

Guidance Document

For Inspire Engineering Mentoring Programme Coordinator



Developed by Matt Jackson, Tom Kostelak, Leah Pervere, and Sarah Quatieri,
students from Worcester Polytechnic Institute, for:
LONDON TRANSPORT MUSEUM | 39 WELLINGTON STREET, LONDON WC2E 7BB

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Programme Overview

Congratulations on your role in supporting young people advance personally and professionally. This handbook will serve as a guidance document to the entire programme and help you to execute the programme for the mentors and students. This handbook will contain an overview of the programme, how to train the mentors, an overview of the lesson plan, and several other additional resources.

Programme Structure

The basis of the programme will be a ten-month commitment for the mentor to meet with his or her three mentees. This will allow the mentees and mentors to maintain regular contact and will reach the goals of the programme.

The programme plan is to begin with several structured meetings that will allow the mentor and mentees to get to know one another. Additionally they will begin to develop basic personal and professional skills. As the programme moves along, there will be freedom in the programme so that mentors can address the specific concerns of their mentees.

As an overview, here is the basic structure of the programme:

- Minimum commitment of one year
- Meet for one hour once a month (ten monthly meetings)
- 3:1 student to mentor ratio
- Programme will begin with structured lesson plans (Meetings 1-7)
- Later meetings will have objectives and activities, but will have freedom to adjust based on mentee's needs

1 Year
Commitment

Meet once a
month

3:1 mentee to
mentor ratio

Programme Implementation Timeline	
<i>Task</i>	<i>Month</i>
Recruitment Materials	July (Recruitment materials should be sent out at least two months in advance to provide ample time for interest to be gauged.)
Pre-Programme	Security checks should be run on all selected mentors and material handbooks should be printed.
Mentee Orientation	Early September
Mentor Orientation	September (NOTE: This Orientation should happen on weekdays within the first two weeks of September to avoid conflict with the TFL graduate scheme.)
Matching Process	Matching should be completed before the start of the programme.
1 st Meeting	October
2 nd Meeting	November
3 rd Meeting	December
Mentor Check-in Meeting	Late December/Early January
4 th Meeting	January
5 th Meeting	February
6 th Meeting	March
7 th Meeting	April
Mentor Check-in Meeting	Late April (After all groups have completed meeting 7)
8 th Meeting	May
9 th Meeting	June
10 th Meeting	July
Mentor Check-in Meeting	Late July (After all groups have completed meeting 11)

Goals and Objectives

The following is the goals and objectives of the programme. This is a guide to what the programme will accomplish and how it will do so.

Engineering Mentoring Strategic Development Plan			
Overall	Engineering Knowledge	Professional Development	Personal Development
<p>Our Mission: To support students' growth personally and professionally</p> <p>Our Vision: To encourage students' personal and professional development by matching them with a mentor who can encourage them in their daily lives and encourage them to continue on in engineering.</p>	<p>Priority: To develop the students' understanding of engineering</p>	<p>Priority: To encourage students' professional development</p>	<p>Priority: To encourage students' personal development</p>
	<p>Objectives</p> <ul style="list-style-type: none"> ○ Give the students an overview of many engineering fields ○ Provide an understanding of daily life in the engineering industry ○ Allow the students to gain a deeper understanding of engineering by relating it to everyday items 	<p>Objectives</p> <ul style="list-style-type: none"> ○ Explore possible career paths for engineering and the opportunities that each present ○ Build job skills (e.g., CV writing, interview skills) 	<p>Objectives</p> <ul style="list-style-type: none"> ○ Building students' self-confidence through their accomplishments ○ Help find and build the students' ambition and enthusiasm. Use real-world activities to bring life to the programme and explore the students' ambitions ○ Improve students' communication skills by learning how engineers communicate

Recruitment

This section will give an overview of what type of mentors are ideal for this programme and how best to recruit these mentors. The frequently asked questions document on the following page has been developed for distribution to potential mentors, as it will answer many of the questions that TfL engineers targeted for recruitment may have.

Ideal Mentors

- 2nd or 3rd Graduates or those who have just rolled off the graduate scheme

Ideal mentors have the following characteristics:

- Enthusiasm
- Passion for engineering and working with youth
- Concern for youth and a desire to help build the future

The following commitment will be expected of mentors:

- 10-month year commitment to Inspire Engineering Mentoring Programme
- 1-2 full weekdays of training before the programme
- Monthly 1-hour meeting with mentees at Greenwich UTC
- Quarterly check-in meetings with the London Transport Museum at LTM or a TfL facility

Benefits for Mentors:

- Develop professional skills of teaching others
- Rewarding experience working with children
- Mentoring will count towards chartership

Logistics

- Recruitment of the mentors should begin at least two months prior to the start of the programme. For instance, recruitment should begin in July for a programme that starts in September.
- Recruitment can be done through emails containing desired qualities of a mentor, the benefits they would receive from the programme, and answers to common questions that potential mentors may have.

The number of mentors should be based on the number of students, with a 3:1 mentor-to-student ratio. If there are 50 students in the programme, then there should be approximately 17 mentors.

Frequently Asked Questions for Transport for London engineers

What is the purpose of the Inspire Engineering Mentoring Programme?

The objective of the Inspire Engineering Mentoring Programme is to aid students at Greenwich UTC in developing a deeper understanding of engineering while also encouraging their personal and professional development. This will be done by having students meet in groups of three with a mentor who works in the engineering industry at Transport for London.

