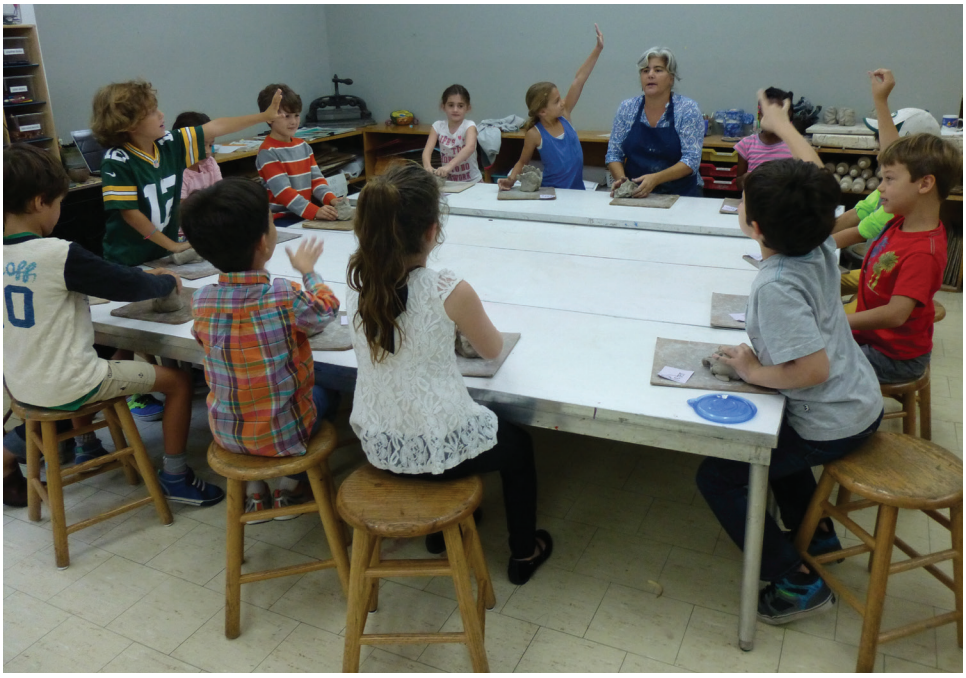
As an art teacher of a wide range of ages in the School for Children, I am highly interested in providing children with the time and space to develop concepts through the process of making art. I enjoy and value the everyday experiences that children have as I carefully observe them at work. Through my observation, I gain more appreciation and respect for the children's learning processes. When they are making art, children are not only making connections to the tactile qualities of materials, but on an emotional level, they are also delving into and discovering who they are and what interests them.

Our art curriculum has been created over decades of invested observations from past art teachers Edith Gwathmey, Ann Marie Mott, and Lois Lord, who carefully studied and became experts in the field of art education. Learning about children's artistic development along with anecdotes and the observation of children's processes were and continue to be important in shaping our curriculum. What we learn helps us guide our curriculum toward finding ways to navigate through the children's interests and curiosity.

I was recently painting with a class of four-year-olds when a child began to paint his water cup instead of the paper next to him. Soon, other children at the table also became interested in this process. I saw how excited they all became with this discovery and naturally the following day their classroom teacher brought boxes for them to paint. One idea led to the next; it is with flexible thinking and careful observations of a teacher that curriculum is shaped. The child's interest develops apace with his needs.

The art department believes that it is through the repetition of experiences with the same materials—collage, woodworking, painting, and clay—that children gain deeper understanding. This growing knowledge provides them with the building blocks of a visual language. Beginning with the 3/4s, children investigate and explore the sensual nature of these materials. Soon, they learn to control their explorations and make distinct shapes, and patches of colors and lines. Subsequently, children are

able to integrate these elements into a whole design: an expressive arrangement of visual-graphic elements. In 5/6s and 6/7s, children discover that this artistic vocabulary can be used to create designs, and later, representational symbols of importance to them, such as themselves, people, animals, houses, vehicles, and plants. Planned and repeated experiences provided in the art room enable children to gain skills in the control of the material and in the use of tools. I often tell parents on Curriculum Night that it is not the materials that change, it is the child using the materials.



Maria Richa conducts one of her art classes

As we move into the Middle and Upper School floors, you can see in the exhibits how children use these materials to communicate in a visual language. Often, their work reveals feelings and ideas about what they know and see in the world. Much of their artwork communicates their joys and dreams, their passions and concerns. While they are making art, older children make connections to what they like and the lives they live. Experiences from school or outside of school with their families and friends are important to them in their art-making. They are not only exploring a visual language, but are also developing a means of conveying feelings and thoughts. The children's interpretations of the world around them can often be seen in exhibitions of the higher grades' work at Bank Street. Their narratives are about experiences and feelings they have and about topics typical of their ages, such as justice or injustices in our world.

In a practice that is similar to how most subjects are taught at Bank Street, the art and shop classes start with a group discussion, or "motivation." These motivations help children connect in an intimate way to the subject presented. Often in these meetings, children are encouraged to share their personal experiences, associations, and ideas. In this process, we build a respectful, democratic community; a language to describe personal experiences or related experiences; and in turn, we make meaningful connections to the world at large.

You can walk into an 11/12's art motivation and hear the art teacher ask students "Where have you seen a path?" Children share experiences, reflecting and revisiting those places. Through discussion, the definition of *path* expands in the minds of the children and traditional barriers might be challenged. "What do you see near or far on your path?" These questions guide children to deepen their visualizations of their ideas and re-experience or perhaps create, for the first time, a place. Subsequent questions might help tap into their moods such as, "Where are you in the path?" and "What time of the year might you choose for your path?" Whenever possible, we draw on children's knowledge, or perhaps the use of tools and materials, to demonstrate ways to convey an idea, so in the same lesson, a teacher might invite students to show him or her how to draw a path. In this process, children become the teachers and also support one another.

When responding to children while working, or once they complete it, we use descriptive language carefully. The art department believes it is best to make concrete observations and use descriptive language without judging or assuming what the children have done or intended in their work. When responding to a child, we often hold up the work and comment on elements of line, shape, color, and arrangement.

