PUTTING YOUR PARTNERSHIPS TO WORK

PRACTICE BRIEF 4

STEM CAREER CONNECTIONS

Action Steps:

- Invite STEM professionals from your community to be STEM mentors.
- Plan your youth-mentor interactions to match goals and availability.
- Provide orientation for STEM mentors to prepare them to work with youth.

Create opportunities for youth and STEM professionals from the community to engage in project work, data collection, and career experiences. These types of activities are highly engaging and create unique shared experiences to build relationships. Modeling professional skills like problem-solving and critical thinking in authentic settings is a valuable experience for youth.

Strategies to Make it Happen:

Recruit Mentors

Invite STEM professionals from your pool of community partners to serve as STEM mentors. Choose partners who work in fields or have skills that directly connect to what youth are doing in their STEM lessons. In some cases, youth or interns at more advanced STEM education levels can also be great near-peer mentors. The goal is for mentors to work alongside youth and help them connect their STEM lessons to real-world applications within their community.

Have a conversation to get to know each potential mentor, learn what their career entails, and how that could connect with what youth would be doing. We recommend asking the mentors about their goals for their time with the youth. This can help as you plan how to structure the youth-mentor interactions.

Design your youth-mentor STEM learning interactions

Consider the needs and interests of the youth, educators, and STEM mentors and schedule a series of in-person, virtual, or hybrid interactions. Be sure to adhere to guidelines that your district or program has for adults interacting with youth. It takes time for youth-mentor relationships to establish, and you will find that multiple touch-points result in the highest benefit to youth. But one-time meetings can also be valuable and offer exposure to new ideas and STEM career pathways. Examples of the different mentor-youth interactions we tested out in our project are explained in the Mentorship Typology tool (below).

Be open to adapting your activities and structure to accommodate a promising mentor, but keep your overarching goals in sight. Most times, your mentors are volunteering their time and can be hard to come by, so you should allow them to participate as long as they can provide a meaningful experience for the youth. Communicating expectations for mentors, educators, and youth in advance can help ensure the mentor meetings are a positive experience that accomplishes your goals.

No matter how the youth-mentor meetings are structured, youth will have an easier time engaging when

there is a clear and meaningful reason for meeting with the mentor. The mentors should share skills or knowledge directly applicable to the youth's work. Further, be sure to build in time for icebreaker activities and socializing. Learning about interests, hobbies, and life experiences helps youth and mentors connect as people and helps the mentors discover ways to engage with youth around their interests. Encourage follow-up email exchanges to help build the relationships between youth and their STEM mentors.

Tool: Mentorship Typology
Use this tool to help you determine what kind of youth-mentor interactions are best suited for your project.

Tool: Tips for a Successful Youth-Mentoring Program
This handout provides helpful tips to follow as you design your youth-mentor experiences, based on our experiences.

Prepare youth to meet their STEM mentors
We recommend that you spend some time preparing the youth to meet with the mentors, including introducing the concept of mentoring if this is new to your group. It can be helpful to have someone designated to facilitate the youth-mentor meetings, especially if they take place over video conferencing. The facilitator can introduce activities and discussions, facilitate transitions between breakout rooms, and be a timekeeper. This leaves educators free to assist youth and handle any classroom management issues. Consider creating an agenda for the meetings (sample agenda from our project) and sharing it with mentors and educators in advance.

We found that virtual mentor meetings benefited from additional structure. Educators and mentors appreciated agendas, and tips for engaging with middle schoolers can also be helpful (see tools below). Youth benefited from more advanced preparation for meeting with their mentors, such as constructing questions in advance and creating a worksheet for youth to share updates on their project work. When youth and mentors were able to meet in person, many of these supports seemed too rigid and unnecessary.

Facilitate an orientation meeting for your STEM Mentors
Orient mentors to each other, the project, the team, and their responsibilities through a one-hour orientation meeting to discuss what the mentors should expect when they meet with the youth, such as what the youth are working on in their STEM program and where they are in their learning. Be sure to explicitly describe what types of interactions are appropriate to foster an inclusive, welcoming environment for STEM learning and provide concrete examples of successful and detrimental interactions. Use the mentor orientation checklist (below) to help you plan your orientation meeting.

Other topics we recommend discussing during the orientation meeting include how to craft your story to be engaging for middle school youth and logistics for the upcoming meeting with youth (including a preview of the agenda). Provide additional resources (see tools below) to help mentors understand their role and the impact mentoring can have on youth STEM identity. Communicate what support you can offer, and address the mentors' questions and concerns. This allows your mentors to be ready and confident to interact successfully with the youth.

Holding a virtual orientation meeting will likely allow for higher attendance. Still, meeting in person will allow mentors to meet educators and facilitators, see the space where they will meet with youth, and hopefully allow them to experience a bit of the material or curriculum youth are using.

Tool: Mentor Orientation Checklist
Here is a checklist of topics to include in your mentor orientation meetings.

Tool: Out of School Time (OST) Readings Facilitator Guide
This selection of research-based readings and guide for how to facilitate will help your community partners gain background knowledge about the benefit of mentoring youth, how to activate motivation, and the importance of communicating an attitude of excellence in mentoring interactions.

Tool: Tips for Engaging with Middle Schoolers
This helpful list of tips can support your mentors as they work on building relationships with youth and engaging them to talk about their STEM learning.

STEM Career Connections Spotlight:

The Importance of Mentor Orientation

Through our project, we recruited multiple mentors, involving several types of youth-mentor interactions. During the Summer of 2021, we organized a one-week STEM camp with the local rural youth and recruited local community STEM mentors. As part of the recruitment process, we train mentors to help them succeed in their mentoring experiences and ensure our project goals are met. While all the mentors received training before the summer camp, one mentor - Rob (pseudonym), could not attend the training due to personal obligations. However, he had experience coaching boys' soccer and was confident in mentoring youth. We noticed Rob had different mentoring approaches, which negatively affected the youth and their ability to participate in the camp. For instance, when working with a classroom of about 20 middle school youth, Rob noticed one girl was off-task and leaning over to say something to a young woman sitting next to her as they were discussing a previous activity. Rob noticed and quickly addressed it by asking them to "cut it out." He eventually called out this youth by the shirt she wore because he did not know her name, saying she needed to "act like one [of the older kids in the group]." Disciplining this girl's participation in such a way broke Rob's ongoing narrative discussion about his work. It also exemplified his need for youth to listen to him as the speaker. He was taking power over the ability to choose who could speak and when.

We realized the value of being clear about goals for mentor interactions and the need to convey the type of communication space we created for mentors and youth to feel comfortable. Hence, a big takeaway from this experience was that structured mentor training could combat STEM professionals' previous experiences as guest speakers and may frame their mentoring approaches, especially when working with youth from underserved and less-represented backgrounds.

Reflection Questions

- Why is it important to take the time for you to get to know the STEM prospective mentors?
- Review the different mentor typologies (see TOOL). Which type of mentoring interaction will best fit the goals of your project?
- What are the most important characteristics of good mentor/youth engagements?
- How might you structure the mentor training to meet the goals of your project? What are the most important things you want to accomplish in mentor training?
- After reading the Spotlight, there are negative consequences for having mentors not aligned with your project's philosophy. How can you proactively prevent a negative mentor/youth engagement?

Next Steps

Practice Brief #5a - Adapting and Evolving As You Go: At the Youth Implementation Level