How much time would I have to commit to the programme?

The programme runs over the course of the September 2014 – July 2015 school year. You would be required to attend the following meetings:

- A day-long training session in early September
- 10 1-hour meetings with your mentees at the Greenwich UTC campus – one meeting each month from October to July
- 3 1-2 hour evening “check-in” meetings with the programme coordinator every 3-4 months throughout the course of the programme

Lesson plans would be prepared for you, although you would have the option to develop your own during the last three meetings of the programme. Between sessions you would be asked to review the lesson plan for the next meeting and to occasionally check a virtual message board that will be set up to allow mentors and mentees to communicate in between meetings.

Do I need to have mentoring experience?

No, you do not. All you need is enthusiasm, a passion for engineering and working with youth, and a concern for youth and a desire to help build the future. Although mentoring experience would certainly be helpful, this programme has been designed so that any TfL engineer can serve as a mentor. As mentioned previously, you would receive training at the beginning of the programme and lesson plans would be prepared for you. Check-in meetings throughout the programme will also allow you to receive any necessary support from other mentors or the programme coordinator.

What benefits will I receive from the programme?

This programme will benefit your professional skills, by developing your communication and teaching skills. Mentoring can also be a very rewarding experience as you work with students. It may also fulfil aspects of your UK-SPEC or other qualification requirements. This will depend on the qualification you are working towards and your field of engineering; however, you may be able to use the programme as a demonstration of your communication or interpersonal skills, personal responsibility, teamwork, or ability to manage or teach others.

Who should I contact if I have any questions?

If you have any questions or concerns, or are interested in joining the programme as a mentor, you should contact the programme coordinator.

Safeguarding

The London Transport Museum is currently revisiting its safeguarding section therefore this section should be revisited once that is completed to ensure that the programme's safeguarding matches LTM's policy.

CRB

All mentors should be CRB checked through STEMnet. This looks at the history of the individual and is used to make sure they are safe to work with students. As the programme coordinator, it is important to make sure the mentors have been CRB checked before they enter any training or the programme itself.

Training

This section is dependent on what comes of the LTM Safeguarding Policy. If a safeguarding training programme is established, it would be ideal if all mentors attended the session to get a complete overview of what safeguarding entails. If this does not happen, the mentors will have to be trained on what safeguarding involves.

Safety

The ultimate goal of safeguarding is to provide a safe environment for the mentors and mentees. The following are basic factors to explain to the mentors to ensure safeguarding in the programme.

- The groups have been set up in groups of three so that it is a safer environment for the mentors and mentees. The students are safer as it is a larger group, and the mentor will not face many uncomfortable one-on-one situations.
- There should be no physical contact between the mentors and mentees.
- There should be no photography or filming without permission from the school administration and the programme coordinator.
- Mentors should not interact with the mentees via social media. Social media is not moderated, can lead to falsified information, and does not enhance the professional development the mentees should be working towards.
- Any e-mentoring needs to ensure that safeguarding is used. Messaging should be done on a public platform and only as directed by the program. There should not be private communication via text message, email, or other digital communication as this does not provide a safe professional environment

Confidentiality

Mentors should not openly discuss the specifics of their mentoring relationship with their mentees as this does not provide a good environment. Mentees should feel comfortable working and confiding in their mentor and should not be worried about the mentor sharing private information.

There are two situations where the mentor is instructed to break the confidentiality between themselves and their mentee.

- The first being if one of their mentees is in any danger. If the mentor feels the mentee is any physical or emotional danger, he or she should contact the programme coordinator or the school principal so that they can determine an appropriate course of action.
- The second situation is if the mentor needs assistance in how to work with the mentee. Throughout the programme the mentor may find themselves in challenging situations. The mentor should come to the programme coordinator to discuss how to work through the situation so that proper safeguarding is maintained.

Mentee Orientation

The student orientation will take place at Greenwich UTC at the end of a school day about a month before the programme begins. In attendance will be all of the mentees in the programme, Greenwich UTC's teachers and principal, and the parents of the mentees if possible. An 80-minute orientation presentation will be given to the audience. The Student Handbook should be distributed before the orientation begins. The orientation will consist of the following (note that these times are rough estimates and can be changed at your discretion):

- Why the programme has been developed (5 Minutes)
- The structure of the programme (15 Minutes)
- The goals and objectives for the students (10 Minutes)
- The roles and responsibilities of the students (10 Minutes)
- The mentor and mentee relationship (15 Minutes)
- Answering any questions about the programme (10 Minutes)
- Filling out the matching forms (mentees), intended learning outcomes form (mentees), and consent form (parents) (15 Minutes)

By addressing these key topics, the students should be thoroughly prepared for the programme they are about to begin.

Why the programme has been developed (5 Minutes)

The description of the purpose of programme should be concise. This section should identify the problem of the lack of qualified engineers currently in the working field and the fact that this programme will prepare A-level students at Greenwich UTC for their next career step as an engineer.