"I see you used bold and bright colors in your painting.

"What colors did you use to make this green?"

"Look at all the ways you used your brush!"

"I see you dabbed your brush here, creating a rough surface."

Interestingly, children begin to use this language to describe their own work and each other's work. Through careful observation, the adult can make comments that not only value a child's growth and process, but that will also bring awareness to a child of his/her process. As children grow, they develop a language for discussing their own work and the work of their peers. In the older grades, the art and shop teachers often encourage students to respond to each other in similar ways.

The exhibits on each floor build within the children a sense of respect for their own individual discoveries and ideas. At Bank Street, we exhibit all the work of an entire class for the purpose of celebrating and sharing these achievements with the larger community. There is a clear recognition of the individual artist in these exhibits. Children look back at their work and that of their friends. They reflect on their own learning and become excited and proud of their work. As children grow older, they will also look closely at their friends' discoveries and be inspired to explore new concepts that they might not have thought about before, an important development in their social learning.

The Last Word

By Patrick Brady, *Bank Street School for Children – 2013, Collegiate School – 2017*

It's September of 2008 and all one can hear throughout the hallways of Bank Street is conversation about the upcoming presidential election; even in the middle school classrooms it's active:

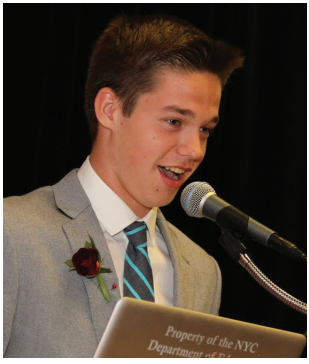
"He's definitely gonna win."

"Republicans are just Rednecks from the South."

"I can see Russia from my house."

"Who in their right mind would vote for McCain?"

Well, actually, me. If I had been eighteen years old, I would have voted for McCain. I remember when I shared this news with my classmates, it was met with lots of astonished stares and incredulous "What," and, "I can't believe you would do such a thing!" Soon, arguments exploded, all of us parroting the points our parents were making at home. We may have been only nine and ten years old, but our emotions were mirroring the polarization that was gripping the nation.



Patrick Brady

Fast forward to September of this year. It's another Presidential election, but this time we're young teenagers, with our own opinions and beliefs, still arguing over the same things. Back and forth we go, in morning meetings, current events classes, lunchtime, and after school, debating proposed tax rates and military efforts overseas. Our emotions boil over. Ali (13/14s humanities teacher) even threatens one day that she's going to start wearing a referee's uniform.

We are a class of nineteen and you would think with all our diverse backgrounds that we would reflect a range of political orientations. However, you would be mistaken. Of my eighteen classmates, I am the only one who identifies as Republican. Yes, there are issues that we all agree on, like gun control, abortion, and equal rights, but I am pretty much alone as a conservative. I favor the *Wall Street Journal* over the *New York Times*, I think Ronald Reagan was a great President, and I believe trickle down economics could work if given a chance.

Still, one against eighteen, the odds aren't great. Perhaps I just should have surrendered, stopped disagreeing, and sat quietly. It has certainly happened throughout history, people finding themselves alone and overmatched. Believe me, I understand why, in those circumstances, people have had the urge to give in. It's easier that way. But, just because something's easy doesn't mean it's right, and just because something's hard doesn't mean it's wrong. And isn't that the whole point of democracy —that it actually thrives on a plurality of perspectives, values, opinions, talents, interests, and passions?

In the last few years, I've really come to know myself and what I value. I understand the importance of standing up for what I believe in. I derive strength from standing firmly by my convictions, even if they aren't very popular with my classmates. Bank Street has taught me that: stay true to yourself. Not bad coming from a liberal institution.

Thank you to my family, especially my mom, dad, and my sister, Maggie. Thank you friends, and thank you teachers.

Progressive Education in Context VI

Introduction

It is with great pride that we offer you Volume VI of *Progressive Education in Context*. Who knew that when we first published this booklet six years ago that we were creating a tradition—to share in writing the deep thinking and reflection that is constantly present in this community among teachers, administrators, parents, and students alike. We have found a way to inform so many readers both within and outside the Bank Street community of what we are so proud of—the effort and commitment of those at Bank Street to teach and to learn.

Volume VI covers articles representing the cutting edge thinking that belongs to Bank Street. Alexis Wright, Dean of Children's Programs, has written an article regarding the collaborative work on brain-based research with faculty members in the School for Children and those in the Graduate School. The research is ongoing, but the first findings will be presented in the spring of 2016. Along the same lines, Edna Moy, an 8/9s teacher at Bank Street, shares her own interest in mindfulness with an article on how she explored and applied the practices of mindfulness with her class of 8/9s. Edna's success within her own classroom as well as her enthusiasm for this approach has now influenced many other faculty members within the School for Children. In the third article, Emily Linsay, a 4/5s teacher and Greg David, a 9/10s teacher along with Jose Guzman, the math/science coordinator, collaborated to write an article regarding the Buddies Program at Bank Street. With the input from many other members of the faculty, the article describes the program and the significant role it plays in the life of individual students and the community as a whole. The fourth article is a conversation between Laura Sametz, a parent of a 12/13s, and Claire Mansfield, a 6/7s teacher, on Green Action, Bank Street's commitment to the environment and its impact on our strong belief in community and social justice. And finally, *The Last Word*, Irene Lowenson's graduation speech in June 2014, which reflects one individual student's view of herself and her Bank Street experience.

Volume VI of *Progressive Education in Context* is our way of offering the reader a glimpse into what happens within the walls of Bank Street. The work presented here is an example of the thoughtful collaboration that is part of our fabric. We hope that you will enjoy these articles and gain an even deeper insight and understanding of what the Bank Street School for Children is all about.

