ILLINOIS SCIENCE & TECHNOLOGY COALITION

EDUCATION

from the classroom to the real world

STEM Challenge | 2023-2024

Welcome, New Teachers!

- What/Who is ISTC?

- What is the Mentor Matching Engine?

- Setting up for success!

MEET THE ISTC EDUCATION TEAM

Tanvi Dharap

(she/they)

Program Manager
of Mentorship

Jackie Navigato

(she/her)

Program Manager
of STEM
Experiences

Becky Goldberg

(she/her)

Director of
Education

Jozie Crouch

(she/her)

Community
Communications
Coordinator

MEET THE STEM CHALLENGE COACH

Liz Copper
(she/her)

STEM Challenge Coach

UNMUTE AND SAY HELLO

1 Share your name and pronouns

2 School and course

3 A hobby or talent you have
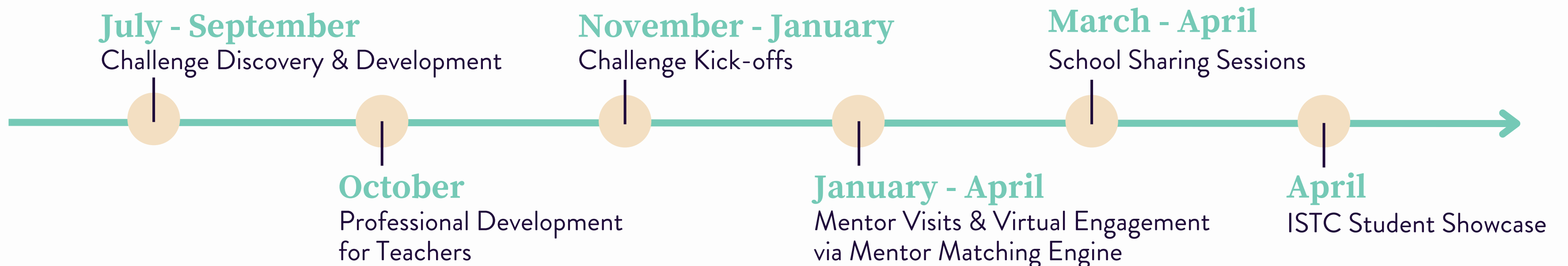
ISTC'S MISSION

1 Foster inclusive STEM talent pipeline within Illinois

2 Break down barriers to traditional mentoring

3 Connect industry to classrooms

THE STEM CHALLENGE PROGRAM

STEM Challenges are real-world projects that allow high school students to work alongside STEM professionals. Students and mentors from industry partners collaborate over four months to explore, create, and build innovative solutions.

Company employees support student learning as mentors - providing expertise and feedback both in-person and virtually through our Mentor Matching Engine® platform.

TIMELINE

July - September
Challenge Discovery & Development

October
Professional Development for Teachers

November - January
Challenge Kick-offs

January - April
Mentor Visits & Virtual Engagement via Mentor Matching Engine

March - April
School Sharing Sessions

April
ISTC Student Showcase

CHALLENGE STATEMENTS

- Authentic industry problem

- The starting point for students

- No 1 right answer to these problems

- 2 versions

  - Challenge Statement

  - Student Letter

KEEP IN MIND

- Phases
  - Phase 1: Research
  - Phase 2: Synthesize
  - Phase 3: Iterate
  - Phase 4: Prototype
  - Phase 5: Pitch

- Familiar with document prior to the kick-off.

- You don't need to be the expert.

Challenge Statement:
You are being recruited to assist in the development of new technologies to improve patient health outcomes through telehealth and access to clean water. Select one of the following options and challenge yourself to think creatively about the possible solutions.

Option 1: As technology improves and patients become more active participants in their health, you are being tasked to create the Sharesource 3.0.

Phases
Phase 1: Understand the difference between telehealth, telecare, and telemedicine.
Phase 2: Explore how Sharesource is used currently to aid in patient care and treatment.
Phase 3: Explore patient engagement.
Phase 4: Storyboard your technology.
Phase 5: Pitch it!

Option 2: Expand Sharesource technology or alternative telehealth devices to personalize treatment for Diabetes and improve patient behaviors related to nutrition or exercise.

Phases
Phase 1: Understand the difference between telehealth, telecare, and telemedicine.
Phase 2: Explore how Sharesource is used currently to aid in patient care and treatment.
Phase 3: Research current treatments for Diabetes.
Phase 4: Explore patient engagement.
Phase 5: Storyboard your technology.