The structure of the programme (15 Minutes)

This section will describe how the programme will be organized and evaluated to best prepare the students to become successful engineers. In this section, the following structure specifications need to be addressed:

- The programme will use a group mentoring style that will run over the course of a ten months with 10 monthly meetings
- Each group will be made up of three mentees and one mentor
 - A matching form will place students with similar engineering interests to each other to make groups more compatible
 - Career paths and personalities will also be considered to help match the groups
- The groups will meet for an hour each month
 - These meetings will consist of carefully-crafted activities that will enhance the students' professional and personal growth, preparing them for the real world.
- Throughout the programme, mentees will fill out evaluations
 - Intended Learning Outcomes form (the students will fill this out at the end of their orientation)
 - Helps identify what the students want to gain from the programme
 - Impact Form (filled out at the end of the programme)
 - Helps identify what the students have learned from the programme
 - Nutshell Form (filled out after each meeting with their mentor)
 - Helps the students keep track of how each lesson affected their personal and professional growth

Goals and Objectives for the Students

- From the lesson plans used in this programme, the students will come to understand what engineers do, the career routes and the options available to them, and how to succeed when they take their next career step.

Roles and Responsibilities

This section will describe how the mentees should conduct themselves to make their mentoring experience a success. Emphasise the three main responsibilities the mentees need to fulfil to succeed in this programme:

- Commit to the programme
 - Completing the course is crucial for mentees to gain the knowledge necessary for succeeding in their next career steps.
- Attend every meeting
 - All the meetings are specially tailored to increase the students' professional and personal growth
- Complete all homework assignments
 - The homework assignments have been designed to prepare mentees for tasks they will need to complete in the future

By fulfilling these responsibilities the mentees should develop important life skills, learn about the world of work, and plan for the future, while also hopefully improving school attitudes and performance.

Mentor & Mentee Relationship

This section will discuss the mentee and mentor relationship, and what is expected of each party. The mentee and mentor relationship is very important to the success of the programme, and building a positive relationship between the mentees and mentors is vital in ensuring that the mentees gain their full potential from this programme. To do this, both mentors and mentees must commit to the relationship and make every effort to follow proper safeguarding guidelines.

Matching

This section outlines how mentees and mentors should be matched. To ensure the best group formation, it is recommended that these steps be followed:

- **During orientation, have the students fill out matching forms.** This matching form, which can be found on page 29, will provide you with the following information about each student: their engineering interests (which types of engineering they're most interested in), what career path they plan to follow, their personality, and other information about what they want to learn from the programme. There are also three questions that are intended to identify the student's personality in a group setting, each of which separates the students into one of two categories.
- **Match students in groups of three based on their answers.** Students should be matched based on the following criteria, in order of priority:
 1. **Engineering interest** – try to match students primarily on the types of engineering they are interested in (e.g., group together 3 students who are interested in civil engineering).
 2. **Career path** – after interest, students should be matched based on which career path they plan to follow (e.g., group 3 students who are all planning to attend university).
 3. **Personality** – to avoid conflict, students should be matched based on their personalities and how they would act in a group. On their form, students are asked three questions that characterize them as: 1) a leader or follower, 2) extroverted or introverted, and 3) motivated or unmotivated, as explained below. When matching the students it is best to have a mix of each set of traits. Groups with all followers and no leaders or all introverts and no extroverts will not be as effective as groups that contain a mixture of both.
 - Question 1: “If you were asked to complete a group project, which task would you be most comfortable in completing?”
 - “Assigning roles to the members of the group” → Leader
 - “Completing any task that needs to be done” → Follower
 - Question 2: “When given the option to work in a group or alone, you would generally:”
 - “Work in a group” → Extroverted
 - “Work alone” → Introverted
 - Question 3: “If your mentor gives you an optional assignment, how likely are you to complete it?”
 - “Very likely” → Motivated
 - “Not likely” → Unmotivated
- **During training, have the mentors fill out matching forms.** This form, which can be found on page 30, will provide you with the following information about each mentor: their current engineering field, which career path they took to enter the industry, what experience they have with mentoring (if any), and other information about their career.

Match mentors to groups of students. Try to match mentors to groups of students that they have something in common with. If three students are in a group because they are all interested in civil engineering, they should be matched with a mentor who is a civil engineer whenever possible. If three students are grouped based on the fact that they plan to attend university, they should be matched with a mentor who attended university whenever possible. If these criteria cannot be filled, then the mentors may be matched based on the students' personalities. Mentors with more experience may be able to better handle groups that consist primarily of leaders and extroverts. Less experienced mentors, however, may be able to better handle groups that are primarily followers and introverts.

Mentor Orientation

Before the programme begins, the mentors will attend an orientation session at the London Transport Museum. This orientation session will be a day-long session offered on a weekday no later than two weeks before the programme begins. This session will consist of a 70-minute orientation presentation followed by a training session. The orientation presentation will cover the following topics (times have been roughly estimated and can be changed at the museum's discretion):

- Why the programme has been developed (5 Minutes)
- The structure of the programme (20 Minutes)
- The goals and objectives for the students (5 Minutes)
- The roles and responsibilities of the mentors (10 Minutes)
- The mentor and mentee relationship (15 Minutes)
- Answering any questions about the programme (10 Minutes)
- Filling out the matching form (5 minutes)

By addressing these key topics, the mentors should be thoroughly prepared for the programme they are about to begin.

A description of why the programme has been developed (5 minutes)

The description of the purpose of programme should be concise. This section should identify the big-picture problem that the programme aims to address: the lack of students entering the engineering field. It should also identify the short-term goal of this programme: to prepare A-level students at Greenwich UTC for their next career step as an engineer.