From Idea to Practice – The Brain-Based Research Team

By Alexis Wright, *Dean of Children's Programs*

This year saw a very exciting professional development idea come to life for the faculty. For a while, I had wondered about the possibility of forming a team of faculty that could spend a distinct period of time together engaged in professional development around brain-based research and cognitive development, and then spend time infusing the school with what they had learned. There were some distinct advantages for the faculty: we would be developing and cultivating a cohort of experts on the topic, this could be a terrific leadership opportunity for classroom teachers, and it allowed for teachers to teach their peers. From my perspective as dean, not only would the project provide the benefits above, but I also thought of it as, most importantly, a chance to help the school arrive at some data and research to help further support the progressive approach as a relevant and vital educational model along with being a possible fundraising opportunity, a marketing opportunity, and a springboard into other collaborative professional development teams in the future.

I shared this nascent idea with faculty in the winter of 2013. Enthusiastic, and so reflective of our community, they asked about the process by which they might serve on the team. Also reflective of our community, through the generosity of the School for Children families, at the annual benefit we were able to raise over $35,000 for the effort. After a rigorous application process, we selected a team of eight faculty members, and given our relationship with the Bank Street Graduate School, we then added three Graduate School faculty members to the team, for a total of eleven.

In the fall of 2014, all of the team members went to the *Learning & the Brain* conference in Boston, one of the preeminent conferences focused on disseminating the latest research in neuroscience and psychology and their potential applications to education. Over three days, the team heard from leading researchers about the latest discoveries in neuroscience and neuroeducation. Upon their return, the excitement and energy were palpable—the team could not wait to share their newfound knowledge with their colleagues, and to implement new practices in their classrooms. Next, the team set about planning the College's professional day, a day when the School for Children and Graduate faculties come together to further their professional growth. The team arranged for three keynote speakers, experts in their fields, and small group discussions that reflected on the implications of their research on teachers and students in the classroom. For the second part of the day, faculty had the choice of participating in small-group discussions on topics such as the brain and the arts, the

brain and core executive functions, and the brain and technology, all with the point of helping faculty understand the implications of brain research and understanding on their pedagogy and the classroom environment.

After having participated in the NYSAIS Brain Conference and other professional development workshops and conferences, last spring the team led a faculty meeting and selected an array of books for the faculty to read over the summer. With the generous support of the Parents' Association, we have also arranged to host Dr. Adele Diamond, a scientist at the forefront of research on executive functioning and brain development, in the spring of 2016, ensuring that the work and conversations will continue into the next school year.

At the end of this two-year project, I know the team will have helped faculty and parents understand some of the latest research and the implications of brain-based learning. The team will make recommendations to its colleagues about ways in which our already dynamic and challenging curriculum can take advantage of this research, and ways in which faculty can incorporate the research and findings into their practice.

And, importantly to me, as the dean of a progressive school, I strongly suspect that the team's findings will further validate the ways in which we as a school already appreciate children and think about teaching and learning. The team will help provide some of the evidence that justifies the progressive approach to teaching and learning, and help us with our communication and marketing efforts to prospective families.

Our mission requires that we "improve the education of children and their teachers by applying to the education process all available knowledge about learning and growth…" The Brain-Based Research Team at Bank Street is working to ensure that happens, as they infuse the community and culture with new knowledge, which will ultimately strengthen the way we teach and how we work with our children. I am thrilled that the work has challenged us, enriched us, and will help us remain at the forefront of progressive education.

Progressive Education – Mindfulness in the Third Grade

By Edna Moy-Rome, *8/9s head teacher*

Imagine seeing a classroom of 21 eight- and nine-year-olds sitting in the meeting area with eyes closed, breathing, taking a mindful moment, or watching children enter the classroom walking mindfully around the room after a transition from lunch, using that time to breathe and be aware of their bodies before they enter the meeting area, settled and ready to listen and learn. Imagine the possibilities if children develop a self-awareness of their thoughts and emotions, learn to accept everyday life's challenges and stresses, and find ways to bring calm and perspective to their lives. You may be wondering how this could be and in my work I discovered that it was possible by using mindfulness in the classroom.

Over the course of the 2013-14 school year, I had the opportunity to introduce and explore mindfulness in a third grade classroom. My students and I explored ways to approach classroom activities with purpose, calm, and intention. The mindfulness practices we shared deepened the children's ability to be reflective about the present moment, and brought a sense of physical and emotional calm to our classroom. It also helped develop children's deeper sense of awareness of themselves, and their responses and actions, as they reflected on their possible choices before responding to peers or their learning.

I knew a little about mindfulness from a workshop and learned more from reading several books on the subject. As a third grade classroom teacher for over 20 years, I have noticed that, over time, technology and social changes have affected both children and adults. The children of today face new challenges. They are growing up in a fast-paced world inundated with technology, a digital and instantaneous flow of information, and days filled with scheduled activities after the school day ends. When do they have time to mull over life, play imaginatively, dream, or think? I believe that, to various degrees, these challenges have impacted children's attention span, focus, concentration, and impulse control. These challenges affect the quality of the interactions with the peers and adults they encounter daily. These everyday stresses challenge the well-being of teachers and students alike, possibly impeding their ability to be fully present, calm, focused, thoughtful, and responsive in daily interactions with each other in the classroom. After learning about mindfulness, I wondered if taking a moment to breathe, pause, and reconnect the body with the mind is something that we all need: children, teachers, and parents.

My pursuit of mindfulness in the classroom was to see what effects it would have on the children, learning, and the environment. I wondered how could we grow children's attention, concentration, and focus, and imbue their attitude towards doing schoolwork with a deeper understanding of sustained attention and time needed to craft a project or solve a problem. How do we help children deepen their ability to be more thoughtful, reflective, and compassionate? How do we get children to become more aware of themselves before choosing how to respond to a peer rather than reacting impulsively? Would they improve their executive function skills? Would they be more productive? Would practicing mindfulness have any short-term or long-term effects? And, if so, what? I wanted to find out how practicing mindfulness would affect the classroom environment's sense of calmness and compassion as a community.

Mindfulness, what is it? How does it fit into school? "Mindfulness practice is the awareness that emerges through paying attention on purpose in the present moment, nonjudgmentally to the unfolding of experiences moment to moment," (Kabat-Zinn, 1990). "Mindfulness is the awareness that emerges by paying attention to your life in the here and now with kindness and curiosity," (Saltzman, 2014). What is a mindful moment? It is the time spent focusing on your breathing with an inhalation and exhalation counting as one breath and can be as short as the count of 10 breaths or extended to a minute or more.