Design Thinking
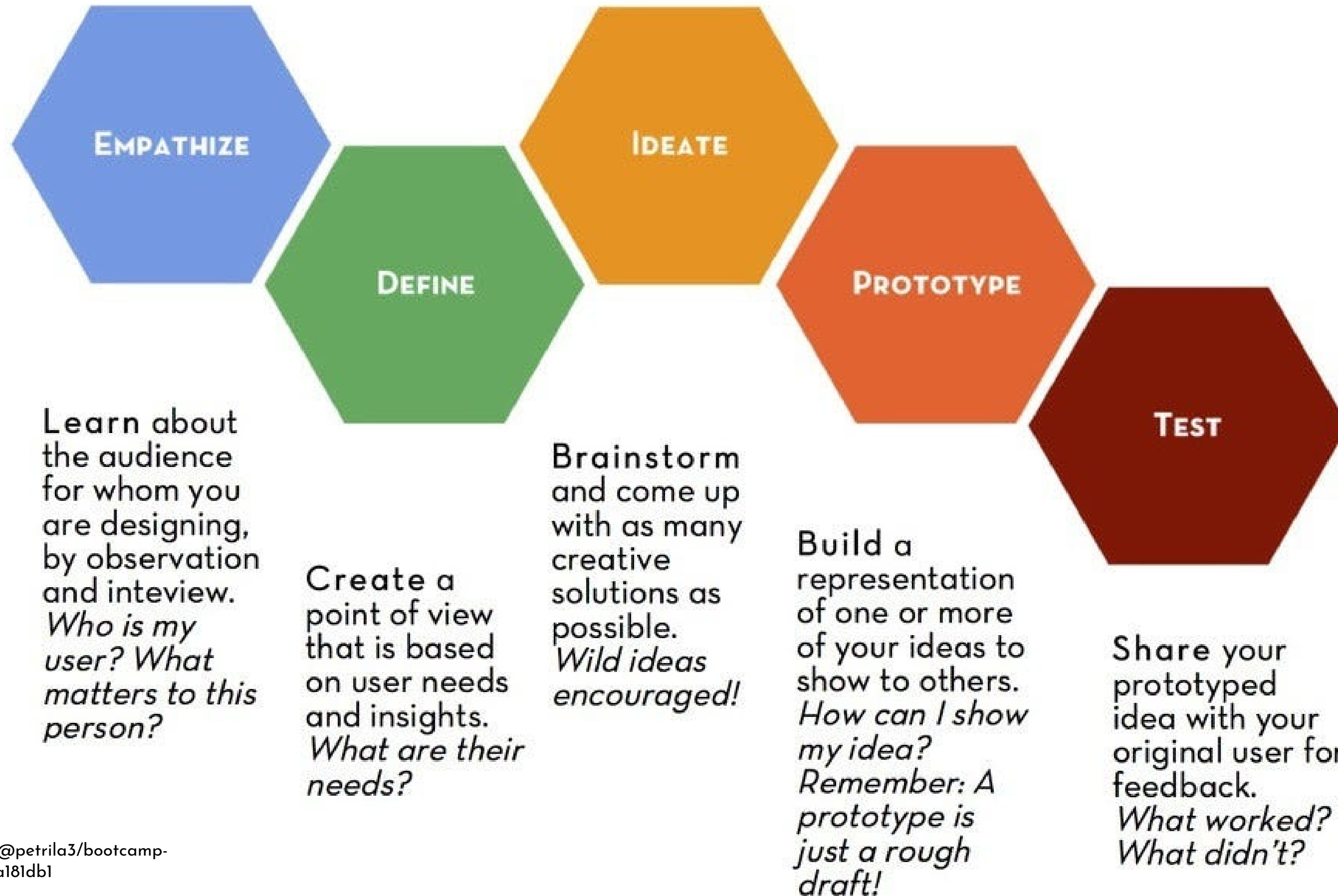
EMPATHIZE

DEFINE

IDEATE

PROTOTYPE

TEST

Learn about the audience for whom you are designing, by observation and inteview. *Who is my user? What matters to this person?*

Create a point of view that is based on user needs and insights. *What are their needs?*

Brainstorm and come up with as many creative solutions as possible. *Wild ideas encouraged!*

Build a representation of one or more of your ideas to show to others. *How can I show my idea? Remember: A prototype is just a rough draft!*

Share your prototyped idea with your original user for feedback. *What worked? What didn't?*

The Mentor Matching Engine

The Mentor Matching is an online platform that connects students and teachers with their partner company and mentors.

1. Teacher Onboarding

2. Onboarding Students

3. Student project Creation

4. Teacher Approval

5. Creating Groups

6. Tracking Weekly Communication

Mentor Matching ENGINE

Go beyond the classroom with MME.

Powered by
ILLINOIS SCIENCE & TECHNOLOGY COALITION
EDUCATION

Resource Alert : Onboarding Checklist

GETTING ON THE MENTOR MATCHING ENGINE

- Onboarding Students

- Student Project Creation

- Teacher Approval

- Mentors Matched

Projects (2)

2 Matched

New Invitation

Bulk upload email addresses with sp

Email addresses

Role *

Invite   Cancel

TEACHER TOOLKIT

- From Video Demos to communication tools, and everything in between. Don't see what you need? Let us know!

STEM
Challenge

SETTING UP FOR SUCCESS

ISTC is here to guide you in all aspects of the program! From getting students up and ready to connect with mentors and beyond, please reach out with any and all questions.

1.
LETTER OF COMMITMENT

2.
COMMUNICATION

3.
STEPS TO ONBOARD

LETTER OF COMMITMENT

- Your school signed up to participate with a specific amount of projects. ISTC uses the Letter of Commitment as a broad guide to begin recruiting mentors.

- As you begin to plan your course, know that you can't exceed this number, but you can fall beneath it.

KEY PLAYERS IN COMMUNICATION

Teacher

Role: Teammates with the mentor!
Goal: Developing workforce and real-world skills in the student.

ISTC Staff / Coach

Role: Point of contact for any planning or breakdown in the project process.
Goal: ISTC aims to support all parties through the mentoring process.

Mentor

Role: Primary resource for students.
Goal: Support process and create bridge beyond high school.

Student

Role: Students are the primary communicators and the project leads.
Goal: Build agency.

COMMUNICATION IS KEY

Students and Mentors

Expectation: Weekly communication. If your classroom will be communicating less frequently than that, establish it either in the research details or in the very first post.

Students and Mentors (Again!)

Communication schedule: (STEM Fridays, Mentor Mondays). They should tell their mentor when they plan to post.

Teachers and ISTC

Monthly emails: Updates, deadlines, important tasks and awards!

ISTC CHECK INS AND SUPPORT

ISTC will communicate via monthly emails and supplemental connection points when the following occur:

- Milestone Planning

- Necessary Nudge (Break in communication)

- Security Precaution

GOOGLE LINK SHARING
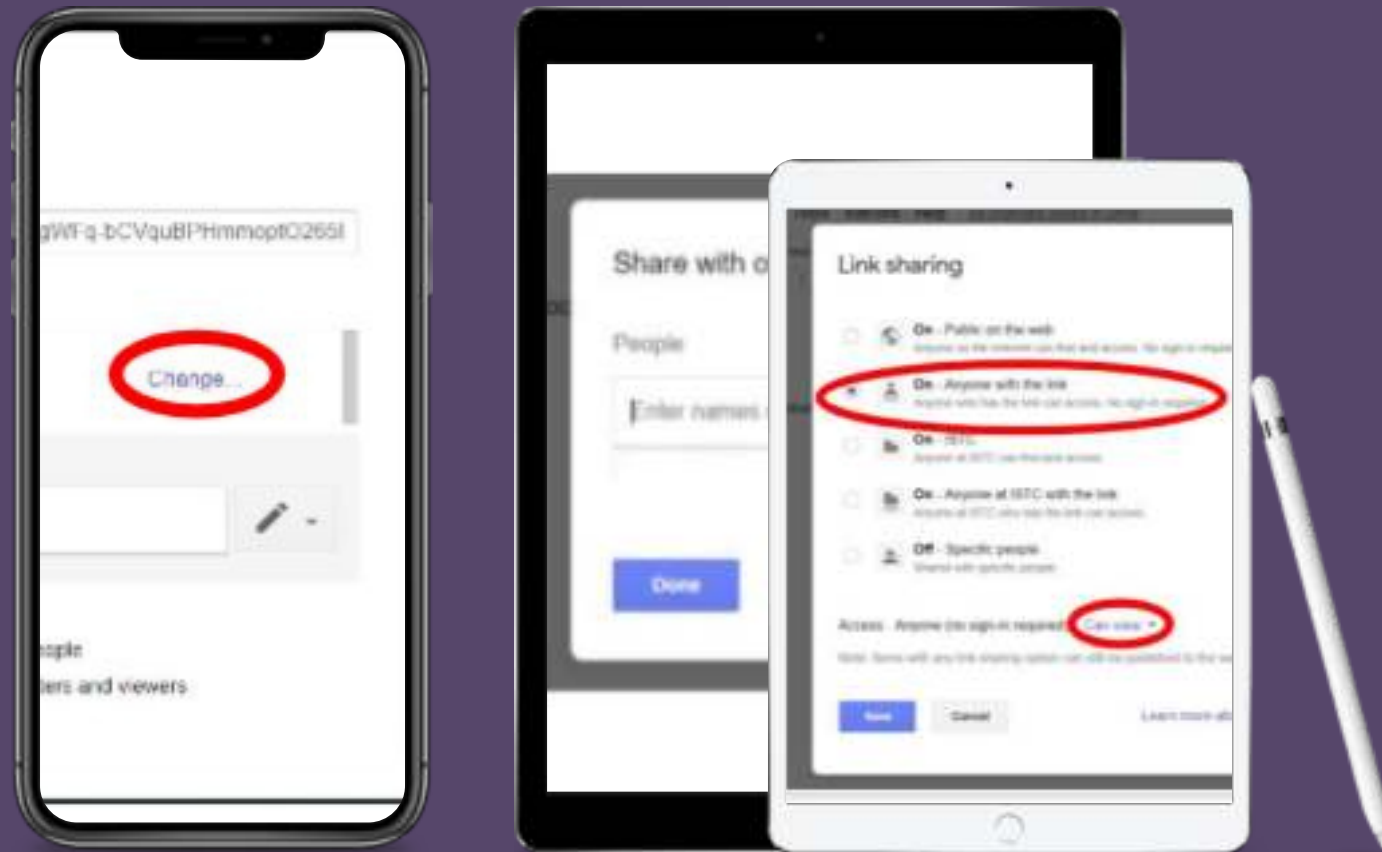
- When posting links, PLEASE ensure that link sharing settings are set to "Anyone with the link can view".

