

# Community Development – Mentorship Program

## Assumption Test

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<https://docs.google.com/document/d/1u1wfSqkcQvFqFuWIESk4P2jc3DBeNq2PLPQHD64S1WU/edit?usp=sharing>

### Introduction

*We assume that we can create a mentorship program for students at Dearborn.*

This semester, the ADE Community Development Team is dedicated to gaining insights into the Dearborn STEM Academy (DSA) community in Roxbury. Our primary goal is to establish trust within the community, and we are actively exploring various avenues for community engagement, such as in-class activities, afterschool programming, and the initiation of a science fair mentorship program. As we transition from our previous focus on Mississippi to understanding a new community, it becomes imperative to subject certain assumptions to rigorous testing.

Conducting critical assumption tests is essential to verify that our efforts align with the genuine needs of our stakeholders and that we are not inadvertently causing any harm. A key assumption under examination is our ability to develop a successful mentorship program at DSA. Specifically, we are aiming to achieve this through a series of four thirty-minute Zoom sessions with 6th and 8th grade students serving as mentees.

### **What are attributes of a successful Mentorship Program?**

We want to be able to create a space where mentees could develop a connection with their mentors. While the Mentors get a chance to showcase their abilities & knowledge, as well as the privilege to have an impact in guiding and listening to 6th and 8th grader students.

In addition, Having consistent and stable meetings that allow growth in STEM or any other related matter is a vital building block for this program.

### Method

#### **Program Pilot Testing**

To figure out if we could establish the mentorship program, we decided to initiate a “pilot mentorship program” for the upcoming science fair.

#### **Idea Proposal**

After reaching out following the open house and STEM night, we presented our proposal for the Mentorship program to Corey and Mr. Baker in a Zoom call. During this meeting, we inquired about any existing mentorship programs within the school, asked about interest, and discussed the potential start date.

While there were some mentorship initiatives in place, most were affiliated with external organizations like [Big Brothers and Sisters](#) or were exclusive to specific groups, such as a program solely for girls. Feedback in terms of word of mouth from students during STEM night indicated a positive reception, demonstrating early interest in our proposed program. Concluding the zoom call, we were able to find common grounds in the creation of a program that was inclusive to all.

## Working Logistics of Program

### 1) Interest Forms

Following the initial Zoom call, we proceeded to gather interest from potential mentors by distributing [interest forms](#). Remarkably, we garnered the participation of 19 mentors who expressed eagerness to contribute to the program.

In the process, we recognized the importance of tailoring the mentorship experience to the specific needs of the students. Consequently, we split the mentors into groups based on their subject interests, acknowledging the distinct learning materials for 6th and 8th graders. This organization ensures a more personalized and effective mentorship experience for both mentors and mentees. As 6th graders are working with light, while 8th graders are learning Newton's Laws of Motion.

#### Questions we asked

*"6th grade students' projects will be around light, and similar topics. Would you be interested in mentoring a 6th grade group on this topic?"*

and

*"8th grade students' projects are surrounding the topic of motion, Newton's Laws, and various physics things. Would you be interested in mentoring an 8th grade group on this topic?"*

Name  
19 responses

|                 |
|-----------------|
| Adhishri Hande  |
| Ben Eisenbraun  |
| Kenta Burpee    |
| Tyler Ewald     |
| Stephanie       |
| Bill            |
| Vaani Bhatnagar |
| Eddy Pan        |
| Gabe Zak        |

Figure 1: Form result of Mentors committing to the program.

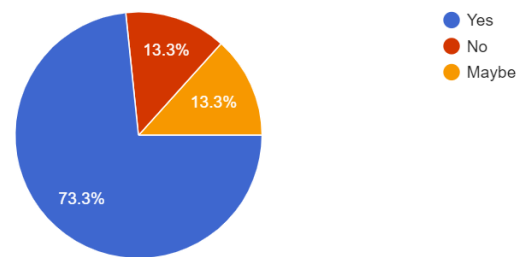


Figure 2: Mentor percentage of interest in light were 73.3% "yes", 13.3% being a "maybe", and 13.3% being a "no".