Neuroscience offers insights showing that mindfulness practice physically affects

the brain. Research indicates that mindfulness develops the brain's ability to produce new neurons and make neural connections, thereby increasing the area of the brain related to an individual's capacity to manage thoughts, emotions, and actions. This is also the area of the brain responsible for executive functions. Executive functions comprise cognitive flexibility, self-control, self-regulation, and working memory.

Executive function skills that are well developed are a strong predictor of future academic and personal success. Children who have higher executive function skills have, associated with them, positive developmental outcomes such as: on-task behavior, better perspective-taking skills, improved self esteem and sense of self, and relational success, including positive social, emotional, and behavioral outcomes. (Diamond, 2011; Tang, 2012)

When children are able to respond in thoughtful ways, they enable themselves to experience better decision-making. They develop the skill of becoming more self-aware and are better able to manage their emotions and behaviors, thereby enhancing their social emotional development and learning. It was the neuroscience of executive functions and social emotional learning that ultimately led me to choose to introduce mindfulness to a classroom of children. I discovered that setting aside time within our daily classroom schedule to take a mindful moment actually creates a calm and relaxed feeling that connects the body and mind by focusing on one's breathing. In addition, I experienced that mindfulness allows the mind to access that still, quiet place inside of you so that thoughtfulness, reflection, focus, and concentration are attainable. Even the classroom during this moment in time becomes a place of quiet and calm that begins to create an environment that sets the tone, allowing for intentional learning to occur.

My plan for the classroom was to ease in slowly, creating a realistic practice, with mindfulness sessions three times a week after the transition from lunch back into the classroom, before the children got ready to begin writing or work period. We began simply, early in the fall. After the initial conversation defining mindfulness, using a water bottle with glitter and shaking it, I asked children to think of this bottle as a metaphor of the mind. The water is the mind and the glitter represents all your thoughts and emotions, all swirling around. I shake the glitter bottle again and asked the children to use their eyes to follow the glitter's path from the top of the bottle to the bottom, where it settles, and to soften or close their eyes. I led them in a mindful moment. Many children followed along. There were a handful of children who were silly or giggly, although I continued to 'invite them' and asked that they try it. Over time more children joined in the process as they began to feel and experience for themselves what it was and how it felt. We often allowed time for children to articulate their thoughts and feelings about this new experience, helping to verbalize and acknowledge what was happening to them. Here are some comments:

"When I breathe in, my body moves up. When I breathe out, my body shortens. Sometimes I leave my eyes open and sometimes I close them. When I leave my eyes open, I look at something like the eraser on the board or the red magnet people. I feel calmed and relaxed."

"It was really relaxing but it was hard to concentrate because of what happened at lunch, like I said 'I hate you' to myself. But eventually I forget about it and really enjoyed mindful moment today, right now."

"Right now I feel very calm, steady, and relaxed. I also feel very, very tired and mindful. Mindful means to be calm, steady, relaxed, and kind to things around you."

By late fall, I introduced the children to more mindfulness practices such as eating, walking, and standing. After each practice was introduced, we incorporated it into our daily routine. During snack, children would eat their snack mindfully. Some children expressed the challenge of sitting mindfully, so I created a variation of walking, I called tightrope walking. During tightrope walking, children were asked to imagine being a tightrope walker and to carefully place one foot directly in front of the other, heel to toe, and touch heel to toe for each step taken, as if walking on a tightrope. The focus was to notice the placement and sensations of their feet and notice their breathing. Children walked the perimeter of the classroom once around before entering the meeting area. When they entered, they were calm, steady, and ready for the next learning activity. Another variation of mindfulness practice was to stand mindfully in a posture I called stork standing, where the skill is to balance on one foot. This practice took concentration and focus, and also helped add variety to practicing mindfulness.

Anchor breathing is a verbal cue asking children to focus on their breathing as a home base. This is very practical and useful because it enables children to quickly reclaim their own breath and find their own stillness within. We discussed what the anchor of a boat does, which is, to keep a boat tethered to weight while the boat sways and rolls gently, yet remains in place. I asked the children to begin to breathe and that anytime their thoughts emerged, they should refocus their attention back on their breathing, placing their hand on their bellies to feel it rise with each inhalation and fall with exhalation, gently bringing the mind back to the breath. This practice is powerful because it allows children to begin their anchor breathing at any time, such as in the stairways, before a math quiz, before departing for a field trip, or during a meeting when the energy level and voices begin to rise. Children are quite responsive to anchor breathing and it helps children to regain composure and attention to the moment. Here are comments from children about the mindfulness practices of standing, walking, and eating.

"I like mindful tightrope walking because it really helps me because I'm a kind of person who can't really stand still and I really like mindful tightrope because I can move and be mindful at the same time. My breathing was like the sound of the ocean."

"I notice when you eat mindfully you really taste the food and the texture of the food. You can really change your mind if you like the food or if you don't like the food. Mindful eating makes me feel calm and relaxed."

"Tadasana (mountain pose) is a yoga pose. You can use it for mindfulness. This is what you do, stand up and put your hand out and your feet level and flat on the ground. Close your eyes. I feel so calm and quiet. Nothing is distracting me because my eyes are closed."

How was academic work impacted by mindfulness practices? One example was on a field trip to the Metropolitan Museum of Art. Children prepared their explorer notebooks in advance of our departure and had three rubric questions as guidelines to gather information, record, and sketch what they would see there. There was tremendous excitement about the trip and the chance to see the artifacts. Before we left school, we took a mindful moment and then departed with notebooks in hand. This exhibit was very crowded with wave after wave of tourists. The children were in small groups accompanied by an adult. At the museum, children listened attentively to my voice and directions to choose one out of several textiles in each room.