- (Depending on your school's security guidelines for student accounts, you may need to open link sharing for them)
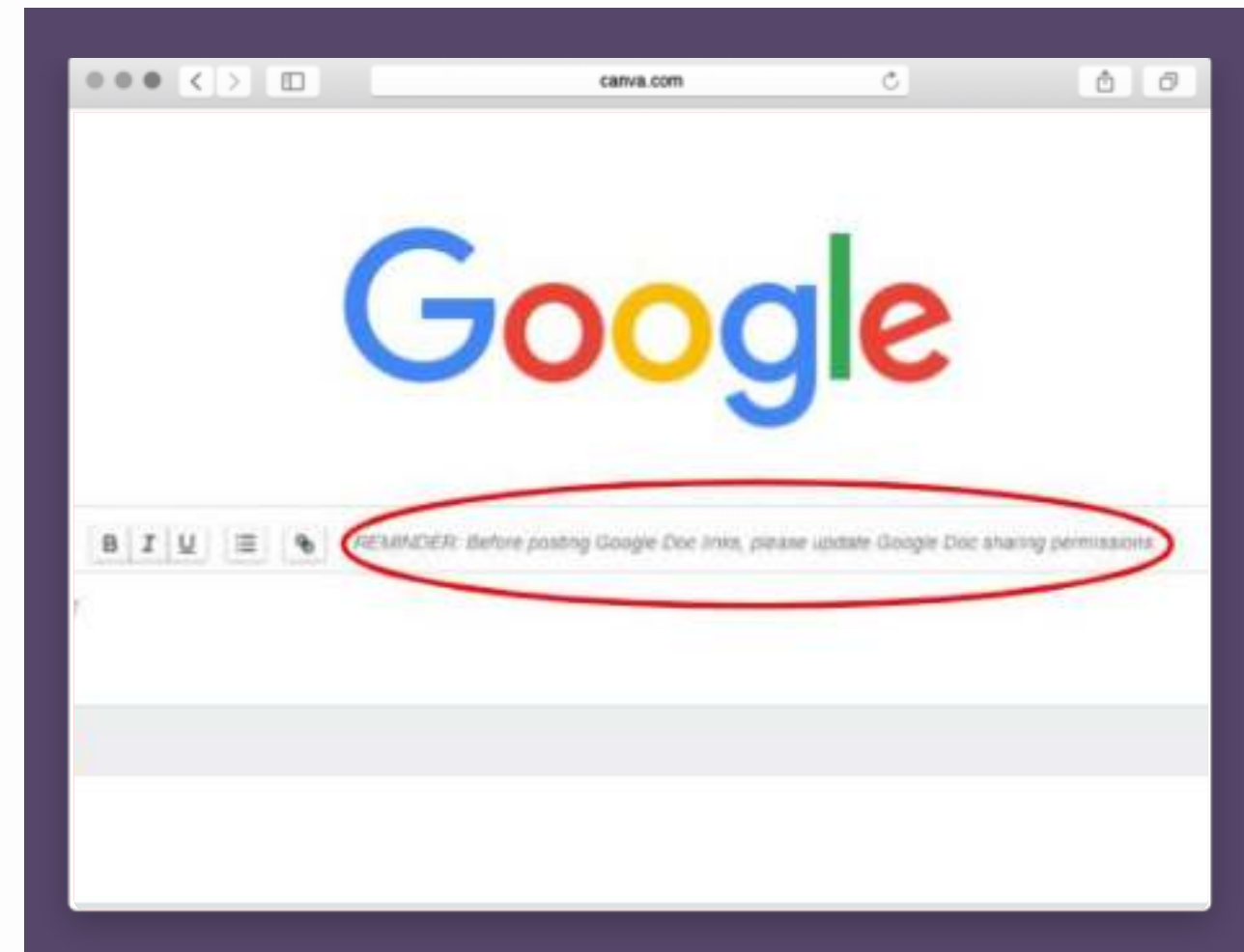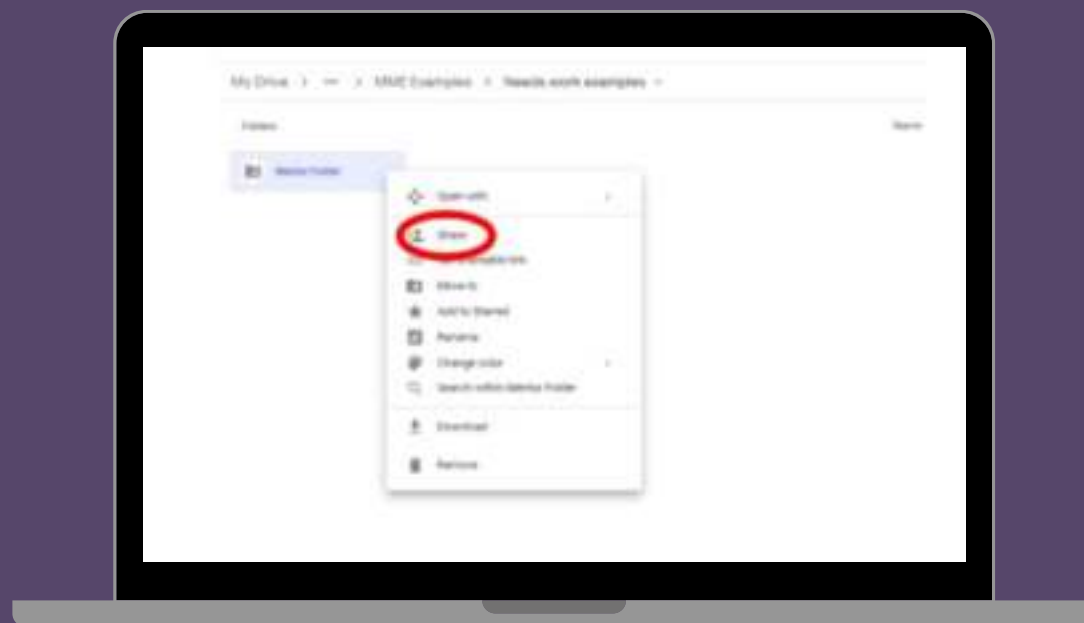
TEACHER COMMUNICATION