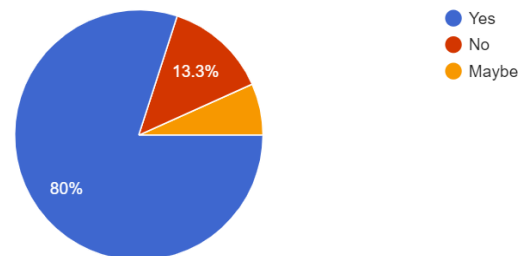


Figure 3: Mentor percentage of interest in Newton's laws of motion were 80% "yes", 13.3% being a "maybe", and 11.1% being a "no".

## 2) Building Timeline Structure

After gathering the interest of each mentor, we wanted to ask about availability. If it was possible for them to meet on Fridays.

Questions we asked:

*"Would you be able to meet between 12:20-1:30pm on zoom on the days listed above? (a 30 minute chunk of this time)"*

and

*"Would you be able to go to Dearborn STEM Academy in person at either the 6th or 8th grade time slot to meet with students in person? (This is a question just to see availability. We are currently only doing the online engagement, but want to see what an in-person engagement may look like)"*

This portion of the form helped us in pinpointing general availability. After this form we met up again with Mr. Baker and Corey and after showing them the availability form, we agreed on a day and timing. Thanks to Mr. Robinson, a 6<sup>th</sup> and 8<sup>th</sup> grade science teacher, set aside 30 minutes time intervals to meet on 4 Fridays starting in November and concluding in January via zoom (before the science fair). Before finalizing the schedule, we took into account the mentors' availability and aligned it with the interests of the mentees and placed them in groups. We then created set zoom links per times slots as we wanted the students to ease into these meeting without complications.

## Availability Charts

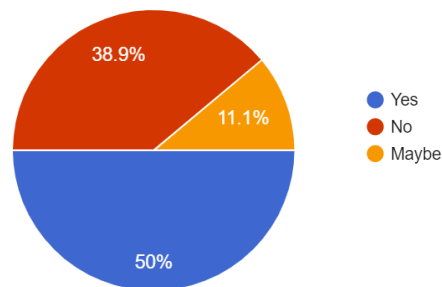


Figure 4: Availability to meet 50% "yes", 38.9 being a "maybe", and 11.1% being a "no".

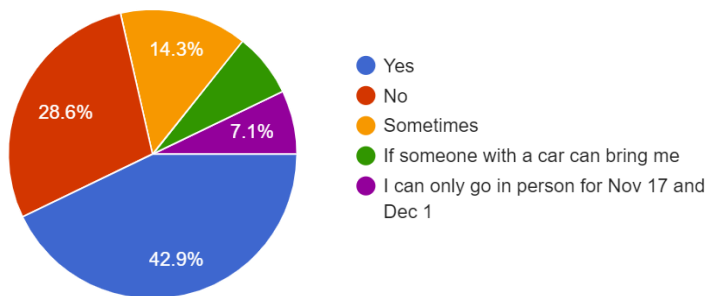


Figure 5: Availability to go to Dearborn meet 42.9% "yes", 14.3 being "sometimes", 7.1% if "transportation available", 7.1% only "November 17 and December 1", and 28.6% said "No".

