

Marvelous Math Club as a Catalyst for Asset- and Justice-based Thinking and Practices

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Marvelous Math Club is an afterschool club initiated through requests from an Asheville Housing Authority community. Asheville City Schools, the University of North Carolina Asheville, and Asheville Housing Authority partnered to make Marvelous Math Club a reality. The Club uses a unique model that integrates math and psychology, centers the experiences of the students, parents, and guardians in this predominantly Black community, and celebrates its elementary-age students (Math Leaders). The Club creates a space where Math Leaders feel safe physically and emotionally. Leaders and community members partner in this evolving strategy of asset- and justice-based thinking and practices. The approach is supported by sociological ideas: labeling theory, the long-term impact of building self-integrity, and creating culturally responsive spaces for learning.

Keywords: STEM education, afterschool, Public housing, elementary education, early childhood education, math, labeling theory, racial equity, the achievement gap.

Starting Marvelous Math Club

Asheville is a small city of 90,000 in western North Carolina, nestled in the Appalachian Mountains. The population is about 11% Black and 6% Latine. The Asheville City School (ACS) system has the fifth largest racial academic gap in the United States (Reardon et al., 2017). The Asheville Housing Authority oversees eight rental assistance properties, including Pisgah View Apartments (PVA).

The seeds for Marvelous Math Club (MMC) were planted in the late fall of 2015 when several parents at PVA asked Dr. Kaplan for a math presence to support the children living there. Dr. Kaplan, a faculty member in the Department of Math and Statistics at the University of North Carolina Asheville (UNCA), tapped into funds set aside for math outreach. Two undergraduates provided “free math help” at the PVA Community Center. Both undergraduates were veteran tutors for the Math Lab, a drop-in math support center at UNCA.

Meanwhile, Ms. Alcalá-Williams, who, at that time, served as the ACS Parent/Family Engagement Coordinator, polled parents across PVA to gauge interest in math support. The poll identified which student age-range residents wanted support to prioritize and determined the preferred day and time for that support. There was high interest among parents for math support with a focus on elementary students. Monday afternoons, right after school, were chosen because students came home Mondays with a homework packet for the whole week.

Starting in late January 2016, on Monday afternoons, a large sign went up in front of the PVA Community Center: Free Help with Math Homework.

Integrating Math and Psychology

For the first few months of the experiment in math support, each Monday, a few students would drop in, complete their homework, and then leave. They might ask a few questions if they got stuck. In total, two to five students dropped in each week and twenty different students came to free math help at least once by the end of the academic year.

These numbers fell far short of the level of interest indicated by the community poll. Ms. Alcalá-Williams called a session with the undergraduates and Dr. Kaplan to inquire how the effort was being run. One of her first questions asked was: how was it being advertised? Free math help, she pointed out, was a great way to attract undergraduates who have little money to spare and may be experiencing challenges in a math class. However, she continued, if you are a Black elementary school student, and have internalized a narrative that says “*You are the gap*, you are the problem” then the phrase “Free Math Help” sounds like more of the same deficit message.

Who wants to be the gap? Who wants to be the problem?

So the team brainstormed: How can we inspire students to want to be there every week? How can we get beyond the harmful narrative of who “needs help” because they are the “gap”? The team reasoned that if children are members of a club, then they attend the regular club meetings. There was a community request to focus on math, so it had to be a “math club.” The team explored many modifiers for this math club and settled on Marvelous Math Club.

When we started Marvelous Math Club, our intention, in addition to supporting math education, was to transform narratives around race, academic success, identity, and cultural awareness. While our efforts were not a direct response to the seminal work of Dr. Ladson-Billings on teaching Black children, we were influenced by the same questions of authenticity, culturally responsive ways of engaging, and moving away from systems of hierarchy and power that perpetuate a narrative of Black children as the “problem” in schools (Ladson-Billings, 2009). We also began to consciously address the narratives of who does math, who is good at math, and where math learning takes place. Marvelous Math Club became a healthy partnership of math and psychology with a racial equity lens.

We intentionally chose names rooted in positive self-identity for various club roles. Members of MMC were not called “members” or “students” or “kids,” but *Math Leaders*. And the adults were not called “staff” or “volunteers” or “tutors,” but *Math Champions*. The focus of MMC was not remediation, but building community, making friends, and celebrating math.

What Developed

In the fall of 2016, Marvelous Math Club began anew, this time with its new name. We handed out fliers on school busses and went door-to-door around PVA. Close to Halloween (with a promise of candy and showing off costumes), we started to get a small but regular group of six Math Leaders. We also had three undergraduates and the authors attending every week as Math Champions.