The structure of the programme (20 minutes)

This section will describe how the programme will be organised and evaluated to best prepare the students to become successful engineers. The following structure specifications should be addressed:

- The programme will use a group mentoring style that will run over the course of a school year with 10 monthly meetings.
- Each group will be made up of three mentees and one mentor.
 - Groups of three students will be matched based primarily on their engineering interests, but their career paths and personalities will also be considered.
 - A matching form will place each mentor with a group of students who will ideally all have something in common with the mentor.
- The groups will meet for an hour each month.
 - These meetings will consist of carefully-crafted lessons that will enhance the students' professional and personal growth, preparing them for the real world.
 - For meetings 1-3, the lessons will focus on understanding the engineering field and what engineers do on a day-to-day basis.
 - For meetings 4-7, the lessons will focus on professional growth, with the students doing activities such as writing CVs and participating in a mock interview.
 - For meetings 8-10, the lessons will be more open-ended. Lesson plans have been developed that the mentors can use. However, if mentors feel that they can develop their own lesson plan that is more relevant to their mentees' needs, they are encouraged to do so.
 - If they do this, mentors should be asked to provide these lesson plans to LTM at their next check-in meeting, for the purpose of planning future activities.
 - For meeting 10, it is recommended that the students prepare a closing presentation that will be presented to their own group, or – if possible – to all participants of the programme.
- Mentors will have check-in meetings with the programme coordinator every three months (3 times over the course of the programme) to discuss positive and negative aspects of their

previous meetings, as well as possibly give critiques of the programme. These will also allow the mentors to ask other mentors any questions they may have.

Goals and objectives for the students (5 minutes)

From the lesson plans used in this programme, the students will come to understand what engineers do, the career routes and the options available to them, and how to succeed when they take their next career step.

Roles and responsibilities (10 minutes)

This section will describe how the mentors should conduct themselves to create a safe environment for the mentees that encourages learning. Emphasise the five main qualities a mentor needs to possess to have a successful relationship with their mentees:

- Be supportive and patient
 - This will make everyone more comfortable over the course of the first several meetings.
- Be honest
 - By being honest, the students will get to who the “real” mentor is and will make their professional relationship much stronger.
- Do not be a teacher
 - It is better to be a dependable, consistent mentor that a mentee can rely on.
- Provide constructive feedback
 - Mentors empower the mentees. Therefore, mentors should give constructive feedback to help bolster their mentees’ confidence and encourage them to continue asking questions.
- Have fun
 - The programme will provide lessons to help the mentees grow; by keeping these activities engaging and fun, the students will grow and learn with the mentors’ guidance.

Specific guidelines that the mentors should follow are presented in the mentor resource handbook.

Mentor & Mentee Relationship (15 minutes)

This section will identify the importance of a good relationship and safeguarding precautions for a safe learning environment. It is important to warn the mentors about possible challenges they may encounter during the programme. Warn the mentors that the both the mentors and mentees:

- May be nervous
- May not yet trust each other

It is important to always keep a positive attitude in the meetings to get past these obstacles.

To minimise obstacles at the beginning of the programme, give them tips about how to get the programme started:

- Be there
- Be a guide, not an all-knowing authority
- Be a role model
- Help your mentees have a say in your activities

Then address the importance and severity of safeguarding. Identify the steps that have been taken to make the programme safe, as well as the negative implications if a mentor does not follow safeguarding precautions.

Questions (10 minutes)

Fill out & collect matching forms (5 minutes)

Mentor Training

Goal: Prepare the mentors to communicate effectively with their mentees

Overview:

1. Take a 10-minute break after the orientation session that serves as the first phase of the training day.
2. The first 2 hours of training will be dedicated to the first 4 activities: Miscommunication, Qualities of a Good Mentor, Rapport Building, and Motivating Factors.
3. After these 2 hours, take an hour-long lunch break.
4. The next 2 hours will be dedicated to the final 3 activities: Active Listening, Attention of the Intention, and Confidence Identification

The following pages list in sequential order the activities to complete this training. Each of the activities will use this structure to identify its purpose, how it should be run, and the lessons that should be gained.

Structure:

1. Section Contents: Timing of each part
2. Materials: What is needed to complete the activity
3. Preparation: Any introduction or work that needs to be done to set up the activity
4. Activity: This will be the actual activity that is being done, with instructions of what to do
5. Debrief: The purpose of the activity
6. Ask: Question(s) to ask the group for them to discuss the purpose of the activity and what they learned from it
7. Mentors Should Think About: How this relates to mentoring and what the mentors should learn from this

Miscommunication

Activity Outline

Preparation (5 minutes)

Miscommunication Activity (10 minutes)

Debrief (10 minutes)

Materials:

- 1 blank sheet of paper per person
- 1 writing utensil per person
- Large paper and markers

Preparation:

Have all mentors pair off and sit back to back.

Person with the longest hair will draw first.

Miscommunication Activity

1 minute

The first person should draw the first simple picture that comes to their mind. It can be anything – preferably not a house. Remind the pairs that they may not look at each other's paper at any time during the exercise.

After a minute the first person should stop drawing. Explain that the objective of this activity will be to get their partner to draw the same thing they have just drawn.

Rules:

The person who drew the picture may only describe their objects in simple terms.

For example:

- “Draw a line from the left side of the page inward.”
- “Draw a pea-sized circle above the line.”

They may not look at what their partner is drawing at any point, and the second partner may not ask any questions. They may only respond with “okay” or “could you please repeat that.”