## Time Sheet

| A             | B                | C                                | D  |
|---------------|------------------|----------------------------------|--|
| Time          | Mentor           | Mentee(s)                        | Topics   |
| 8:30-9am      | Zeno             | Harlen                           | How does light affect the eye so you can see?        |
| 8:30-9am      | Adhishri Hande   | Miguel & Naymar                  | Why do humans need light to see?                     |
| 8:30-9am      | Ben Eisenbraun   | Kenneth, Caleb, JR (Jon Michael) | What causes the reaction in elephant toothpaste?     |
| 8:30-9am      | Bill Fan         | Isabelle & Kaylee                | How do plants grow?                                  |
| 8:30-9am      | Gabe Zak         | Azaria                           | How do black holes form?                             |
| 8:30-9am      | Max Stopyra      | Anyra                            | How does Bluetooth work?                             |
| 8:30-9am      | Cherry Pham      | Sabina                           | How did fish evolve?                                 |
| 8:30-9am      | Nina Mindel      | Anaisha, Julia & Allyanna        | How does the day look in different places/countries? |
| 8:30-9am      | Stephanie Cho    | Erelyn, Shamere, & Alleia        | Why do we only see visible light?                    |
| 10:45-11:15am | Prisha Bhatia    | Kylie                            | How can a chemical reaction make a sound?            |
| 10:45-11:15am | Sushmit Dutta    | Ramon & Fabio                    | How do you make a motion sensor?                     |
| 10:45-11:15am | Phillip Post     | Ghislane, Jaylanie & Elianny     | What are the laws of motion? How do they affect us?  |
| 10:45-11:15am | Declan Ketchum   | Bricia                           | How can air be toxic?                                |
|               |                  | Dekota                           | Why can't we see air?                                |
| 11:15-11:45am | Prisha Bhatia    | Donia                            | How does the brain remember things?                  |
|               |                  | Astarah                          | How does the human brain react to music?             |
| 11:15-11:45am | Sushmit Dutta    | Aries                            | How many times can you reflect light?                |
| 11:15-11:45am | Phillip Post     | Manny                            | Can you break metal with sound?                      |
| 11:15-11:45am | Declan Ketchum   | Imran                            | Why do humans run on 2 legs?                         |
|               |                  | Jonielle                         | How is our solar system structured?                  |
| 12:30-1pm     | Kenta Burpee     | Devin, Sean, Hershey, & Luis     | How many watts can a potato battery generate?        |
| 12:30-1pm     | Tyler Ewald      | Jadriel and Joel                 | What is energy and how is it transferred?            |
| 12:30-1pm     | Vasani Bhatnagar | Cristian & Charlie               | How can we extract DNA molecules?                    |
| 12:30-1pm     | Eddy Pan         | Lasarah, Daniza, & Zylaire       | How is DNA significant to human development?         |
| 12:30-1pm     | Alex Zeigler     | Nayel, Synsere, & Jeremy         | What is dark matter?                                 |
| 12:30-1pm     | Isabel de Luis   | Suheydy & Yasselin               | How does osmosis make items bigger?                  |
| 12:30-1pm     | Arianne Fong     | Julliana & Terrance              | How have animals evolved into today?                 |
| 12:30-1pm     | Esme Abbot       | Ebony, Gy, & Wilcary             | What makes a volcano erupt? (chemistry)              |
|               |                  | Mikayla & Isabella               | How is lava made?                                    |

Figure 6: Table of Meeting times, Mentors, Mentees, and Topics.

### 3) Educating In action

At this point, we've already established the Interest at hand, Mentors, and Meeting time & place. Before going into our first meetup, we wanted to make sure that the Mentors knew the series of work and expectations behind this commitment. Though its impressive we have talented and gifted mentors, we need to ensure that they follow the rules, regulations, and etiquette of being apart of this program with DSA. We made sure to set up a meeting with all the Olin mentors, and presented vital information in the slides mentioning the work were doing, why were doing it, and how to act around the students. Its important to guide not just answer, facilitate don't instigate, and keep up most privacy with personal information (*communication channels and etc*).

### 4) Starting The "Pilot"

What better way to know if your hypothesis is true then to test it. After meeting with the mentors and faculty, we decided its time to put this program at test and our ideas into action. We enter the Zoom and start to facilitate the students to each Break-out room. During each 5 minute interval, we check-in to see if everything is going smoothly. Surprisingly, the students seem engaged and energized. For content, the first meeting was explicitly a "get to know" and "ice breakers". The only hiccup we had were that some students were entering late and exiting early, and some had technical difficulties.

After finishing with the 6<sup>th</sup> graders, we repeated the same process with the 8<sup>th</sup> graders. We noticed that generally 8<sup>th</sup> graders were much more active and energetic when it came to transitioning and it longer in locking down and focusing. Overall, we made sure to take notes and to figure out better solutions in fixing or mitigating those issues



Figure 7: The [Presentation Slides](#) used for the Mentors.

### 5) Gathering Feedback

Despite the limited number of interactions, our genuine curiosity about the evolving relationships between Mentors and Mentees led us to seek their perspectives. After the introductory session and the subsequent meetup, we proactively distributed a feedback form to capture thoughts and emotions regarding their experiences. This strategic mid-point assessment is a crucial juncture that enables us to gather valuable insights into the Mentors' connections with the students and vice versa. The main question for assumption theory was, Do you like having a Mentor/Mentee?

#### Questions we asked (Mentees):

"How do you feel about having a mentor (1-5)"

and

#### Questions we asked (Mentors)

"I feel comfortable talking to my mentees (1-5)?"