There was no fee to join, no requirement to attend every week, no paperwork to sign. Math Champions were not in the role of *in loco parentis*⁷²; Asheville Housing Authority made space at PVA for MMC, so residents could come and go at will, including children and family members. Math Leaders could head home early if they desired. That said, adults did accompany younger ones home. Math Leaders who attended usually stayed the entire meeting. Because MMC was held at PVA where the Math Leaders lived, we, the Math Champions, were guests of the residents of the community.

At the end of every session was a Sharing Circle, where Math Leaders and Math Champions sat in a together to talk about the day. Math Leaders, one at a time, shared how they demonstrated leadership that day. Others were invited to add instances of how that Math Leader demonstrated leadership, as well. Then, everyone clapped for that Math Leader. Once all the Math Leaders had shared and been celebrated, they packed up and headed home.

When the Math Leaders were safely home, the Math Champions made a new circle and reviewed the day, asking both what went well and where there were opportunities for growth. This process of weekly reflection and brainstorming invited innovation and evolution. Math Champions then reviewed what each Math Leader did that day. This included homework, math games, and enrichment activities. The information was then communicated with each Math Leader's teacher by email. Teachers sometimes replied with confirmation of our observations and feedback related to how time at Marvelous Math Club had positively impacted a Math Leader in the class. The debrief was instrumental to the development of MMC and continues to be our practice.

Over time, we added principles of self-care, because we believe leaders learn to care for themselves in order to stay effective. For example, asking the Math Leader if they are ready to engage in math and, if the Leader wants to run, sing, draw, etc. before engaging with math and homework completion, we honor their choice to do so. If a Math Leader is exhausted and requires rest, we encourage them to go home and nap and return later if they feel ready to engage in math play. At times, self-care might look like a Math Leader coming by the Community Center for a hello, a hug, and a promise to see us next Monday—they're going out to dinner with grandma. We, as Math Champions, welcomed all the different ways that a Math Leader chooses to express self-care. And as Math Champions, we modeled that self-care as well.⁷³

Over the first year of MMC, more and more Math Leaders joined. By the second year, we had to start recruiting and training additional Math Champions. Our numbers continued to grow. Just before the pandemic sent everyone to stay at home, we regularly had thirty-five to forty Math Leaders get off the school bus and walk to the Community Center to celebrate math for two hours. They would be met at the Community Center by fifteen to twenty Math Champions who were excited to be there. Math Champions include UNCA students, community college students,

⁷² Latin for “in place of parents,” the principal of *in loco parentis* means a person or organization taking on the legal role or responsibility for the safety of a child.

⁷³ The authors are amazed that after we began to use the term “self-care” with so much intention around honoring our bodies and emotions, that the term has blossomed in main-stream culture with a 30% increase in use in books and more than doubling its presence on the internet since 2015 (Google, 2021). However, to the authors, with alarming frequency, the term is now used to perpetuate harm, replacing the goal of numbing ourselves rather than seeking well-being. The authors have also observed managers who now advise self-care to workers to obviate their own guilt for assigning impossible workloads.

high school students, residents of PVA, retirees, professionals from the community, and middle school students who had once been Math Leaders.

No One Gets Kicked Out of Marvelous Math Club

Once of our founding maxims was that “no one gets kicked out of MMC.” This was the opposite of the experiences of the Math Leaders at school (where there were special rooms for students who had been kicked out of class) and the opposite of after-school programs, even other ones at PVA, that did kick students out for “bad behavior.” The concept that no one gets kicked out meant that if there was friction between Math Leaders, we had to pause and practice communicating and working through conflict with care and inquiry.

Communicating emotions and learning to diffuse a volatile situation are important skills to develop at this age. When friction does arise and one Math Leader engages in — not the most beautiful way — with another Math Leader, we respond with dialogue like, “Whoa, whoa! What’s going on? Let’s talk this out. One at a time. Because you both matter, we want to hear both sides of the story. Take a couple of deep breaths, and together we will figure out a positive outcome. That is what we do as a Marvelous Math Club family. And it is important for us to understand how to work things out for a positive outcome in order for us not to be seen as ‘the troublemakers.’”

Once Math Leaders learned to diffuse conflict and negotiate solutions, visits to the office became less frequent. It has been beautiful to witness Math Leaders create responses like “That hurt my feelings. I didn’t like the way that you spoke to me. Could you please speak to me differently?”