How to utilize your mentor as a teammate:

1 First Post to Mentors
Say hello, introduce yourself, and set the tone.

2 Check-ins with Students
Continue to establish oversight.

3 Direct Communication
Use the Participants tab and reach out.

TEACHER FIRST POST

- Some form of first post is required
- Teacher first post establishes a line of communication
  - Parameters and expectations
  - Establish Routine
- Mentors appreciate this! Context is always helpful!

1. Introduces the course
2. Timeline
3. Routine/expectations
4. Establishing oversight and direct line of communication

Teacher:

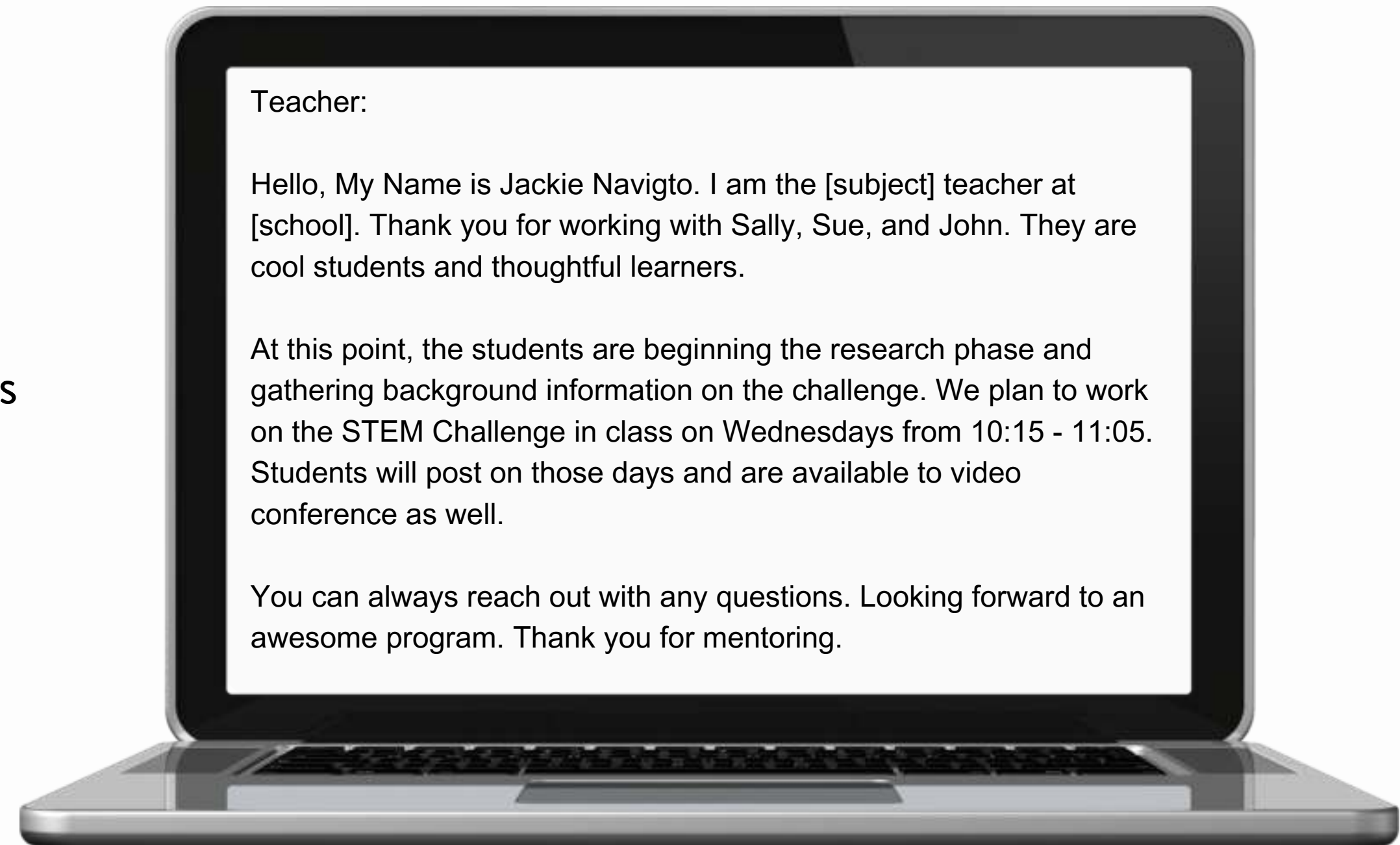Hello, My Name is Jackie Navigto. I am the [subject] teacher at [school]. Thank you for working with Sally, Sue, and John. They are cool students and thoughtful learners.

At this point, the students are beginning the research phase and gathering background information on the challenge. We plan to work on the STEM Challenge in class on Wednesdays from 10:15 - 11:05. Students will post on those days and are available to video conference as well.

You can always reach out with any questions. Looking forward to an awesome program. Thank you for mentoring.

CHECK INS

Checking in with your student over MME in addition to in person/in class time signals to the mentor that there is movement within the project.