3 minutes

After three minutes, have everyone stop drawing and reveal their pictures to each other.

Debrief

This activity is about effective communication.

Ask

(To each group:) Why do you think you were successful or not?

What was the hardest part about this exercise?

Mentors Should Think About:

- Perspective, and how a starting perspective can make a huge difference
- Explaining things clearly from the beginning
- Checking in often to make sure things are understood
- Encouraging questions

Ask

What keeps mentees from asking questions?

Mentors Should Think About:

On large paper, list all reasons the group comes up with.

Mentees often do not want to admit that they do not understand something. They will not ask questions for many reasons including the following:

- Fear of looking stupid.
- Already asked once/fear of frustrating instructor
- Lack of confidence

That being said, mentors should be reminded that they too will face questions they may not be able to answer and that is **OK**.

Qualities of a Good Mentor

Activity Outline

Preparation (5 minutes)

Qualities of a Good Mentor Activity (20 minutes)

Debrief (10 minutes)

Materials

- 1 piece of large, blank poster paper per group
- 1 marker per person

Preparation

Have all mentors pair off with 1 large, blank poster.

Qualities of a Good Mentor Activity

5 minutes

Have each group discuss what qualities make a good mentor and write down these qualities.

5 minutes

Once the groups create a sizable list, have them walk around the room to look at the other groups' lists. Have the mentors write down on their own list any qualities they missed.

10 minutes

With the completed list, have each mentors circle three qualities they possess on a good day. Have each mentor verbally explain the importance of one of their circled qualities to the group.

Debrief

This activity is about identifying important qualities for mentors.

Ask

Why are these qualities important for a mentor?

Mentors Should Think About:

- Good mentoring qualities are effective in creating a comforting environment of the mentees.
- Effective qualities will increase the learning potential of the mentee.
- To always keep in mind how to behave around the mentees.

Rapport Building

Activity Outline

Preparation (3 minutes)

Rapport Building Activity (25 minutes)

Debrief (5 minutes)

Preparation: 3 minutes

Mentors should pair off for a casual conversation.

Rapport Building

If possible, write these four components on a board as you go through the exercise so that mentors may refer back to them.

Disclosure

- Offer something (PAUSE)
- People talk more if you first offer something about yourself

Compliments

- Base on who they are
- Do not compliment superficial things, make them more personal
“Tom, I really like that you are so dedicated to your work.”

Name

- Use peoples name
 - Avoid during awkward situations

We

- Implies support and teamwork
- We should do.....
- We should try...
is much better when talking about group work

The conversation can be about anything. Their job, favourite food, movies, television etc. Focus on rapport building skills: **disclosure, compliments, names, and the use of “we.”**

20 minutes

Have a short 3-4 minute conversation, trying to use disclosure. Repeat for each of the rapport building techniques, switching partners between each conversation.

5 minutes

Have one conversation trying to encompass all four components. Switch partners and repeat.

Debrief

Ask (5 minutes)

Was everyone able to use some of the techniques?

How did you feel about incorporating them?

Was it hard or easy?

Mentors Should Think About:

It is not always possible to use these techniques in conversation. However, they are powerful tools to improve conversations and rapport with mentees you do not know well. **Try to be conscious of areas in conversation in which you can use these rapport building techniques and use them as often as possible when appropriate.**

Motivating Factors

Activity Outline

Motivating Factors Activity (22 minutes)

Debrief (5 minutes)

Materials:

- 1 blank sheet of standard-sized (A4) paper per person
- 1 writing utensil per person

Motivating Factors Activity:

10 minutes

On their piece of paper, have the mentors list what motivates them. You can give some examples to help them get started:

Examples:

Money	Helping Others
Family	Seeing an End Product
Innovation	Freedom

Have each mentor rank the motivations they've listed in order of importance as best they can. Then have them pair up.

Have each person think of a task or project that they often have to convince someone else to do or take part in. It can be anything from helping with a project or volunteering for an event.

3 minutes

Partner 1: Try to motivate your partner to do something. Do not look at your partner's motivation sheet.

3 minutes

Partner 2: Try to do the same.

Have the mentors switch partners.

6 minutes

Now do the same thing, but the mentors may look at their partner's motivation list. Choose one factor to focus on. Discuss what each group did well and where they could improve.

Keep in Mind/ Additional Information

Using "we" to promote importance

Debrief/Mentors Should Think About

5 minutes

You will never have someone's exact motivation list, but by listening to your mentees you can often pick out their interests. Take note of when people get the "spark in their eye." Is it when you explain that a project could help others, make them money, inspire creativity, etc. This is powerful in being able to inspire others.

Active Listening

Activity Outline

Preparation (3 minutes)

Active Listening Activity (10 minutes)

Debrief (5 minutes)

Preparation

Mentors should pair off for a casual conversation.

Active Listening Activity

Ask

How do you know when someone is actively listening?

- Body language
- Eye contact
- Recognition (nods, small words or acknowledgments)

4 minutes

Have one partner tell a story about their morning and the other should listen normally. The listener should say as little as possible.

4 minutes

Have the same partner tell the story again, but this time the listener will slowly remove all active listening techniques.

- Stop paying attention
- Make less and less eye contact

Ask

How did this make the speaker feel?

Did you continue to talk, or did it make you uncomfortable to the point that you stopped?

How do the listeners feel about this exercise?