Addressing conflicts as they arise, rather than simply banning conflict, allows us to reframe conflict as a learning experience. In addition, repressing negative emotions from a difficult day at school makes it challenging for Math Leaders to focus on learning. In our experience, for a Math Leader to fully engage with math, we must first validate any Math Leader who is experiencing frustration, anger, sadness, or exhaustion.

Welcome to a Marvelous Math Club Meeting

The following scenario is typical of what a Marvelous Math Club meeting looks like from the perspective of a Math Leader. The interactions depicted reflect actual events, though not all from the same meeting or the same Math Leader. Rather, the goal is to display to the reader how the various facets and goals of MMC link and overlap.

Scene: PVA Community Center

Persons: Math Champion-Mr. Jones. Math Leader-Lachelle. Sharing Circle Leader-Ms. Yaz. Math Leader-Raymond.

[Math Leaders get off the school bus at PVA and enter the Community Center. Math Champions are standing at the door, ready to greet them. High energy music is playing. In the foyer are photographs of Math Leaders smiling, holding up awards, and posing with Math Champions.]

ASIDE: It is important to create a welcoming space with people, images, and music that say, “you belong.” We also immediately set the tone for what we do at MMC.

Mr. Jones: So great to see you! Are you ready to do some math today?

Lachelle: Yes.

[High five.]

Mr. Jones: Sign in. Get your name tag. Go to Janelle and get a snack.

[Lachelle does so and takes her snack to a table in the main room of the Community Center. There are tubs with markers, blocks, dice, paper, books, and blank cards on each table.]

Mr. Jones: Do you have homework today?

Lachelle: [pausing from snack] Yes. But I don't want to do homework first.

Mr. Jones: What would you like to do instead?

Lachelle: I'd like to make a card for my mom.

Mr. Jones: Great! Let's check in in about five or ten minutes; you can show me the card. I'd love to see what you make for your mom. And then we can get going on homework. Does that sound okay?

Lachelle: [nods and eats.]

Mr. Jones: How was school today? Did anything happen that was not so good?

Lachelle: I was a little sad because I wanted to get this book at the library. But I had been talking too much in the classroom so I didn't get a pass to go get it.

Mr. Jones: That sounds pretty sad. I'm glad that you still chose to come to MMC today. And did anything good happen today?

Lachelle: Yes, I was so excited to bring a new friend to MMC because she didn't know anything about it. And so I brought her and she's going to come in soon. She's on bus 137.

ASIDE: Simply asking about something negative and then something positive from the Math Leader's day is an easy way to check in with the emotional state of the Math Leader. It is not our job as Math Champions to "fix" a situation. Rather, we validate the Math Leader and what they are feeling. Most of the time, this exercise is enough for a Math Leader to be able to focus on homework later.

Mr. Jones: We will be on the lookout for your friend when she comes in. Maybe you can support her with signing in and showing her the ropes of getting her snack. If she keeps attending, we'll get her a name tag ordered.

Lachelle: And does that earn me a T-shirt? Do I get a prize?

ASIDE: When a Math Leader brings a guest or exhibits exceptional leadership, they get a sticker on a wall chart. Five stickers earn a prize such as a book, game, puzzle, T-shirt, etc.

Mr. Jones: Yes, that's another sticker on the leadership chart! Once you have five stickers, you get a prize. You can choose a T-shirt as your prize if you like.

[Mr. Jones leaves to welcome other Math Leaders. He returns a few minutes later.]

Lachelle: Ok, Mr. Jones, I'm done with my card. I guess it's time for homework now.

Mr. Jones: Great! And I love the card! Your mom will be really pleased. Who would you like to be your Math Champion today?

Lachelle: I pick you, Mr. Jones.

Mr. Jones: Let's go then. Bring your work. Let's sit down here.

[They move to a smaller study room inside the Community Center. Lachelle takes out her worksheet. There are pencils, paper, a small marker board, and markers in the middle of the desk.]

Lachelle: So I think I know how to do it by myself. But there are two parts that I don't really understand. And I don't think the teacher explained it well. So could you tell me how to do those two?

Mr. Jones: Well, why don't we go through it? Have you done something like this before?

ASIDE: Math Champions are trained to invite Math Leaders into conversation about their thinking process rather than answering a question or giving a demonstration. Inviting the Math Leader to acknowledge what they understand and consider how to apply previous experience enhances the development of executive function. (Roditi & Steinberg, 2011)

Lachelle: I don't think so.

Mr. Jones: Can you read it to me? [Lachelle reads the question.] Oh, I haven't ever seen something quite like that. Can you explain it to me?