Teacher:
Your communications with mentor have been excellent so far. Be sure to find time to keep that communication "solid." He has asked you some questions, so if you don't have time to give him a thorough response, let him know that you will get back to him on [insert date]. That way, you show him that you value his time and guidance.
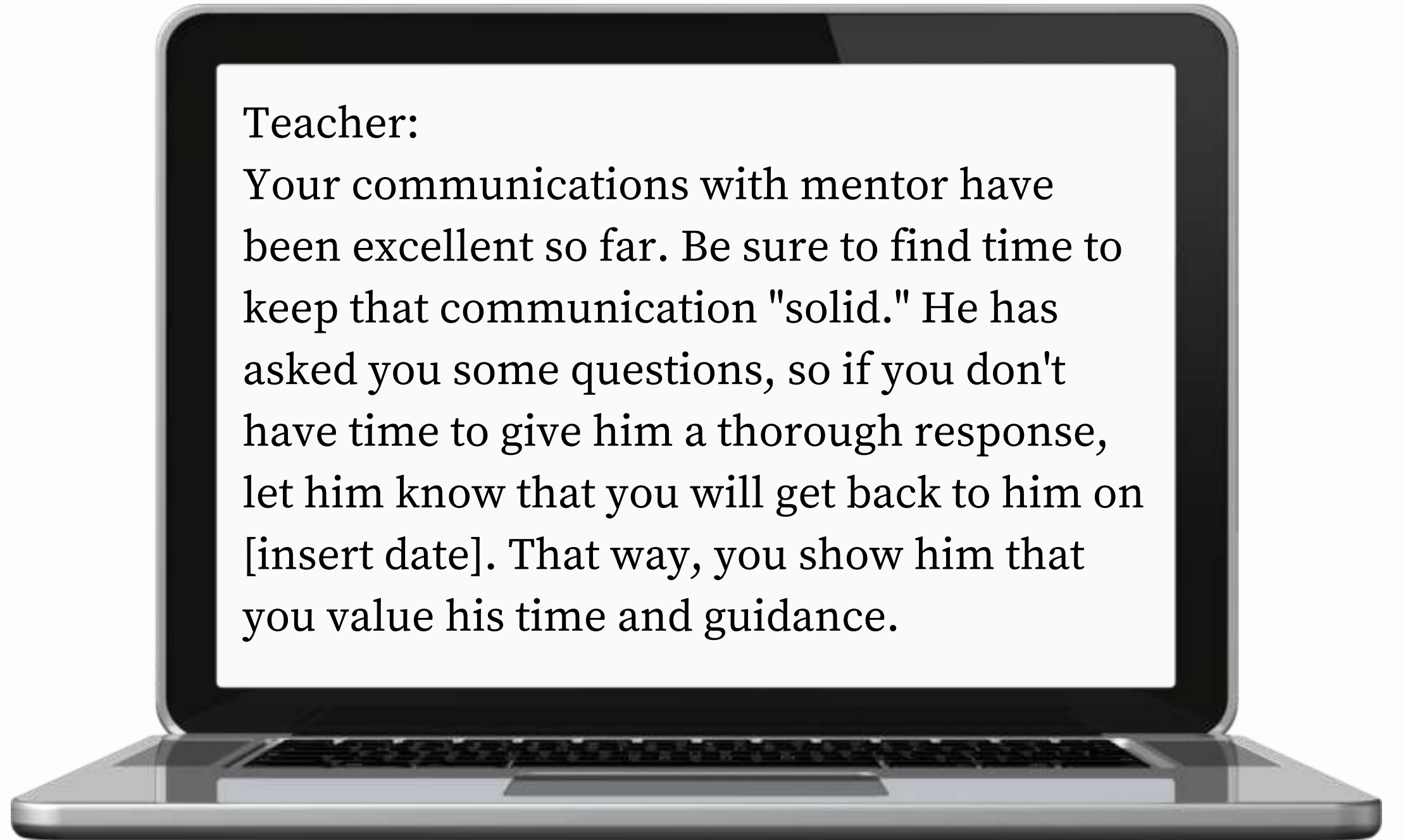
DIRECT OUTREACH

- You can send messages directly to the mentor through the Participants tab.
  - These messages will be delivered directly to their email inbox.

ONBOARDING

Some stellar tips and tricks to prepare your students

1.

BEFORE KICKOFF

2.

DURING KICKOFF

3.

FIRST STUDENT POST

Preparing the students for the mentorship journey ahead!

Strategies to help break the ice and get the ball rolling!

Students should post within 1 week of meeting their mentors. (unless otherwise communicated)

1. BEFORE KICK OFF

INVITE STUDENTS

Get your students on the platform

CREATE PROJECTS

One student, or the teacher, can create projects. The teacher will approve and add in the students according to groups.

BRAINSTORM QUESTIONS

Students brainstorm questions for their mentors either on the challenge statements or otherwise

COMPANY OVERVIEW

Have mentors introduce their company to the students

ICE BREAKING GAME

Mock up and other ice breaking activities can go a long way to faciliating a strong mentor - mentee connection

MENTOR/STUDENT INTROS

Create structure for how you would like mentors and students to introduce themselves. Consider doing intro slides, speed interviews or other activities to assist

3. FIRST STUDENT POST

After mentors have been matched into students' projects post kickoff, the student will post as soon as possible.

- Project details: Context, timeline, deliverables
- Response to something discussed as kick-off
- How can the mentor best support you?
- Ask specific questions

STUDENT:

Hi, our names are Sally, Sue, and John. It is a pleasure to have this experience with you and to learn more about your work at Lenovo. We are interested in exploring how AI can enhance human efficiency. With your background, I would love to gain more information about Lenovo and the work you are doing there. At the moment, we are just starting our research. My next challenge is to more clearly define the problem. My final project is due around the end of April. However, for a heads-up, I will be out of town in mid-March so I will be unable to communicate then. Thank you for agreeing to be my mentor, and I am excited for the process!

MONITORING AND ONGOING COMMUNICATION

Monitoring

Establishing a pattern of communication (Mentor Monday, STEM Fridays); Nudging online

Nudging and Updates

Students can nudge their mentors as well! Mentors are full time employees, parents, etc. Sending a quick follow up message to hold them accountable is both efficient and a good skill for students to practice

Final Stages

Thanking the mentor, sharing final product, & keeping in touch

TEACHER TRACKING TEMPLATE

- Strategies to manage the different projects
  - Stay on top of each group
  - Understand who might need extra support

Project	Notes	Last Posts	# Students	Mentors	Students	Focus Area Topic
Microsoft Mentor - Team Speakers	Everything looks great!	2/28	4			Transportation in chicago - effieciency & more carbon credits
Microsoft Challenge - Team Horchata	Student post needed: please remind your student to post on MME.	2/1	3			Transportation and carbon offsets. Posted slide deck for presentations.
Microsoft Challenge - team CB	Student post needed: please remind your student to post on MME.	2/24	4			Fast Fashion and impact on water

*inquire about templates more aligned with grading communication consistency

MME EMAILS

- Safety - You will receive automated emails from MME...
  - every time a student or mentor posts on MME
  - when a video conference has been scheduled
- Monitoring - You will receive automated reminders from MME...
  - If there has been no communication or movement within a project for 14 days, 21 days, and 25 days (students, mentors, and ISTC will also be notified)
  - If there has been no movement within a project for 28 days, the project will be archived
- ISTC Support with monitoring

STEM CHALLENGE SHOWCASE

FINAL HIGHLIGHTS

01 **Communication!**

We are here for you! We can't fix a problem we don't know about--please let us know if there's anything we can support with!

02 **Teacher Toolkit**

Please reference the teacher toolkit to find those wonderful worksheets to help guide your students through the STEM Challenge process and MME onboarding.

03 **First Posts**

Both teachers AND students will be making a first post on MME -- the more context for mentors, the better!