4 minutes

Have the listener from the previous turn be the speaker. Instruct them to tell a story: their trip to work, morning routine, etc. The listener, however, will slowly turn up their active listening techniques.

Ask

How did this make the speaker feel?

Did you get more engaged in the conversation?

How do the listeners feel about this exercise?

Debrief

The point of the exercise is to look at the effect of active listening.

Mentors Should Think About:

Mentors should think about how you actively listen to your mentees. When we multitask, we often forget to engage with the speaker and can come off as if we are not listening even if we are. Just by repeating something they said or asking a simple question during a conversation you confirm that you are listening.

Attention of the Intention

Activity Outline

Preparation (2 minutes)

Attention of the Intention Activity (25 minutes)

Debrief (10 minutes)

Materials

- 1 large, blank poster
- 2 markers of different colours

Preparation

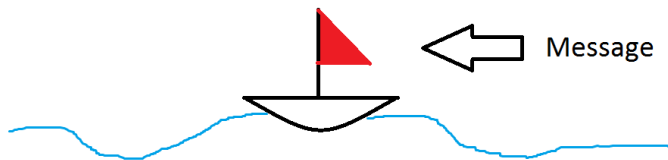
Have all mentors group around a piece of poster paper

After the “Positive and Negative Takeaways” section, split the group up into two groups of four

Attention on the Intention Activity

5 minutes

Once the group is around a poster paper, draw a boat on the ocean.



Explain that the boat represents a message that you need to convey to your group (e.g. explaining your field of engineering). Next, make a list of as many words under the boat that represent positive attitudes (e.g. calm, control, fulfilled, included, satisfied, excited, valued, happy, motivated, positive, inspired, confident, and clear). Then, make a list of as many words under the boat that represent negative attitudes (e.g. angry, frustrated, discouraged, demotivated, confused, trapped, ambushed, blame, upset, alone, failure, let down, and sad)

When the lists are created, say that keeping one of these words in mind in a briefing can greatly affect the student’s takeaway.

4-5 minutes for each person (16-20 minutes total)

Have the group of mentors split into two groups of four. Have one member of the group give a short description about a homework assignment while trying to display a negative attitude from the list made earlier to the other three members. (The mentor should keep the negative word to themselves when giving the brief.)

After this talk, discuss how the three listening members felt due to the tone of the brief. Also, have the three members guess which negative word the other member was trying to display.

Now repeat the same activity with the same member presenting the same brief; however the member should describe the assignment displaying a positive attitude from the list made earlier to the other three members. (The mentor should keep the positive word to themselves when giving the brief.)

After this talk, discuss how the three listening members felt due to the tone of the brief. Also, have the three members guess which positive word the other member was trying to display.

Repeat this with each member of the group.

Debrief

This activity is about understanding how the tone of one's voice can affect the takeaways of a discussion.

Ask

How did you feel when briefed in a negative manner?

How did you feel when briefed in a positive manner?

Mentors Should Think About:

Positive Tones: A positive tone to a brief can greatly affect the outcome of an activity and assignment.

Negative Tones: A negative tone to a brief can discourage a mentee and greatly affect the activity/assignment as well as be detrimental to the group's compatibility.

Confidence Identification

Activity Outline

Preparation (3 minutes)

Confidence Identification Activity (5 minutes)

Debrief (10 minutes)

Materials

- Post-it notes

Preparation

Hand out a post-it note labelled with a single number ranging from 1 to 10 to each person.

Have a large open space for the mentors to interact with each other.

Confidence Identification Activity

Explain to that group that people's confidence can be graded on a scale of 1 to 10, with 10 being the most confident and 1 being the least confident.

Assign a number to each mentor (each mentor should have a different number). They should not show their number to anyone. Explain that you are at a mixer and need to act your confidence number. Each member should meet with everyone by the end of the activity. Start activity!

Once this portion is done, have the mentors line up without talking in order of least confident to most confident from left to right. Then have each member identify their number and see if the order is correct.

Debrief

This activity is about understanding how to interact with mentees with different confidence levels.

Ask

What problems did you encounter when meeting with all the mentors?

How hard was it?

What could you do to better interact with each confidence level?

Mentors Should Think About:

Mentees will have all different confidence levels; therefore, the mentor needs to identify each individual's confidence level and be aware that lower numbers may not respond well in group settings to those with high numbers and vice versa.

Mentor and Mentee Evaluations

Over the course of the programme, both mentors and mentees will fill out evaluation forms. These forms will provide you with feedback that will be crucial in adapting the programme to make it even more successful in future years. Listed below are each of the forms that will be used to evaluate the programme.

Intended Learning Outcomes Form

The intended learning outcomes evaluation form will be completed during the students' orientation. This form will be used as an evaluation of what the mentees hope to gain from the mentoring programme on a personal, professional, and broader basis and why these outcomes are important to the mentee. This will help the mentees recognise when their intended learning outcomes are met and how they were met. Also, it will help the programme coordinator identify what topics are most important to the students in the programme.

Nutshell Form

The nutshell form is an evaluation form which the mentees will fill out after each meeting with their mentor. This programme's nutshell form will consist of two sections: professional and personal development. For each meeting, the students will fill out one section explaining how that month's lesson helped them personally and one explaining how the lesson helped them professionally. There are two nutshell forms. The first nutshell form will be finished after meeting five and the second form will be finished at the end of the programme. After finishing each of the nutshell forms, the mentees will create an action plan. This plan will help them apply what they've learned in each lesson to their lives, so that they use these skills as they move forward. After each sheet of the form is completed, the mentor will make a photocopy of it and the mentee will keep the original copy. This nutshell form will help the programme coordinator identify what the mentees gained from each lesson. Lessons can then be modified in the future if the meeting's intended outcomes are not achieved.