Lachelle: Yeah. Yeah. Well, he says something like, when you put this number [pointing], you put it at the bottom. I'm not sure.

Mr. Jones: Let's see if it makes more sense when we get to that one. Why don't we start with something on this first page that you really know how to do well.

[Mr. Jones and Lachelle continue working. Then she gets to the question that she first asked about.]

Lachelle: Oh, it's like a different way to do number two.

Mr. Jones: Yes, that's clever of you. Do you want to try it?

[Lachelle rewrites the question and finishes it.]

Mr. Jones: That is excellent! Can you explain to me how to do it? This whole idea was new to me when we first sat down.

Lachelle: So what I didn't know is because the question had words in it... and I guess a story, that it was still saying that I needed to add seven plus three. Right?

Mr. Jones: Right. [He and Lachelle give each other a high five.]

Lachelle: And the first questions on the worksheet just had the two numbers, and one number was on top of the other, and then for other ones the numbers were side by side. And I know how to do both of those. And then the one we just did had the number line and it had the words and I didn't know if it was asking me to add or subtract.

Mr. Jones: And how did you decide?

Lachelle: Because this is there [pointing to the text], and then you got three more. Okay. And that sounds like getting more means that you're adding.

Mr. Jones: Cool. I liked your explanation. Do you want to explain it again, but this time, we could make it a little video and send it to your teacher? Would that be comfortable for you? High five!

ASIDE: Allowing Math Leaders to choose their own Math Champion and give consent to do things like record a video strengthens their sense of self, autonomy, and self-responsibility, as well as enhancing mutual respect with Math Champions.

[They make a one-minute video which Mr. Jones texts to the teacher.]

Mr. Jones: What else would you like to do?

Lachelle: Play. Maybe listen to music on YouTube...

Mr. Jones: Well, you may watch videos. And could you still engage in some mathematics?

Lachelle: Oh, yes. I'll play a math game on iReady.

ASIDE: iReady is an ACS site that allows teachers to post assignments and link to games in any subject.

Mr. Jones: Do you want your headphones so you can listen without disrupting what anybody else is doing?

[Thirty minutes before the end of the meeting, all of the Math Leaders and Math Champions gather in the main room of the Community Center and get in a large circle. Math Leaders share, one at a time, how they demonstrated leadership that day. There are a few parents and grandparents in the main room during Sharing. They are there to pick up their loved ones, but they also get to hear how peers and adults in the room hold that child in high esteem. Then it is Lachelle's turn. She moves and sits in the chair at the center of the circle.]

Ms. Yaz: Lachelle, how did you demonstrate leadership today?

Lachelle: I demonstrated leadership today because I came straight from the bus to Marvelous Math Club and I was ready to do math. And I got my name tag and I got my snacks and I sat at a table. And I wasn't ready to do homework right there and then, and I wanted to make a card for my mom. So I did that. And then I chose Mr. Jones to be my Math Champion. And I showed him a card I made for my mom. And then we did some math. And I didn't understand all of the math. But then when we were working together, I was able to do it. And then I got to explain it to Mr. Jones and even he did not know how to do it at first. And then I finished everything. And I put all my stuff away. Oh, and I invited a friend to come to Marvelous Math Club. So I believe that gives me a sticker and gets me closer to a T-shirt. I get a sticker because of demonstrating leadership.

Mr. Jones: You demonstrated leadership today, Lachelle. When you arrived at Marvelous Math Club, you noticed how you were feeling and that you really wanted to

do something special for your mom. And you took care of that first. Then you could focus on doing some of your math work. You had some questions about how to do some of the worksheets. And by focusing on things you knew how to do first, by the time you got to the question, you suddenly understood how to do it. That persistence is amazing! You didn't give up right away. You said hey, let me do what I can do. And then when you were done, and there was still time, you really wanted to listen to music. Now, you could be in your room in your home just listening to music. You don't have to be here. And because you are here you were listening to music and doing some math games on iReady.

Ms. Yaz: Whoo everybody! Can we give her some snaps? Yesss!

Mr. Jones: And you are so excited about sharing Marvelous Math Club that you brought a friend. When she arrived, you made sure she got a snack and a Math Champion of her own. We will hear from her later about how her day went. What a good friend you are!

Ms. Yaz: Who else saw Lachelle demonstrating leadership?

[Raymond, a Math Leader, raises his hand. Ms. Yaz calls on him.]

Raymond: I really appreciated it when you shared some markers with me. And you made a flower for me like the one you drew on your mom's card. That was so nice of you to share. What a good friend.