04 **Map out year**

Create a schedule for when students will be posting on MME or video conferencing weekly, what they should be working on, and support them in communicating this schedule with mentors.

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Liz Copper
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STEM Challenge Coach

AGENDA
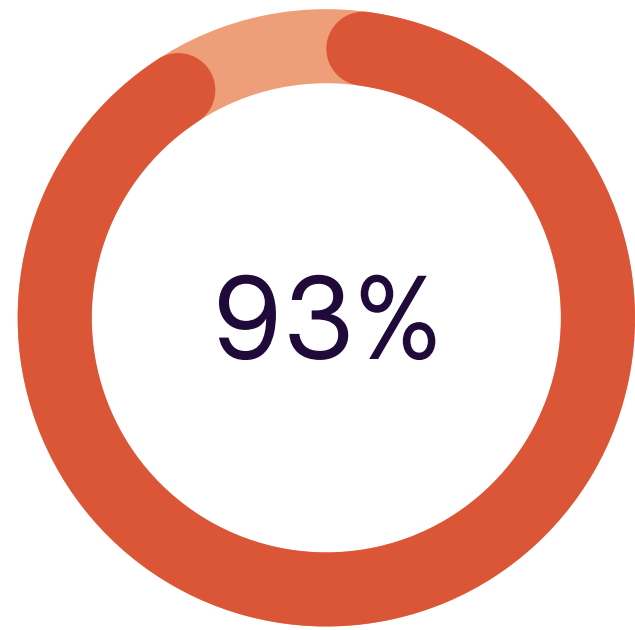
9:00 AM   New Teacher Session

9:50 AM   BREAK

10:00 AM   All Teacher Session

11:00 AM   Mentor Panel

12:00 PM   LUNCH BREAK

12:30 PM   Fostering an Innovative Mindset with Marisol Rodriguez

2:00PM   Wrap Up

GOALS OF TODAY!

- STEM Challenge program Refresher

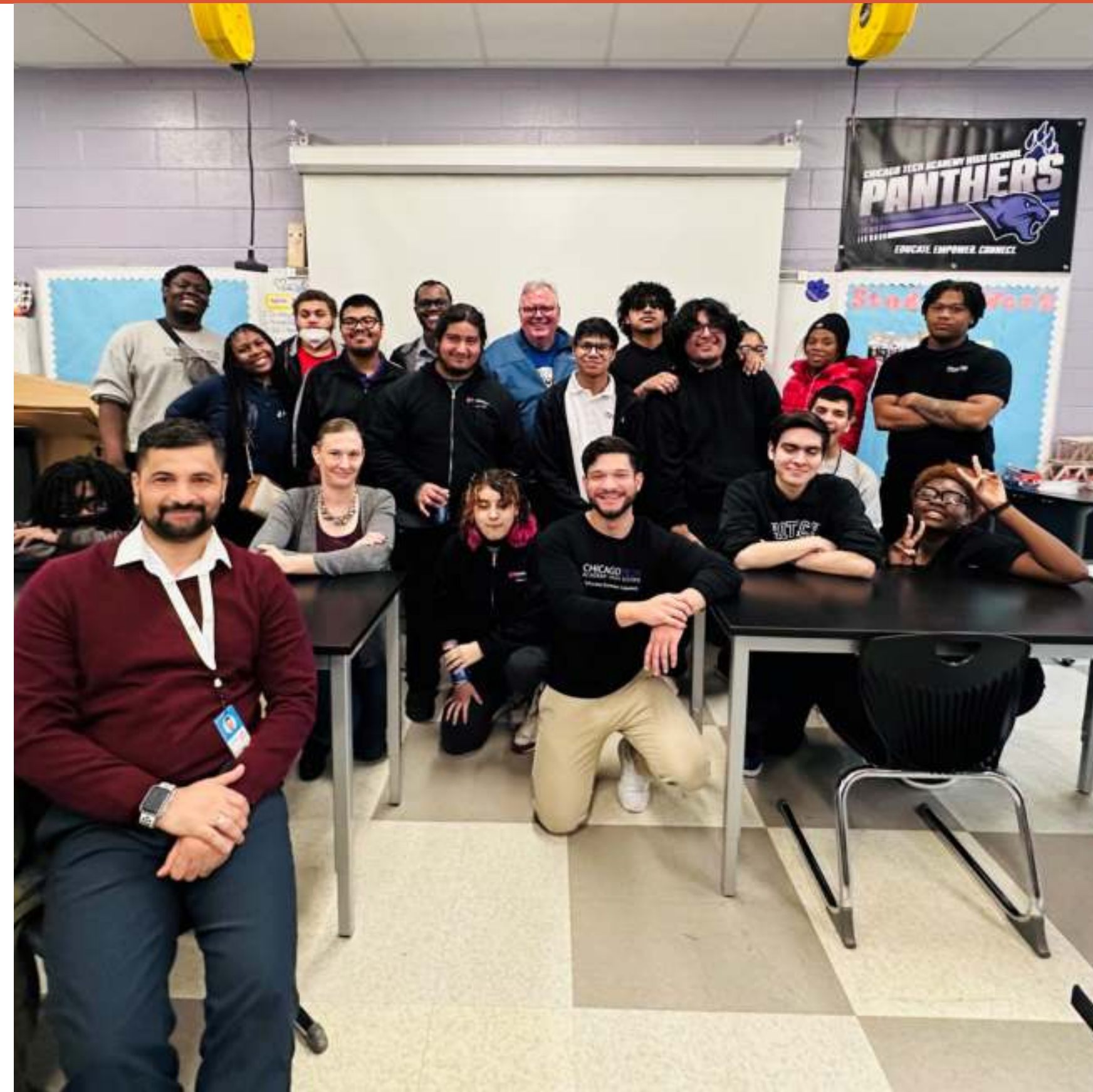- Setting up for success!

- Next Steps

IMPACT 2023-24

93%

Students reported an increased confidence in their STEM and/or research skills

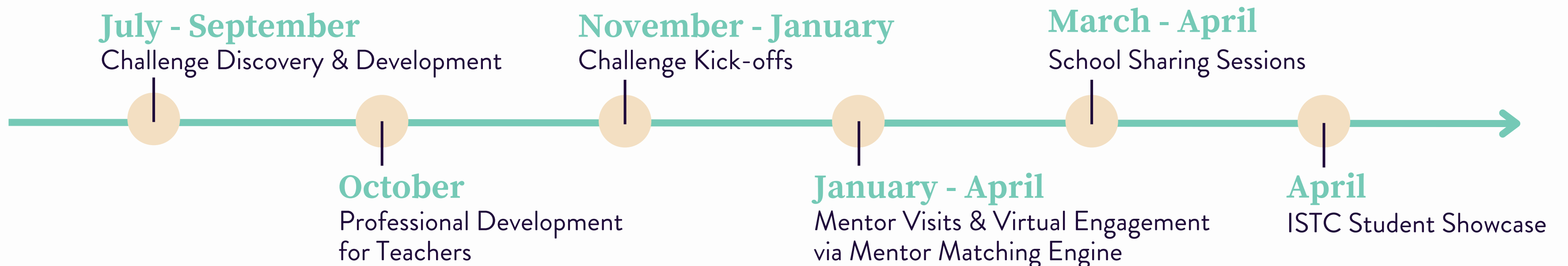83% of students reported it was their first time working with a mentor.