Impact Form

The final evaluation form that the mentees will complete is an impact form. The impact form will measure how three different professional characteristics were impacted. These three characteristics are: knowledge, skill, and motivation. The form will identify how each characteristic was impacted for the student, how effectively they were impacted, and what lesson(s) made this impact. There is also an additional section on each nutshell form that will allow the mentees to address any additional information about how the programme impacted them. This form will be important in understanding how the programme affected the students professionally. It will also help identify what lessons worked, as well as what professional areas were not properly addressed.

Meeting Reflection Evaluation Form

Mentors will lead one lesson each month. After each lesson, the mentors must immediately complete a meeting reflection form. These forms are located at the end of each lesson in the lesson plan handbook. This form asks questions about what went well during the meeting, any issues that arose during the meeting, and any suggestions that the mentors feel could be beneficial for the programme. Ten of these meeting reflection forms will be completed throughout the programme, and these will aid the mentors in discussing which lessons worked best and why during quarterly check-in meetings. They will also help the mentors to discuss any modifications that could be made to benefit certain lessons.

Quarterly Check-ins

Quarterly check-ins will occur every three months (three times over the course of the programme). These check-ins will take place on (Day/week of meeting) at (Time – should be after working hours, generally a weekday between 5 and 7 PM) at London Transport Museum/TfL building. Each check-in meeting is mandatory for all mentors. The check-in meetings will be led by the programme coordinator. These

meetings will range from one to two hours. For the majority of the check-in meetings, each activity will be separately discussed. Then the mentors will discuss any individual group problems and any questions they have come across during the programme. For the activity discussion portion, the mentors and programme coordinator will discuss the positive and negative experiences that the mentors have had with the previous three mentoring meetings. The mentors should also be asked to give any suggestions they may have, as this could be very beneficial for improving the programme in the future. At the end of the final meeting, the mentor final evaluation form will also be completed.

Final Evaluation Form (see page 31)

At the end of the last check-in meeting, the final evaluation form will be given to the mentors. This evaluation form will consist of six open-ended questions about the mentoring programme. These questions will address key logistical and organisational aspects of the programme, and the mentors' feedback on these topics will be helpful for improving the programme in the future.

Evaluation Forms: Guidelines for Collection

As the programme's coordinator, you are responsible for collecting and reading the evaluation forms that the mentors and mentees will complete throughout the programme. Several evaluation forms will be completed to provide the programme coordinator with as much information as possible about the mentoring programme, particularly during its first pilot year. Mentors will be responsible for collecting evaluation forms from their mentees, and the programme coordinator will be responsible for collecting these forms from the mentors. The mentors will be turning in different evaluation forms at every check-in meeting, as outlined in the schedule below.

- Check-in Meeting 1
 - Intended Learning Form (Mentee)
- Check-in Meeting 2
 - 1st sheet of Nutshell Form (Mentee)
- Check-in Meeting 4
 - 2nd sheet of Nutshell Form (Mentee)
 - Impact Form (Mentee)
 - Final Evaluation Form (Mentor)

These evaluation forms will allow crucial programme adaptations to be made so that the programme may be improved in the future.

Lesson Plan Overview

Meeting 1

Objectives: In groups, explain what engineering is and how it applies to the world around us
Get students comfortable with asking questions
Activities: What is Engineering?, A Day in the Life, Introductions, Quiet Questions

Meeting 2

Objectives: Explore interests in a specific engineering field
Learn to talk about engineering and apply it to the real world
Activities: Everyday Engineering, Introduce Everyday Activity (HW)

Meeting 3

Objectives: Real world example of students and professionals in exact fields of interest
Activities: Everyday Object Presentation, Problem Solving Project, Quiet Questions

Meeting 4

Objectives: Explore all the paths of entering the engineering industry
Activities: Career Path Overview, Career Path Matching Activity

Meeting 5

Objectives: Professional development through CV writing and critiques
Activities: How to Write a CV Overview, Sample CV Critiques, Brainstorming Session, Write your CV (HW)

Meeting 6

Objectives: Building confidence
Activities: Elevator Pitch Activity, Interview Prep, Quiet Questions

Meeting 7

Objectives: Professional development through mock interviews
Activities: Mock Interview

Meeting 8-9

Objectives: Decided by mentor
Activities: See optional lesson plans

Meeting 10

Objectives: Conclude Programme
Activities: Presentation, Final Discussion, Evaluation Form

Meeting 1

This meeting is centred on an introduction to engineering and to the mentoring programme in general. The mentors and mentees will discuss what engineering is in general and what the mentor does on a day-to-day basis. Then a series of icebreakers will be done to allow the group to grow more comfortable.

Meeting 2

This meeting will take a deeper look at the different fields of engineering and how they affect the mentees' lives. To do this, the students will do an activity where they evaluate all of the engineering involved in two everyday objects. This will take engineering out of an abstract phrase and allow them to visualize its potential.

Meeting 3

This meeting will allow mentees to take an active role in the engineering they have looked at. The main activity of the day gives mentees a real engineering problem to look at and will let them look at solutions and additional engineers they would need to complete the project. Mentees will develop their problem-solving skills and work at a real engineering problem.