[Several Math Leaders and Math Champions make additional comments.]

Ms. Yaz: Alright! Great work, Lachelle! Such leadership! Let's all clap!

[Everyone claps! Lachelle moves from the center of the circle back to her seat. Another Math Leader takes her place in the center and we start again.]

The Debrief

After the Sharing Circle, we say our goodbyes and “see you next Monday,” and the Math Leaders return home. Math Champions escort little ones home. The rest of us organize and clean the room and make the circle a little smaller since there are just the Math Champions, now.

We discuss what went really well today. Where did we bring in our magic? What were some beautiful moments? Then we talk about growth. Where do we see areas of growth for ourselves, both individually and as a club? We invite other Math Champions to support us with their own insight. Maybe someone can offer an idea or experience that we have not yet considered. Are there changes in process or language that can make Marvelous Math Club even more special, add new magic? Then, the Math Champions head out. From the time they arrive until the time they finish with the debrief, Math Champions have spent three to five hours with Marvelous Math Club that day.

Between Meetings

After the debrief, Marvelous Math Club staff take note of what each Math Leader accomplished during the meeting, of new ideas from the debrief, and check inventory of materials. Between meetings, they are responsible for contacting each Math Leader's teacher with a report, possibly accompanied by a photograph or video of the Math Leader. They contact all of the Math Champions, summarizing ideas we will try out at the next meeting. They make sure

arrangements are in place for materials and food for the next week's meeting. Finally, they send out summaries of activity to stakeholders at the partnering organizations, Asheville Housing Authority, ACS, and UNCA.

Magic

At MMC, we use the word “magic” as shorthand for the personal and community growth that occurs through communication, persistence, imagination, and love. The reason we know MMC is magical is that Math Leaders do not have to sign up. They are not required to attend by a teacher or parent. A child chooses to become a Math Leader, not as a consequence of remediation or struggling with math, but because they want to be a part of something really beautiful and special.

Part of the magic is that MMC is set up to eliminate barriers—barriers of transportation, barriers of money, barriers of paperwork. By having MMC at the PVA Community Center, we meet where the Math Leaders live. The non-resident Math Champions are guests of the community. Math Champions are not there to “fix” the children or “remediate” or even “teach.” Math Champions and Math Leaders learn together and make magic happen all the time.

Qualitative Impact

At the beginning, Dr. Kaplan was uncertain how this new model would affect students. He was familiar only with math support in a professor's office, one-on-one tutoring, or the UNCA drop-in tutoring center. However, he trusted Ms. Alcalá-Williams. She anticipated that creating a safe space that centers Black students, fosters leadership, uses asset-based (positive) language, provides hands-on engagement, and celebrates math and learning would change everything. The connection of a positive academic impact from learning in a safe space has been supported in the research literature (Cohen, 2006; Noguera, 2008).

Within a few weeks of starting, teachers began telling Ms. Alcalá-Williams stories about Math Leaders. How one Math Leader no longer hid under the desk when it was time for math. Another Leader approached his teacher in his button up shirt and asked if he looked like a leader. She responded, “yes, you do.” He said, “Great, because I'm a Leader at Marvelous Math Club, and I want to be one here, too!”

A teacher told Ms. Alcalá-Williams about a Math Leader quietly encouraging another Leader who had given up on a math worksheet. The teacher was astonished that the student who had given up resumed work and finished the task. When asked about the incident by Ms. Alcalá-Williams, the first Leader said, “Duh Miss Marta, I pay attention. At Marvelous Math Club, we support each other!”

In addition to dozens of stories of how MMC impacted the Math Leaders, we learned that some teachers began shifting how they saw their own students. For example, one teacher, upon seeing a video of one of their students supporting a younger Math Leader with homework, said aloud, “I never knew _____ was even interested in learning!”

Math Champions were also impacted by the approach of MMC. Some had never even thought about self-care and realized they, too, could benefit from tending to their physical and emotional health. Two-thirds of our Champions live in White bodies. For some of them, it was the first time they had proximity to Black communities or anyone experiencing poverty. Most expressed gratitude for the opportunity to be in this “magical” space, and the transformation they experienced in witnessing the support that MMC offers to prepare them to be a valuable Math

Champion. The famous lawyer and racial equity activist, Bryan Stevenson says that the first step to making change is proximity (2019, p.17).

