



# MENTORSHIP TYPOLOGY

|  | <b>Mentors Meeting with youth<br/>VIRTUALLY (Whole Group)</b>   | <b>Mentors Meeting with youth<br/>VIRTUALLY (Small Group/Individual)</b>  | <b>Mentors Meeting with youth<br/>IN PERSON (In Classroom)</b>  | <b>Mentors Meeting with youth<br/>IN PERSON (In Field)</b>  |
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| <b>Example of this Type of Youth-Mentor Interaction</b>    | Youth learn about the type of work that the mentors do, including specific examples that are engaging and/or relevant to youth's STEM work. Mentors share about their career paths. Mentors provide feedback on project ideas. Youth have time for Q&A. Mentors meet with youth 2-3 times.  | Youth and mentors learn more about each other's interests and life experiences, and begin to build trust. The mentor asks and answers questions about the youth's project(s) and provides insights to help them move their project forward. Mentors meet with youth 2-3 times.  | Similar to virtual experiences described at left. After a short, whole-group introduction, mentors spend the majority of the time circulating among youth as they work. This format allows more natural conversations and authentic relationships to develop. Mentors meet with youth 2-3 times.  | Youth and mentors interact at the mentor's place of employment or in a field setting where youth are practicing hands-on skills relevant to the mentor's work and/or collaborating with the mentor to collect data for their projects or for the mentor's organization. Best if youth and mentors meet at least once prior to the field experience.   |
| <b>Organizing The Youth-Mentor Interaction</b>             | Schedule meetings to match mentor availability and class/program meeting times, and determine where within the sequence of learning meetings with mentors are most valuable - both for youth and mentor engagement. Facilitator or teacher should determine and share objectives for each meeting. Provide mentor training, including guidance on how mentors can share their story in a way that is engaging and accessible to youth. Youth preparation can include introducing the benefits of mentoring, providing background on the mentors, and having youth prepare questions in advance. | All items from the left, and also extra strategies for engaging with youth in a virtual space are needed, such as ice breakers, structured agendas, and engaging visual aids. Consider if youth need to practice using the virtual technology (headphones, breakout rooms, chat, etc) and communicate youth expectations for the meeting (cameras on, muted unless speaking, etc) in advance. | Structure time to allow for small group or individual youth-mentor interactions as well as sharing with the whole group. Determine objectives for the whole group vs small group time and consider youth grouping arrangements during youth-mentor small group interactions. Having mentors engage with youth as they are working on their projects is a great use of small group time. | Plan out how youth will spend their time during the field experience - will they rotate between activities? Is there an opportunity for service work or hands-on experiences? If possible, provide opportunities for youth to engage with multiple persons, jobs, and skills. Ideally field experiences will provide an opportunity for youth to test or practice their design project, or to experience real world applications of their investigation topic. If possible, youth should have an opportunity to share their learnings from the field experience with mentors at the conclusion of the project (presentation of learning). |
| <b>Facilitating the Youth-Mentor Interaction</b>           | It is important for the facilitator or teacher to coordinate the mentor-youth interaction which would include the timing, agenda/content, and technology interface.   | In addition to what is included for the whole group interaction at left, facilitators and teachers should ensure that youth are in a quiet space and have headphones for small group online interactions. This type of interaction also requires setting up multiple breakout rooms for each mentor to meet with small groups of youth in the class.  | Facilitator/teacher should make sure the mentor has directions on how to get to the meeting space, how to check in with the front desk, and the room where the youth are meeting. Once in the room, ensure that youth are on task and encourage youth to ask questions relevant to their projects as aligned with the mentor's expertise.   | Scheduling transportation and preparing youth in advance for the experience is an important part of ensuring a successful lab/field experience. Communicating with the mentor and youth about safety and procedures for being on site should be part of the preparation.  |
| <b>Advantages of this Type of Youth-Mentor Interaction</b> | Youth get to learn about different types of STEM work being done from experts not close enough to visit in person.<br><br>Youth can sometimes see labs and other science spaces that are typically not available to youth due to access or safety issues.   | Youth can talk about their project and get suggestions directly with a mentor who may not be able to visit in person.   | Youth can connect directly with the mentor. There can be more energy in person compared with virtually. The conversation can go in many directions when the mentor can be there to share experiences and more easily see non-verbal cues compared with virtually.   | Youth can see where the mentor works (lab or field) and see the instruments and co-workers that the mentor works with in real-world settings. The experience can be more memorable by engaging more senses.   |
| <b>Challenges of this Type of Youth-Mentor Interaction</b> | Difficult to manage large groups of youth.<br><br>Youth do not necessarily feel connected with the mentors  | Low energy.<br><br>Youth do not necessarily feel connected with the mentors. Some youth may not feel comfortable sharing their project on screen or they may struggle to ask questions in this format.  | More time and travel is required for the mentor to visit in person. In some cases this option is impossible for mentors with busy schedules or locations that are far away from the youth.  | There is a lot of coordination for both the mentor and the teacher/facilitator to prepare for the location, youth, and transportation for a meaningful experience.  |