## Results

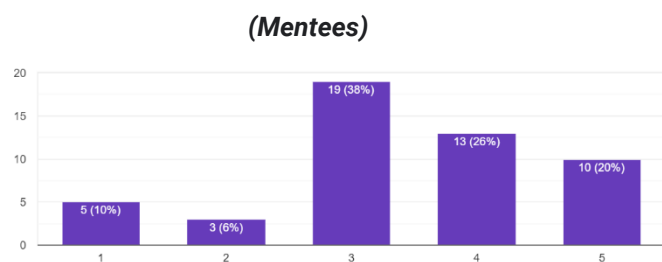


Figure 8: The Scale (1-5) of “Mentees feeling towards having a Mentor”. 1 being least and 5 Being most.

### Analysis

Majority were 3 and over, but still some felt that they didn’t feel the best with having a Mentor (1-2) a total of 8 out of 50 students. The average number of Mentees and how they scaled their mentors was at an exact 3.4 .

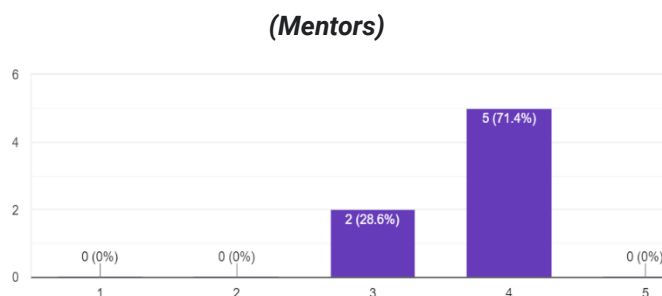


Figure 9: The Scale (1-5) of Mentors feeling comfortable with their Mentees. 1 being least and 5 Being most. Average answer was 3-4.

### Analysis

Majority of Mentors that took the survey were at a 4 (5 Mentors), and the rest were at a 3 (2 mentors). Keeping in mind that out of 19 students, only 7 of them did the survey. The average being an exact 3.71.

Both the Mentors and Mentees are in a similar range around the 3 mark. Signifying that though many feel comfortable and want to have a mentor, its still a work in progress.

Though our focus is on the assumption of building this program, we have to keep in mind that without safety in communication & comfort the program can’t sustain itself efficiently long term wise. Potential reasons for some low scores in the Mentees Form could be due to some of the repetitive answers found in “*What they want to learn from their Mentors?*”

### **Highlight of Repetitive Responses**

- “ anything”
- “ I don’t know”
- “ Idek”
- “Stuff”
- “ everything
- “ College things”

Consensus that they seem “lost” or “directionless” with the main point of having a mentor.

From the **Mentors** Point of View: We asked the Mentors “*What are concerns about Mentorship?*”

### **Highlight of Repetitive Responses**

- “Not being able to help”
- “ I don’t want to disappoint”
- “ Feeling Nervous”
- “Connecting issues”
- “None, right now at least”

Consensus that they feel a bit “directionless” and issues with “connecting”. Similar patterns with the Mentees in feeling lost.

*When will it be possible for Students that have finished their science fair program be eligible to mentor other students?*

## **Recommendations for Future**

For the assumption that “we can create a mentorship program”, I would advise in constant maintenance. What I mean by that, is to continuously keep up with students interests and trends to bring into relevant conversation. Send forms (in healthy doses) to better understand where your at with the Mentors and Mentees. Being patient and consistent will allow for better supervision and progression.

## **Future Research**

Future research should focus on enhancing the mentorship program for 8th graders by strategically addressing their susceptibility to distractions and fostering a strong mentor-mentee relationship.

Virtual engagement strategies, such as incorporating synchronous cues and gamification elements, should be explored to maintain student focus during virtual sessions. Additionally, efforts should be directed towards identifying key mentor attributes through surveys and interviews, with a focus on qualities like approachability and skill share.

A possibility of mentor training programs should be developed to enhance essential skills like active listening, effective communication, and anti-savior attitude. Integrating mentorship into project-based learning can provide a dynamic context for engagement, and strategies for long-term relationship building should be investigated to ensure sustained student interest and motivation within the mentorship framework.

### ***Additional grey areas to be explored:***

*Can we to hybrid or in-person?*

## **Appendix**

- ☐ [Initial Mentorship Interest Form](#)
- ☐ [Dearborn Stem Academy X Olin Online Mentorship Guidelines](#)
- ☐ [Pre-Mentor Presentations](#)
  
- ☐ [Initial Mentorship Safety and Belonging Form -- Mentees](#)
- ☐ [Initial Mentorship Safety and Belonging Form -- Mentors](#)
- ☐ [Mentor/Mentee Schedule](#)