Math and Emotion

Math is often taught as if, through appropriate demonstration, a student will acquire an understanding of the material. Even with additional pedagogical depth, one aspect of learning often ignored is the emotional connection or response to material. Research on the emotional context of learning, especially in math, is still somewhat nascent. However, the limbic system of the brain picks up emotional cues and non-verbal expectations of a teacher. If a teacher is not excited about math or does not believe a certain student can learn, that context impacts the student's ability to develop and embody class content (Hinton et al., 2008).

By celebrating math at MMC, the Math Leaders associate math with fun, friendship, and community. Math Leaders practice supporting one another. This creates an expectation that the Math Leaders can seek support if they are challenges barriers with math and provide support to others who are experiencing difficulty in understanding material.

Practicing math skills for MMC is not limited to worksheets or doing two-digit multiplication at a chalkboard. Infusing math into every activity at MMC often requires creativity. For example, on the playground, a Leader doing hand-over-hand on the monkey bars can be asked to count the bars by twos or threes. Skip counting is a useful precursor to multiplication skills. On the basketball court, with a little sidewalk chalk, Leaders write numbers and put a circle around each of them. A shot made from a circle would earn that many points for a player. Depending on the age of the Leader, they could add or multiply their scores for a total. Students practicing keyboard skills (which some grades require), keep track of their speed over time. Two Leaders might go around the building with a survey question and interview other Math Leaders about their favorite ice cream, for example. They collect the data on a large marker board and then make a pie chart or bar graph to share the results. We might have a group of students assemble a large floor puzzle and time them from start to completion. Then try again and see if they can be faster—and if so, how much faster? We have found that math can be added to any activity. We also invite the Math Leaders to share other ways we could enhance any activity with even more math skills and math questions.

Labeling Theory

Since the inception of MMC, we have consistently explored language, focusing on how the language we practice builds deep relationships of reciprocity and mutuality between Math Leaders and Math Champions. We listen to PVA community members about what they associate with certain words. Terms like “project,” “program,” and “help” carry a negative connotation in the PVA community that a non-resident might not have predicted. Labeling theory—the idea that when a label is used for an individual repeatedly, that person then chooses behaviors that reinforce the label—supports our practice of identifying terms with a harmful context in the community and replacing them with terms that carry the potential for growth in being seen, recognized, honored, and valued.

Historically, labeling theory research focuses on negative, demeaning labels and how children and adults will sometimes change behavior in order to fit the (negative) labels assigned to them by authority figures (Matza, 1969). We practice using labels focused on actions that motivate Math Leaders to move forward in positive ways. By calling members of MMC “Math Leaders,” we open the door for children to see themselves as leaders. During the Sharing Circle, we ask them directly how they have demonstrated leadership, inviting them to reflect on their own choices. This is in contrast to “what did you do well” or “how were you a ‘bad student’ today.”

And during the Sharing Circle, when we ask everyone else how a certain Math Leader demonstrated leadership, we are practicing looking for leadership qualities in others.

The term Math Champion, initially, was conceived in contrast to Math Leader and to indicate someone who excelled in math (although this is not a requirement to be a Math Champion). Over time, the actions of the Math Champions included a second meaning of champion, showing up as celebrants for the Math Leaders in the community and in school.

Asset- and Justice-Based Thinking and Practices

The attention to language led to a long list of word substitutes, from deficit-based thinking that highlights a problem, to asset- and justice-based thinking that amplifies strengths and addresses language that perpetuates injustice. For example, “help” elicits a sense of inadequacy, while “support” offers extra effort to add to what is already being exerted. “Can I support you with homework?” has a very different connotation than “Let me help you.” In the former case, the Math Leader is assumed to be capable of homework and responsible for its completion. Support is offered, but not required. And if support is desired, the Math Leader is in a position to dictate what support they want. The latter case assumes that the Math Leader is unable to do the homework without the Champion; that extra help is necessary for them to be okay.

Words like “project” and “program” are unwelcome to many in the PVA community. Public housing is often referred to as “the projects,” referencing the project of providing temporary inexpensive housing for families to move into the middle class. Yet many residents have been living there since the early '60s. PVA also has a history of being a site for one non-profit program after another that was supposed to “fix” something in the community. After a year or two, such “projects” or “programs” took some feel-good photos, spent grant money on its own staff (with little to no money going into the community), and then disappeared from PVA. The last thing families at PVA wanted was another “program.”

Although we generated many meaningful substitutions to shift our own vocabulary to an asset-based word list, we quickly learned that just saying new words while continuing the same attitudes also continued to cause harm. We even observed that some teachers had weaponized the terms from MMC to shame or punish students. Ms. Alcalá-Williams heard phrases such as, “I thought you were supposed to be a leader! What’s wrong with you?”