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|  | <b>HYBRID/Mixed VIRTUAL<br/>and IN PERSON</b>  | <b>STEM Expert Guest Speaker<br/>(virtual or in person)</b>  | <b>Near Peer Youth Experts<br/>(virtual or in person)</b>   |
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| <b>Example of this Type of Youth- Mentor Interaction</b>   | Youth-mentor interactions are both in-person and virtual. This could include one mentor being in person and a second mentor being virtual. Small groups or individual youth meet with mentor virtual mentors, while in-person mentors circulate among youth as they work. Mentors meet with youth 2-3 times.   | A STEM professional shares knowledge or expertise that directly relates to youth project work. Youth learn about the speaker's career path and have time for Q&A. This type of interaction would not include follow-up sessions with youth about their projects. This might be a one-time interaction.   | Youth meet with other youth who have experiences that directly relate to their project work. If working with middle school youth, this could include meeting with high school or college students to share stories about their STEM work, about high school/college classes and experiences, and about their career aspirations.  |
| <b>Organizing The Youth-Mentor Interaction</b>             | If mentors must do both in-person and virtual meetings, consider which activities are best accomplished during face-to-face time and what can be saved for virtual meetings. In most cases, first meetings between youth and mentors should be in person and follow up meetings can be virtual.                | A STEM expert can be brought in for a one-time meeting with youth to provide background information or present about their work and how it connects to youth project topics. Often the guest experts can be useful as youth are in the beginning stages of exploring their topic or gathering criteria & constraints for their design. The STEM expert can be valuable as youth brainstorm solutions. Be sure to allow time for the guest expert to share about their career path and to allow for youth to ask questions. | Meet with near-peer youth experts to prepare for working with youth. Provide guidance as near-peer youth plan how to share their story such that it connects directly to youth project work and provide tips for interacting with younger peers. Allow lots of time for socializing and conversation. Encourage near-peer youth to share about their high school experiences, post-high school/ college experiences, and their career plans. If possible, structure small group/breakout room time where youth can get feedback on their project work. Follow up email exchanges can help build the relationship. |
| <b>Facilitating the Youth-Mentor Interaction</b>           | If you have one mentor online and one mentor in person, ensure that both are able to share with the whole group and in small groups as appropriate. Assist the mentor online to visit with small groups by moving the computer to small groups or calling the youth to talk with the mentor at a central area. | Brief the youth about the type of guest speaker who will be sharing with the class. Ask youth to come up with questions ahead of time so that the conversation is engaging for both the speaker and the youth.   | Provide some orientation for the near peer youth about the project(s) that the youth are working on and coaching around how to share about their story with the youth.<br><br>Share with youth your expectations about the interactions that are appropriate for youth/near peers.  |
| <b>Advantages of this Type of Youth-Mentor Interaction</b> | Youth get the best of both worlds (virtual and in-class) for various interactions.<br><br>This option provides the most flexibility for the mentor based on their schedule and provides some face-to-face time for the youth compared to remote only.  | A wide variety of topics can be shared with youth as they relate to their projects. Guest speakers commit to a one time sharing and are not required to assist with follow-up meeting(s) with youth.   | Youth can see the next step in their learning trajectory. Youth can also see themselves more readily as near peers are closer in age as the youth in the program.<br><br>Near peer youth/interns benefit from sharing their experience with younger youth and it helps them be better communicators and learn about working with those who are younger than they are.   |
| <b>Challenges of this Type of Youth-Mentor Interaction</b> | If one mentor is in the room and the other is remote, there is coordination needed for each mentor to be able to interact appropriately with youth (i.e., sharing airtime and keeping the youth engaged).  | The experience is limited to the one time event and is probably not as impactful or memorable than multiple interactions.  | Not all near peer youth/interns are interested in interacting with those who are younger than them. If the interns are not interested in the topic, they can project this to the youth in the program.  |