Meeting 4

This meeting will introduce students to the career is to discuss the various routes which students can take to enter into the engineering field. The initial part of the meeting will discuss the three main career paths for engineering: university, apprenticeships, or vocational qualifications, as well as the professional registration categories available to engineers in the UK. Next the students will do an activity where they look at different people and learn how they entered the field, which will address the stereotypes that exist around each career path. This lesson will help students think critically about which route they should take.

Meeting 5

This meeting will help students learn CV-writing skills. They will learn the importance of CV and what should be included in one, and will examine examples of good and poor CVs. Finally, they will work to brainstorm ideas for what should be included on their own CV, which they will write for homework.

Meeting 6

This meeting focuses on the general skill of interviewing. During this lesson, students will develop an elevator pitch so that they are able to talk about themselves in a clear, concise, and confident manner. They will also review general interview preparation such as what to wear and learning what types of questions may be asked.

Meeting 7

This meeting will have the mentors conduct mock interviews with each of their mentees. This will allow the mentees to practice interviewing and will be complemented with a discussion of what they learned, as well as feedback on what they did well and what they can improve on.

Meetings 8-9

After meeting 7, the mentor is free to arrange activities however he or she sees fits. This is the time where mentors can revisit what was learned in previous meetings and go into more detail or use provided materials to talk about additional personal development objectives. The following are short descriptions of the available personal development lesson plans. The mentors are welcome to use these lesson plans, or they may create their own if they feel comfortable doing so.

Current Affairs

This lesson focuses on current affairs and how engineering is relevant to the students' everyday lives. This will be done by having the students find an article in a newspaper that talks about something involving engineering. They will then discuss how engineering is involved in the article they find, and how engineering is relevant to their community.

Goal Setting

This lesson focuses on helping the students to set goals. This meeting will allow mentees to evaluate their current situation through a SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis. This will be followed by a goal setting session where the mentees set a personal and professional goal with steps to complete each.

Problem Solving

This lesson focuses on problem solving, a skill that is needed in both the students' personal and professional lives. Mentees will go through a series of situations and problems and use different methods to problem-solve each scenario.

Communication

This lesson focuses on good communication, something that is extremely important in both the students' personal and professional lives. The mentor has 4 different topics they can choose to discuss, including: body language, writing emails, summarizing, and knowing your audience. Mentors can use which ones they believe are most relevant for their mentees or they may add additional ones that would better suit the students in their group.

Social Media

This lesson focuses on social media, and will show mentees the positives and negatives of social media and how they can use it to their advantage professionally and personally. Mentees will begin to develop what they want their professional image to be through social media.

Meeting 10

The final meeting wraps up the programme and allows the students to reflect on their mentoring experience. This will begin with each mentee or each group giving a presentation of what they have learned during the programme. This can be done in the normal mentoring groups or with several groups combined in a larger setting. The group will then discuss what they learned and gained from the overall programme. Finally, the students will complete evaluations so that the programme coordinator can see how the programme impacted the mentees.

Mentee Matching Form

Student Name: _____

Gender: M / F

Date of birth (dd/mm/yyyy): _____

Please rank the three types of engineering that you are most interested in, by placing a 1, 2, or 3 on the line next to each type (with 1 being most interested). If you are unsure about what any of these are, please refer to the engineering descriptions document in your handbook.

___ Aerospace	___ Civil	___ Geotechnical	___ Software
___ Automotive	___ Communications	___ Industrial	___ Structural
___ Biomedical/Clinical	___ Electrical	___ Materials	___ Transportation
___ Chemical	___ Environmental	___ Mechanical	___ Other: _____

For the following four questions, please mark one answer.

If you were asked to complete a group project, which task would you be most comfortable in completing?

- Assigning roles to the members of the group
- Completing any task that needs to be done

When given the option to work in a group or alone, you would generally:

- Work in a group
- Work alone

If your mentor gives you an optional assignment, how likely are you to complete it?

- Very likely
- Not likely

Where do you see yourself after Greenwich UTC?

- | | |
|---|--|
| <input type="checkbox"/> Attending university | <input type="checkbox"/> BTEC or similar qualification |
| <input type="checkbox"/> Apprenticeship | <input type="checkbox"/> Other: _____ |

What would you like to learn from people in the engineering industry?

Do you have any specific preferences or any other information you would like us to know when matching you with a mentor?

Mentor Matching Form

Name: _____

Gender: M / F

Current Engineering Field: _____
(Civil, mechanical, etc.)

Years in the Industry: _____

How did you enter the industry?

Attended university

BTEC or similar qualification

Apprenticeship

Other: _____

What significant projects have you done that are related to your current engineering field?
(Briefly describe no more than three projects.)

Have you participated in any mentoring programmes in the past?
(If so, please describe the experience.)

What do you expect to get out of this programme?

Is there anything else you would like us to know about you to best facilitate a good mentor match?

Mentor Final Evaluation Form

How did this programme benefit you, personally and professionally?

Overall, what seemed to work well with the students? What didn't work quite as well?
(Please mention specific lessons and/or types of activities.)

If you had the choice to change the time commitment required for this programme, would you? If so, how would you change it?

How do you think the training before and support throughout the programme helped you during the mentoring process? What improvements or additions would you make to mentor training in the future?

How could this programme be improved in the future?

Do you have any additional comments about the programme?