In an effort to extend beyond a vocabulary list, we learned to emphasize to Math Champions how important it is to *embody* asset-based language. We now talk about asset and justice-based *thinking and practices*. The “thinking” invites us to reflect on the words we say before we say them. Does a certain word cause harm or does it support growth? If a word has a negative connotation, the invitation is to reflect on: *What are we really trying to say? What words express our intention to be in relationship with one another, to bring out the best in one another?* The “practice” is the work of shifting our habits towards ones that ignite the brilliance in others.

An important development during the 2020-2021 academic year was the creation of learning pods for students attending virtual classes at ACS, including one pod at PVA. With the financial support of Dogwood Health Trust, author Marta Alcalá-Williams, along with local educator Ashley Cooper, high school student Miranda Williams, and UNCA Professor Dr. Tiece Ruffin wrote a booklet, *REGAL: Relevant Education Grows All Learners*. *REGAL* is a resource for educators to create a positive learning environment in a pod or classroom. It incorporates asset and justice-based thinking and practices developed at Marvelous Math Club (Ruffin et al., 2020).

Next Steps

Next, we will work with the PVA community to restart MMC soon after school begins in the fall semester of 2021. Dr. Ruffin, drawing on her deep well of knowledge and on her passion for excellence in Black education, worked with the authors to develop a plan for a qualitative assessment of the impact of the Club on Math Leaders, their families, their teachers, and Math Champions. A mix of methods inspired by portraiture (Lawrence-Lightfoot & Davis, 2002), including photovoice, interviews, intentional reflection, and document analysis, will allow us more insight on social mechanisms involved in MMC and where there is opportunity to strengthen the positive impacts of MMC in years to come.

References

- Cohen, G. L. (2006). Reducing the Racial Achievement Gap: A Social-Psychological Intervention. *Science*, 313(5791), 1307–1310.
- Google. (n.d.). *Google books Ngram Viewer*. Google Books. Retrieved September 14, 2021, from https://books.google.com/ngrams/graph?content=self-care&year_start=1800&year_end=2019&corpus=26&smoothing=3&direct_url=t1%3B%2Cself+-+care%3B%2Cco.
- Hinton, C., Miyamoto, K., & Della-Chiesa, B. (2008). Brain Research, Learning and Emotions: Implications for Education Research, Policy and Practice. *European Journal of Education*, 43(1), 87–103.
- Ladson-Billings, G. (2009). *The Dreamkeepers*, 2nd edition. Jossey Bass.
- Lawrence-Lightfoot, S., & Davis, J. H. (2002). *The Art and Science of Portraiture*. Wiley.
- Matza, D. (1969). *Becoming Deviant*. Prentice-Hall.
- Noguera, P. A. (2008). Creating Schools Where Race Does Not Predict Achievement: The Role and Significance of Race in the Racial Achievement Gap. *The Journal of Negro Education*, 77(2), 90–103.
- Reardon, S.F., Kalogrides, D., & Shores, K. (2017). The Geography of Racial/Ethnic Test Score Gaps (CEPA Working Paper No.16-10). Retrieved from Stanford Center for Education Policy Analysis: <http://cepa.stanford.edu/wp16-10>
- Roditi, B. N., & Steinberg, J. (2011). The Strategic Math Classroom. In L. Meltzer (Ed.), *Executive Function in Education: From Theory to Practice* (pp. 237–260). Guilford Publications.
- Ruffin, T., Alcalá-Williams, M., Williams, M., Cooper, A. (2020). *REGAL: Relevant Education Grows All Learners*. Dogwood Health Trust.
- Stevenson, B. (2019). *Just Mercy: A Story of Justice and Redemption*. Spiegel & Grau.

Appendix A

Marvelous Math Club, mmc@unca.edu

REGAL: Relevant Education Grows All Learners.

<https://drive.google.com/file/d/1n8QFURWqrfnfYyNx5PKzty-1m4H7LOyh/view?usp=sharing>

Video of Dr. Tiece Ruffin addressing asset-based language on CreativeMornings videocast.

<https://www.youtube.com/watch?v=tQrxSHQvzJU&t=1569s>

Video of Math Leaders playing with math flash cards. <https://youtu.be/5LVkT7nWmvo>

Appendix B

Asset-based language card.