The children were very focused on their textiles. Each child went diligently to work, recording information and sketching the artifact, moving from gallery to gallery alongside the flow of people. I was especially impressed by children with a variety of academic needs and learning variations whose focus and attention to both the writing and drawings was superb. Overall, the drawings and descriptive writing were astounding, especially knowing the range of learning abilities among the children's various academic

and artistic skills. The drawings of many individuals were exceptionally detailed and thoughtfully drawn. What I noticed about the children on this trip was their ability to really focus and zoom in on each textile while many people around them were walking and chatting. Despite the many distractions, the children maintained extraordinary focus and concentration.

As we progressed into using mindfulness in the classroom, a surprise finding was that children at times outside of school took a mindful moment. They shared their practices with the class and how it helped them in various activities such as: before homework, during sports, before a violin or piano lesson, or when they had trouble falling asleep, lying in bed. Some children reported that they made their own glitter bottles. A few children said they had conversations with their parents about what they were learning about mindfulness in class.

Looking back at the process of my work using mindfulness with third graders has helped me discover and recognize the benefits of improving children's sense of calm and well-being. It enhanced their ability to listen actively and strengthened their ability to focus and concentrate on schoolwork and activities throughout their day. Mindfulness practices can be readily done within many moments of a school day in both a structured and spontaneous manner. I found that practicing mindfulness enhances children's ability to self-regulate and self-monitor behavior, and encourages thoughtful expressions of communications in both word and deed with peers.

Children develop a greater understanding of themselves as learners and as individuals as they grow more aware of their bodies and minds connected to the present moment. The classroom environment grows into a climate of compassion and caring for one another. Learning is enhanced and deepened, and children learn to take a moment or a breath to think before they respond, thus creating a community of more self-aware and thoughtful individuals.

Mindfulness is a powerful tool, or strategy, for children to learn, to help them cultivate the qualities of focus, concentration, perspective-taking, calm, and an overall sense of well-being. In many ways mindfulness for both teachers and students can change their way of being in school and potentially become a lifelong skill.

I Learned That A Nail Can Go Through a Bottle Cap Easily: The Buddies Program at Bank Street

By Greg David, *9/10s humanities teacher and* **Emily Linsay**, *4/5s head teacher*

On a much-anticipated spring afternoon, a class of 9/10s students gathered in the Art and Shop rooms, awaiting the arrival of their 4/5s buddies. The younger students entered cautiously, taking in the novelty of the rooms. Each buddy pair or trio would spend the next thirty minutes building a vehicle out of wood, nails, glue, and bottle caps. They would draw on the younger buddies' recent study of vehicles and the older buddies' years of experience with woodworking.

The teams quickly got to work on race cars, fire trucks, and boats, largely following the younger buddies' interests and choice of materials. The older buddies bravely held each nail upright with pliers, or demonstrated how to grip full-sized hammers. The children talked as they worked: "How would you like to attach the wheels?" the older buddies asked, or "What color should we paint the race car?" The 9/10s asked questions that their own teachers might have asked them in their own classroom.

At the end of building time, the pairs displayed their vehicles with pride. While the experience had been more of a novelty for the 4/5s, they weren't the only ones learning something new. Back in the 9/10s classroom, one child shared what she had learned from the experience: "I never knew I could put a nail through a bottle cap so easily." Who did?

The Buddies program is at its core a reflection of Bank Street's developmental-interaction approach and an extension of the classroom experience. It encourages students to become curious about their community and fosters a love of learning, allowing them to interact with others and engage in ways that strengthen their own identity and voice. It offers opportunities for integration in ways that cut across grade divisions and the larger curriculum. Students learn from each other through shared experiences, which ultimately enriches personal growth.

Bank Street College founder Lucy Sprague Mitchell asked: "What potentialities in human beings—children, teachers, and ourselves—do we want to see develop?" She answered this question by creating a credo with seven main tenets. The Buddies program aligns beautifully with at least three. First, there is the potentiality of "gentleness combined with justice in passing judgments on other human beings." Second, we aim to develop "sensitivity, not only to the external formal rights of the 'other fellow,' but to him as another human being seeking a good life through his own standards." And third, the Buddies program fosters participation in a way that helps

students discover "lively intellectual curiosities that turn the world into an exciting laboratory and keep one ever a learner." Studying alongside a diverse group of learners is vital; this is what builds community, and creates a foundation for change.

So how exactly did the Buddies program come to be? There was a thought over a decade ago that it would be beneficial for the Upper School Kids of Color (KOC) to visit Lower School classes in order to provide role models for children of color in the lower grades. This would also bring students of color and white students together. Later it was determined that all students could benefit from having buddies. So the administration, school leaders from each division, and teachers worked to develop the program.

In today's Buddies program, each classroom pairs with a classroom in another grade for the full year. The 3/4s meet with children in the Family Center. The 4/5s meet with 9/10s, the 5/6s with 10/11s, the 6/7s with 11/12s, the 7/8s with 12/13s, and the 8/9s with 13/14s. Teachers plan a range of experiences in and out of the classroom