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ISTC Student Showcase

Challenge Kick-offs

GOAL
STEM Challenges Students meet the mentors that they will be exploring, creating, and building innovative solutions. This is a time for mentors and students to break the ice and lay a strong foundation for the the mentorship to come.

Time Frame

November - January

Activities

1. Company Overview By Mentors
2. Mock ups
3. Mentor Introduction Slides
4. Ice breaker Games

Requirements

1. LOC Completed
2. Planning a Kickoff Form submitted (Due Nov 16th)
3. Kickoff agenda shared (1 week before)
4. Students on MME in Groups (1 week before)
5. Photo Releases from students

Mentor Visits and Virtual Engagment

GOAL
Facilitate connection point for students and mentors to build relationship and make progress on the project.

Activities

1. Standing calendar video conferences

2. Standing calendar in-person invitation

3. Routine posting days

Field Trips

GOAL
Time to take the classroom into the real world! Students may have the option to visit mentors at their office or visit a challenge-relevant site.

Time Frame
Feburary - March

Activities

1. Field trips to Partner Company
2. Tour
3. Career Panel
4. Demos

Requirements

1. Planning a Mid-program submitted

Share Out

GOAL
Share outs are a chance for each student group to present their final solutions to their mentors. The goal of the Share out is for the mentors and teachers to provide final feedback and select the team(s) who will be representing their partnership at the final showcase. ISTC is process of product focus. We encourage mentors and teacher to select a group who does the best job explaining their journey of innovation and how they came to their solution, not just what it is.

Requirements

1. Planning a Share Out Form submitted
2. Rubric Shared

Time Frame

Late March - Early April

Showcase

GOAL
The state-wide showcase is a chance to celebrate mentorship and all the hard work our students have accomplished over the past year.

Activities

1. Student panel
2. Symposium-style student presentations
3. Networking lunch

Student Presentations

1. 5 minute pitch
2. 5 minute Q&A
3. Visual Asset such as a PowerPoint on a laptop, poster, pamphlet, scale model, prototype

Requirements

4. Select a presenting group
5. Register all your students and yourself
6. Communicate is assistance is need with transport, field trip approval, etc.

STEM CHALLENGE SHOWCASE

STEM CHALLENGE SHOWCASE

- ISTC's goal is to represent at least one group per teacher at the showcase

- Student Panel & Presentations

- Networking Practice

- Public Speaking Practice

- Culmination of a long project!

- Mentors and Teacher Select Presenting Group

    ○ Process over product!

- Teachers nominate panelist

- **Tentative Date: Tuesday, April 16th, 2024 at GOOGLE**

COMMUNICATION IS KEY

Students and Mentors

Expectation: Weekly communication. If your classroom will be communicating less frequently than that, establish it either in the research details or in the very first post.

Students and Mentors (Again!)

Communication schedule: (STEM Fridays, Mentor Mondays). They should tell their mentor when they plan to post.

Teachers and ISTC

Monthly emails: Updates, deadlines, important tasks and awards!

GETTING UNSTUCK

Support your students

through process!

1. Mentors in person
2. ISTC in person
3. Present your Mentor
4. Peer pitches

**Fostering an Innovative Mindset
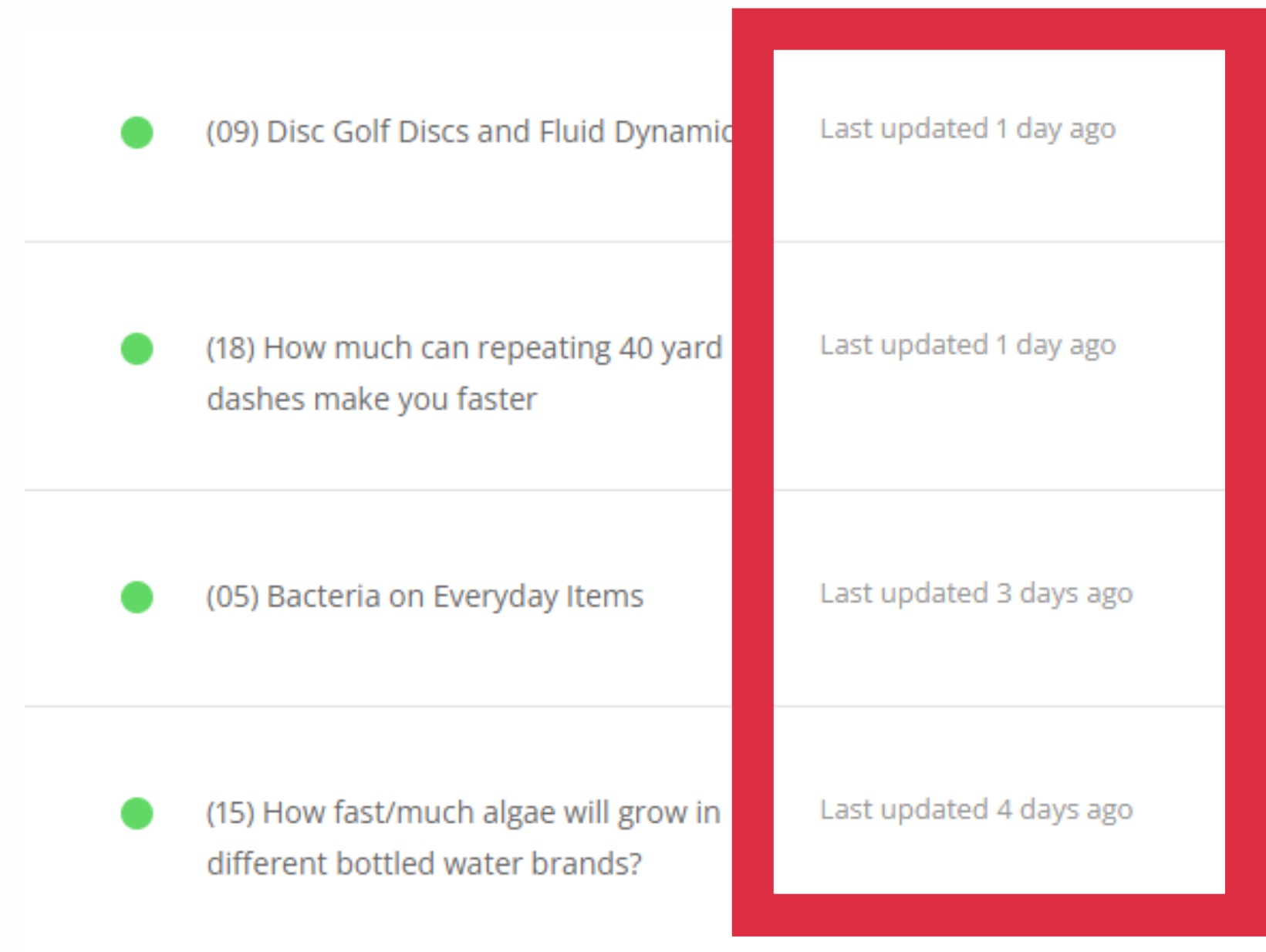W/ Marisol Rodriguez

COMMUNICATION IS KEY

"I think what was important was that we identified a day that I would respond to any questions, or be available to meet. Once we did this, it made our communication pretty consistent."

