



**PROGRAM
SPOTLIGHT**



STEM EDUCATION AND INNOVATION CENTER

Fredericksburg, VA

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The STEM Education and Innovation Center (STEMEIC) in Fredericksburg, VA addresses inequalities in STEM education by providing afterschool programs, camps, and workshops to youth. The team emphasizes 21st-century/social-emotional skill building (including analytical thinking, social skills, leadership, and cultural knowledge) to support youth into and through STEM pathways. To expand their mission, the STEMEIC team is focusing more intentionally on outreach to, and ongoing engagement with, Black and Brown families across Virginia. "We want ongoing participation and commitment...we have too many of these one-off things..."

The Family Engagement Plan

The STEMEIC team, with six community partners, held a National STEM Day event to get families excited about, and engaged in, STEM learning and careers. The STEMEIC team took a leadership role and used the Planning Tool to guide the committee's work. To maximize participation, the event was held at Richmond Public Housing, where most residents are People of Color, on election day (a recognized holiday in VA). The STEMEIC was careful to take a positive approach to Black and Brown families. "If every time you bring kids out [of public housing], it's to say their community is junk. We need to give or provide experiences to validate who they are in their own environment." The event included accessible STEM activities for families (e.g., engaging families in a cooking lesson to learn about nutrients the body and mind need, and providing healthy smoothie recipes). The event included a "passport" to be stamped at each table, which advertised future program offerings.



The A-Ha Moment

The STEMEIC team described how the Planning Tool gave them credibility as leaders and strengthened the commitment of partners. “Up until now, the events were happening elsewhere. I brought the tool kit [Planning Tool], and they started listening...I became a leader because I put a framework around it [family engagement in STEM]. ‘Who are we going to include?’ People didn’t even think of themselves as a partner until I told them they were a partner. They were sitting at the table and never considered themselves a partner. Then they showed up with their lead physicist, they showed up with their workforce development, they showed up with their students who were going to be engineers... And they donated. I didn’t even think of this when we were planning the event...” As STEMEIC engaged children and families together more often, they learned new best practices. The team saw that some children didn’t participate because they were afraid to make mistakes in front of their parents and staff, and others didn’t have a chance because their adults kept doing the activity for their children. The team has found that bringing families into STEM allows parents/caregivers to observe how their children react to challenges, so that parents can better support children without doing the work for them. “The National STEM Day always start with a challenge for kids. How can you support your children if you don’t know what their needs are? ...Parents are given the opportunity to break in. We hear parents saying things like ‘What do you think makes a strong foundation of a house? Do you think it is big?’ We want the families involved...”



Family Engagement Strategies Reimagined

In previous years, communications and activities around the National STEM event were directed only to youth. The STEMEIC team shifted the planning committee’s target from children to families and started offering more family-inclusive programming. The Executive Director shared an example: “We’re now doing a DIY Architect program. We invited parents and made it a family event. I wasn’t planning on this, but I saw the parents and started to invite them in... I thought of the [Planning] Tool: make it a family STEM event. And the parents started coming in with boxes and other materials to share.” STEMEIC also reflected more on potential participants. As an example, although several partners assumed teens would not attend, about a quarter of the youth present were teens accompanied by their case managers. “They underestimated because they thought they would just be little kids. But big kids came too...They all came and they enjoyed the event!” This success underscores the necessity of confronting assumptions about what youth/families want, and including as “caregivers” all people who care for and support children.

Evidence of Success

Naming community groups as partners in the event increased attendance, commitment, and support. “They gave out lots of computers. People who said they weren’t going to bring stuff, brought stuff.... People would just show up, like a university professor who was just there to set up a table but ended up staying because he was so impressed.” Thanks to the inclusive approach, STEMEIC had twice as many participants as expected. The STEMEIC team advises that planning for STEM family engagement activities should include follow-up steps. “We had such a high turnout, I told our partners ‘Make sure you’re ready for the after response.’ They had so many kids show up to the robotics club at the next session, they had to turn families away.” STEMEIC is now working with partners to meet the increased demand.