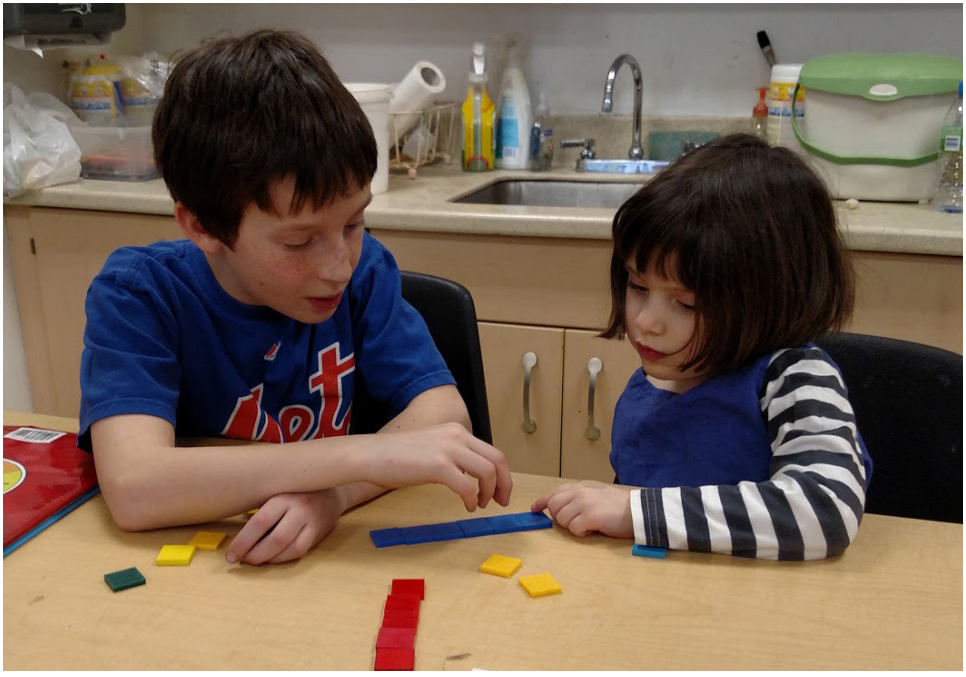
so that children have different ways to access the program and build relationships. There might be reading aloud, sketching, or art. Specialists are included in this work; children might have buddy gym, shop, Spanish, math, and science experiences together during the year. The younger buddies attend school performances by older buddies, such as Rock Band, the Egypt play, or Science Expo, an experiential science

fair. During Expo, many younger buddies visit their older buddies to see their projects. One often witnesses current and former buddy students conversing, holding hands, and learning from each other.

4/5s Perspective

Early in the school year, after the 4/5s students have become familiar with their new classroom, new teachers, and new classmates, they encounter another kind of new: buddies. Children's feelings about having 9- and 10-year-old buddies vary from curiosity and excitement to shyness and nervousness. Through the buddy program, the 4/5s practice flexible thinking, gain a wider perspective on their school, and work explicitly on developing relationships with unfamiliar people.

A week before meeting our buddy class in November, we set about preparing the group. During a morning meeting, I ask, "What is a buddy?" In the fashion of 4/5s, the conversation ranges from "a friend" to "an animal that hops" to "someone you love" and "my mom calls me buddy!" After further exploring and clarifying the meaning of "buddy," we shift the discussion to what children know about 9- and 10- year-olds. Their information includes size ("they're big!"), abilities ("they can draw"), and personal interactions ("9- and 10-year-old brothers and sisters sometimes push their younger siblings and sometimes read to them").



Once we've met our buddy class, excitement—and relief—ripples through the children. By mid-year, buddy relationships deepen. Each drawing from their buddy is a treasure. Children who were initially reticent about buddies have opened up. Our weekly buddy time becomes highly anticipated. At this point, the 4/5s comments about the 9/10s sound more like, "My buddy's name starts with S just like mine!" and a gleeful, "I just saw my buddy in the hallway!" Families regularly report that they hear a great deal about buddies. The younger children delight in the close relationships with their older buddies. Visiting their classroom up on the third floor is like going to another land. "They have big chairs and tables!" is a common observation.

At year's end, when reflecting on their buddy time, the 4/5s have said, "Buddies are so fun!" "I liked when they came to gym with us." "I liked when they did woodworking with us." "I want to see my buddy over the summer." With time, and in the care of their buddies, the 4/5s become quite taken by 9- and 10-year-olds. It always delights me to know that in a few years, these former 4/5s will take on the other side of the buddy relationship.

9/10s Perspective

Every year I am struck by how motivated the 9/10s students are by the Buddies program. There are many good reasons for this. First, the children are holding their own joyful, sweet memories of buddy experiences from their earlier years. Also, the 9/10s year is the first in which they are the older buddies, and that is just plain exciting. As one of my students this year put it, "The Buddies program teaches the older buddy how to take on more responsibility; you feel more grown up." The experience also helps children to develop trust, self-confidence, patience, and acceptance. And Buddies time regularly brings out different aspects of children's personalities that teachers may not see every day in the classroom. For instance, a child who typically is more reserved might be effusive with their buddy. A child who can be impulsive might display unusual forethought and patience with their younger buddy. By year end, it is abundantly clear how deeply the 9/10s have valued their buddy relationships and experiences.

At the end of this school year, I asked the 9/10s to reflect in whole group conversation and then in writing on their Buddies experience. There were many gems among the responses. One comment subtly reflected both deep acceptance and empathy: "I learned how to read aloud without covering the pictures." Another child wrote that the best part "is when you make the younger buddy happy." There was also repeated mention of the joy of anticipation: "I love the looks on their faces when they walk in looking for us." Many children also enjoyed teaching their younger buddies. They wrote: "You can help your buddy with mistakes," and "Taking care of someone younger is hard work but fun." Many students wrote about learning from

their younger buddies, as in the earlier example of a younger buddy teaching an older buddy how to bang a nail through a bottle cap. One 9/10 neatly summarized the program like this: "Little and bigger kids learn how to bond and make close friendships."

Graduation Memories

On a much-anticipated early summer afternoon, the 13/14s, their families, teachers, and school community gathered in the auditorium for graduation. School for Children graduations are known for being decidedly child-centric: Every student gets to make a brief presentation. Sometimes there are songs, slideshows, art, or speeches. This year, one student chose to speak about his years as a Bank Street buddy. "The dictionary defines buddy as: a friend, pal, or compatriot," Desta began, confidently. "Having a buddy is possibly the most enjoyable experience I've ever had." Desta shared memories of buddy gym, lunch, and Science Expo. "I learned a lot from my younger buddies, too," he continued. "My buddy in the 11/12s was Itai. He is very verbal and outspoken. I remember being surprised when he gave his opinion about math class with more knowledge and eloquence than I could ever muster."

Then came the most extraordinary part of the presentation, the part that had many teachers buzzing the next day: Desta invited two of his younger buddies to come share the stage with him, on this, his final experience as a Bank Street student. He handed them the microphone, asking each of them to share a memory of being his buddy. When they finished, Desta thanked them and concluded by offering up this bit of advice: "You are about to become older buddies. I want you to be nice, patient, and encourage your buddies to do well in school."