ASSET + JUSTICE-BASED THINKING AND PRACTICES

Deficit-based	Asset-based
Help/ Helpful	Support, Encourage, Beneficial
Need(s)	Priorities, Interests
Fix	Validate, Honor
Diverse Students	People/Person of Color, Multiracial
Tutor	Homework Support, Champion, Guide,
Being Good	Demonstrating Leadership
Improve	Grow, Enhance
Structure	Flow, Foundation, Framework, Design
Program	Club, Initiative
Empower	Ignite, Connect, Bridge to Resources, Share Tools, Inspire
Project	Design, Practice, Model
Remedial	Working to Grow/Growing

At-risk Youth	At-risk of what? White supremacy culture?
Math or Word Problem(s)	Question(s), Exercise, Challenge, Story, Equation
Marginalized/ Underserved	Communities with less access or pushed to the margins
“Needs Assessment”	Power-analysis
Behavior	Expression, Style, Way of showing up
Manage, Boss	Lead/Leader
‘Kids in poverty’/ low-income	Experiencing poverty
Minority	POC minor means less than and ity -a state of being. Who wants to be less than always?

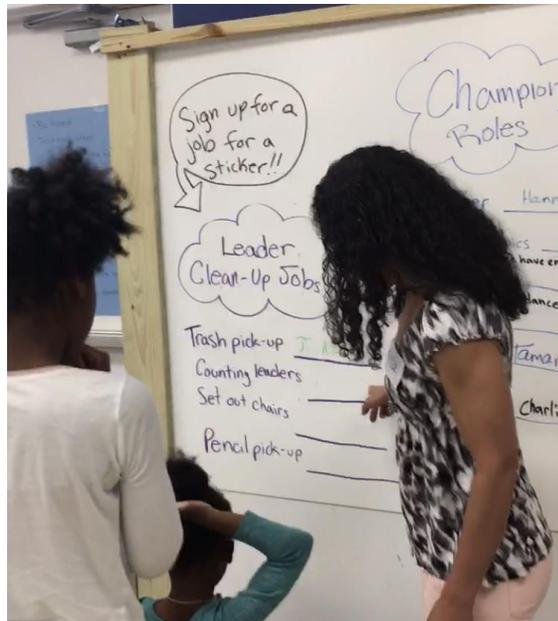
Compiled by Marta Alcalá-Williams in collaboration with leaders of Pisgah View Apartments.

Appendix C

Images



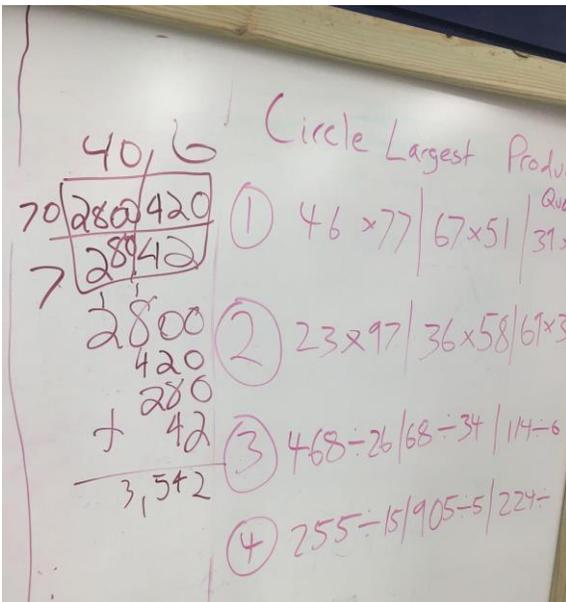
Checking in at snack time



Earning stickers



Playing math games.



Working it out on a board



Sharing circle

Marta Alcalá-Williams is a Latina woman who has lived, worked, and invested in the Asheville community for the last 30 years. She is committed to facilitating deep relationships centered on revolutionary love and collective liberation. Marta's work in the school system and community is rooted in engaging the community to achieve a clearer understanding and shared analysis of racial equity and to create equitable and just practices. Marta is known for her work with asset and justice-based thinking and practices. In addition to co-founding Marvelous Math Club, Marta started a Motherread group seven years ago which has created an amazingly powerful group of black, brown, and white women who uplift one another and are charting new territory on building true multiracial communities. Marta currently serves as the Executive Director of Equity and Community Engagement for Asheville City Schools.

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Dr. Kaplan has a life-long commitment to celebrating and popularizing mathematics. In addition to co-founding Marvelous Math Club, he has organized four Math Literacy Summits in Asheville from 2001 to 2008 to highlight community priorities and resources around mathematics. Dr. Kaplan has been recognized for his teaching with a UNC System Board of Governors Award, a UNC Asheville Teaching Excellence Award in the Natural Sciences, and a Distinguished Teaching Award from the Southeast Section of the Mathematical Association of America.

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