-Mentor, 2022-23

MONITORING ON MME

- Tracking project updates:
  - For a streamlined way to check which projects need communication reminders, you can check the bottom of the list
  - The projects will show how long it has been since the last update
  - Monitoring is a key responsibility! If ISTC notices there hasn't been communication in your projects, we will nudge both you and the mentor
  - Why is monitoring important? Consistency & Communication

MENTOR EXPECTATIONS

- Mentors attend 2 required training sessions
  - Best Practices, led by ISTC
  - Relationship building w/ Marisol Rodriguez
- Weekly communication & scheduling expectations
- Mentors are expected to stay on a project for the entire duration of the project

CPS VOLUNTEER PROCESS

ISTC

Distribute the CPS volunteer form and collect ID from mentors and provide that information to the volunteer coordinator at each CPS school

Teacher

Notify ISTC of any special information or protocol required for mentors to come in person

The Mentor Matching Engine

The Mentor Matching is an online platform that connects students and teachers with their partner company and mentors.

1. Teacher Onboarding

2. Onboarding Students

3. Student project Creation

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Mentor Matching
ENGINE

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EDUCATION

Resource Alert : Onboarding Checklist

MME PLATFORM - NEW THINGS

- Teachers now have access to the "create" button

- Participant names listed instead of icons

- If other changes roll out, we will let you know as they happen!

NEW
NEW NEW
NEW NEW
NEW

Video Conferencing

Reminders:

- MME or Google Meets
- No Student Emails should be shared!
- 1 recurring meeting link for each group.

Starting off Strong:

- Ask in first post
  - give a few class times to find availability
- Organize Meeting Links for convenience
  - templates available
- Utilize Calendar Invites
  - ISTC can assist in inviting mentors
- Ask for Help!

Resource Alert : Weekly Schedule and Block Schedule

Tool Kit Resources

Video How-Tos
- How-To: Onboard Students To MME
- How-To: Create Group Projects
- How-To: Approving Project
- FAQs

Planning Resources
- Pre-Program Planning
  - Teacher Contract
  - Photo Release
  - Implementation Planner
- Kickoff Planning
  - Planning a Kick off Form
  - Kickoff agenda template
  - Pre/Post Kickoff Visual timeline map
- Mid-Program Planning
  - Tracking and Video Conferencing Planning Tool
- Share out Planning
  - Planning a Share out

Implementation Resources and Activities
- Teacher Resources
  - Teacher and Student Onboarding Checklist
  - Process Journaling Recurring Template
  - Mapping out for success
  - NGSS Project Alignment

- Student Communication Tools
  - Classifying Communication Activity
  - Sentence Starters
  - Group Accountability Survey
- Idea Generation
  - Crazy 8 Sketching
  - Brain Writing
- Design Thinking Activities
  - Empathy Map
  - Pains Storming
  - Persona Activity Example
  - Mock-Ups Direction
  - Prioritization Matrix
  - Solution Matrix
  - Design Thinking Overview Video
- Rubrics and Final Product
  - Criteria Judging Rubric Template
  - Sliding Scale Rubric Template
  - Poster Presentation Rubric
  - Final Power Point Presentation Example
  - Final Pamphlet Examples

Challenge Passwords: istc

STUDENT ADVISORY BOARD

Goal:

- Student leadership and voice across ISTC programming

Timeline:

- 1-2 times per month, November-May

Meeting topics:

- Networking
- Development and Marketing
- Professional Writing
- Interviewing
- ISTC Special Projects

Applications will open now!

FINAL HIGHLIGHTS

01 **Communication!**

We are here for you! We can't fix a problem we don't know about--please let us know if there's anything we can support with!

02 **Toolkit**

We have created resources to help you along the way. Don't see what you need? Let us know!

03 **MME and Video Conferencing**

Both teachers AND students should be utilizing MME and video conferencing with mentors -- the more connections, the better!

04 **Student Advisory Board**

We are so excited for the return of our MME student advisory board! Please let your students know when applications open!

MENTOR PANEL

SPEAKERS:

Lucas Sardenberg

*Toni Hawes*

Andy Anderson

TEACHER CONTRACT

Please fill out your teacher contract! The contract will collect information on the following:

- What is the timeline for your classroom?
- Which days of the week will your class be communicating with mentors?

https://tinyurl.com/stemistc

LUNCH!

Please take 30 minutes to grab some food and get comfortable before we transition into our afternoon session!
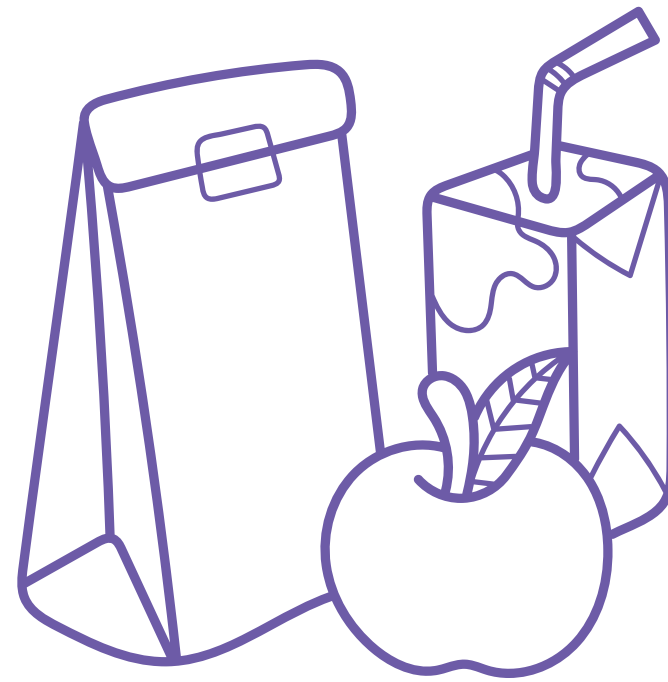
"Fostering An Innovative Mindset"

Led by: Marisol Rodriguez

THANK YOU!

Welcome to the STEM Challenge program--we are so excited to get started with you all!

https://tinyurl.com/stemistc