Note: The authors would like to thank Jose Guzman, Chiara Di Lello, Kayla Wong, and Desta Mutisya for their contributions to this article.

Going Green: A Parent-Teacher Collaboration

By Laura Sametz, *11/12s parent, and* **Claire Mansfield**, *6/7s head teacher*

Claire: Laura, at Bank Street we talk about collaboration a lot but not only do we talk the talk, we walk the walk. Our recent collaboration around sustainability, how it came about and how it evolved, is a wonderful example and was an important part of our curriculum. To make sure that we can do it again, let's review our process.

Laura: Claire, I would love to do it again! But, we need to go back to the beginning.

Claire: First, there was a school-wide push to do more recycling. You and members of the Parents Association's Green Action Committee helped implement that. More and different recycling bins were introduced to the whole school and to each classroom.

Laura: I was a new parent to Bank Street moving from a school where I had created a Cafeteria Composting Pilot with several other parents. The NYC Sanitation Department rolled our compost pilot program to other schools, starting on the Upper West Side. They eventually incorporated hundreds of schools in Manhattan and Brooklyn. When my son entered Bank Street, the school had quite a successful recycling program but had yet to venture into composting. I reached out to the Department of Sanitation to see if we could be added to the compost pick up. With the support of the administration and teachers, we began a program in the Cafeteria, 6/7 classrooms, and in the Upper School classrooms.

Claire: You came to my classroom with posters that explained what needed to go into each bin.

Laura: And, this is how our collaboration began. The children in your classroom asked wonderful questions. I showed them the source separation posters and we discussed and practiced what went into which bin. I brought in different items for them to practice with. Your children had so many questions about where waste goes. Landfills were a particular curiosity to the children, and you had me come back and visit a number of times (which I loved). The children asked the questions that I only wish had been asked decades ago. Perhaps our planet wouldn't be covered in landfills.

Claire: Children really care about the environment. I especially appreciated the way you told us that none of us are perfect and it's alright if we don't always remember

what goes where for recycling. You helped us feel not too guilty about what we don't do and good about what we manage to do, while inspiring us to do better.

Laura: So many people don't know where to begin or think they will not make an impact so why even try? Even the smallest effort counts and inspires others. I think the shoe drive (a partnership with Wearable Collections) reinforced the idea of re-use and recycle and also inspired the community. The shoes that were still wearable were given away and the ones too worn were given to a company that makes playground surfaces.

Claire: The 6/7s students participate in several community service projects each year, including collections for books, food, and toiletry items. The students take responsibility for decorating boxes and creating signs to go around the school for collections and the 6/7s parents help the students collect and pack the collections.

Laura: Do you remember how excited the students were to receive a check for the shoes they collected?

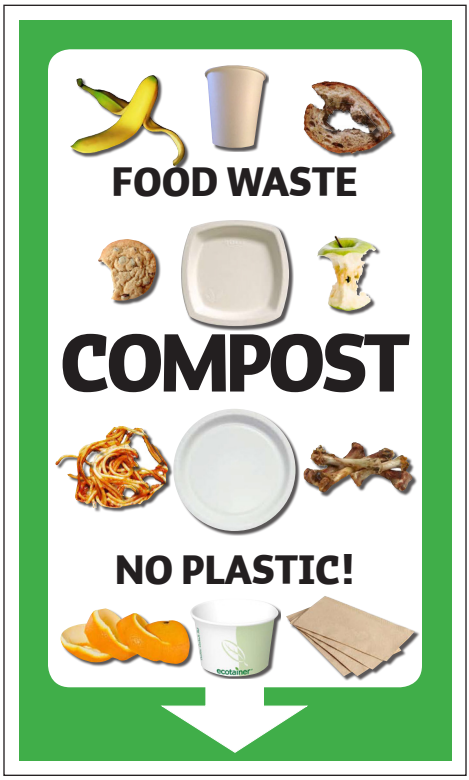
Claire: We didn't know that we would get 10 cents for each pair of shoes! That check led to several math lessons. We couldn't remember how many shoes we had collected, so we worked out how many sets of 10 cents were in the total amount to get to the answer. Then the students thought long and hard about what we should do with the money. They ultimately decided to buy food items for the next community service project, which meant making decisions about what food to buy and how much could be bought with the money. A group of students went to Westside Supermarket to buy the food to donate.

Laura: What a great cycle.

Claire: Laura, you've already noted how the children had a lot of questions about where waste goes, which included questions about food waste specifically. José Guzman, our science specialist, and Jenny Ingber, who heads up the Kerlin Institute, helped us build on this curiosity. They suggested a study of red wiggler worms, which are used to compost food. Together with my assistant teacher, Janel Frazier, we planned a series of lessons, beginning with building a habitat for the worms that José and Jenny brought to our classroom. Our art teacher, Maria Richa, joined us to help teach the children to tear newspaper into strips for the worm composting box.

One of our first lessons had the students working in pairs, using their senses to explore the red wiggler worms. Over time, the students' observations became more and more detailed. Their first observations included: "My worm was hard to pick up because it

was slimy." "I smelled it and it didn't smell like anything." "My worm jumped, it did a flip." "The worm goes in and out to move." "Looking through the magnifying glass, the worms looked bigger." Later observations included: "They have a head, but no eyes." "They twitch." "They don't have legs." "It looks like a bandage around them." "They curl up into a ball." "They have rings of a tannish color."



One of the colorful cafeteria posters

After several lessons learning about red wiggler worms, a culminating activity was making a class book about what had been learned. Each student made a page and we sorted the pages into chapters. Chapter 1, called the Observation Group, included: "When they move, they stretch and get thin and then they get fat." "They get tangled a lot because they don't know where to go." In Chapter 2, called How Do Worms Live, students wrote: "They need moist earth." "They go underground and come out when it's warm and wet." "To live they need a shady place." Chapter 3, called, Food and Water, included "They help us recycle food." "They drink water from the roots." "Red wiggler worms like to eat fruits and vegetables." "Red wiggler worms eat twice their body weight every day." Chapter 4 was called, Things that Red Wiggler worms Do Have and Don't Have: "Red wiggler worms have body parts called segments and clitellum." "Red wiggler worms have bristles which are like legs." "All worms are blind and have no eyes and no ears." "Red wiggler worms poop out stuff that looks like dirt."

Laura: That classroom book really captured their learning about the worms. What did you do with the compost they made?

Claire: The 6/7s students helped the 4/5s students use it with planting on the school deck.

Laura: The cycle of learning continues. Next you went to the composting center on Governor's Island. How did that come about?

Claire: Another parent, Mary Pat Draddy, told me about it. The name of the center is Earth Matters Compost Learning Center. It was a particularly special class trip because Mary Pat had her sister-in-law, who is associated with the center, come with us. We went by bus and ferry to Governor's Island. We had about two hours there, learning to be compost operators. At the center, we learned how to make chicken compost, culminating in using the chicken compost for planting. We were also allowed to collect eggs from the chickens to take back to school which, after lots of discussion, were used to make French toast for a classroom snack.

Claire: You mentioned that the Family Center, Lower and Upper Schools here at Bank Street also participate in this work in sustainability. For example, in the first week of the school year, students in my class who had just come from the Lower School chose to make posters for the classroom with the message, "Take Care of Our Earth," which served as reminders to us all. Our class compost bin is continually used and at lunch time it's the students who remember we need to pick up the big food compost bin. Next year, I will try and connect with our older buddy class to see if we can work together on a sustainability project. Laura, what could you see as next steps?

Laura: Well, first, thanks to all who have done and are doing so much to make Bank Street a greener place. For example, have you noticed that the soap in the classrooms has been changed to a greener make? The amazing maintenance department is also experimenting with other disinfecting green products throughout the school.

One of the next steps is to take what we have done building-wide. For example, there needs to be an assessment done of what classrooms and offices in the Graduate School have recycling bins. I think there has been progress but a lot of paper and plastics are not making it into recycling bins yet. Also, we need to find a way to help graduate students use recycling and composting bins when they come to classes in the afternoon and evening. The kids making signs as reminders might be a great beginning.

For the School for Children, a good next step would be to focus more on the conservation and recycling of paper. The school has done an excellent job with far more digital communication, but schools use a lot of paper and the paper needs to get into the designated bins. Perhaps there could be a project for the students where they collect data and graph it and share with the maintenance department.

Claire: We will get José, our math-science coordinator, to spearhead that.

Laura: Also, there is a company called Terracycle that recycles used school supplies, such as pens and tape dispensers and more. Would you like your class to pilot a project next year?

Claire: Yes!

Laura: Last year, Maria, our art teacher, made a mobile out of keys as the backdrop for Winterfest to encourage re-use. I was wondering if this year a class could do a sculpture, using recycled and/or reusable objects found around school, and make a sign saying, "Did you recycle today?"

Also, maybe it's time to create another play. The 9/10s performed a play in Middle School morning meeting when we began the composting program to show their peers what to do. Habitual patterns of throwing away garbage are always hard to change. Nothing better than children teaching grown-ups! I learn every day from my son.

Claire: I agree, nothing better than children teaching grown-ups! It's an authentic way of showing what they have learned. Also, here at Bank Street, we place a lot of value on teaching children how to collaborate on projects. I love that we are modeling how to do that.

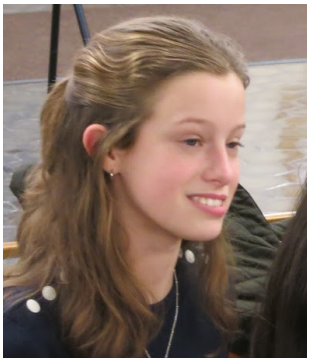
Laura: Going Green is also a good example of our school's commitment to social justice, as well as the collaboration on projects you spoke of. In my understanding of sustainability for our planet, it is imperative for us to think of each other and our environment, to continue to work together as a community to make our schools as green and unwasteful an environment as we can. It is crucial for the children to continue to learn about their impact on their community. This is one of the seeds of social justice, is it not? And you know me, if we can inspire persuasive essays from the kids aimed at waking up heads of corporations, advocating for someone else, in this case the next generation, all the better. Preserving our environment and sustaining the planet are economically wise. And I don't believe you can separate social justice from economics. Maybe that is too large a concept for the younger children yet to grasp, but we certainly can plant the seeds of environmental stewardship.

The Last Word

By Irene Loewenson, *Bank Street School for Children, Class of 2014 and The Brearley School, Class of 2018*

When adults make conversation with a student, they ask the same questions in the same order: "What grade are you in?" "Where do you go to school?" and "What's your favorite subject?" The first two are easy. But when I respond to the third question with "math," people raise their eyebrows.

You can almost hear their thoughts. "Oh," they think. "She's one of the boring ones, eh?" But that's not fair. Bank Street has made math fun. One common theme of math through the years is that it is taught through projects where you get some choice in the matter. You can draw a proportional baseball diamond, create a school menu by quadrupling recipes, or make a probability board game. Another common theme of my experience with these projects is that mine were usually about reality television.



Irene Lowewenson

Math and reality television are two very different types of interests, you may think. How can they possibly be complementary? [point to 5th grade math project entitled *Runway of Tears*] That was my final project for 5th grade math. I investigated one hard-hitting question: Do the number of episodes a contestant survives on *America's Next Top Model* have a relationship to the number of times she cries? I learned about correlation vs. causation, graphing, statistics, and data analysis. And in case you're curious, the people who lasted the longest were the outliers: the ones who cried the least and the ones who cried the most.

Over the years, this reality television mathematics has become a tradition for me. I learned about scale factor by drawing the Mini Mardashians—no relation to the Kardashians, so you can't sue me. My spinner for 6th grade's Casino Day was also Top-Model based.

Recently, I did another Kardashian project for school. And my mother suggested to me that, maybe, this would be the last time I did such a thing. After all, she said, in high school, teachers would be less impressed, and I should make the most of this happiness while I still could. She's right. I know that even without the reality television aspect next year, math will be my favorite subject. It's enjoyable. It's satisfying and clear.

I have Bank Street to thank for helping me discover that.

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