In2science
STEM peer mentoring in schools

Mentor Handbook

We collaborate on Aboriginal Land

In2science acknowledges the people of the Woiwurrung, Boonwurrung, and Wadawurrung language groups of the Kulin Nation, on whose unceded lands we work. We pay our respects to their Elders past and present, as well as the Traditional Custodians of the lands across Victoria and Australia on which we engage schools.

In2science celebrates and acknowledges First Nations people as our first scientists.

CONTACT US!

Don't hesitate to reach out to your Coordinator(s) at any point throughout your placement, they are here to help and make your experience as successful and rewarding as possible!

Name:

Email:

Mobile:

INTRODUCTION

Throughout your 10-week placement, you may cover a lot of information with your students about science/maths, uni life, and their future aspirations. This process has the potential to have a significant impact on their perception of STEM. Along the way, you should find that it's quite easy to maintain a relaxed and friendly relationship with the students in your classroom.

This guide provides useful information and resources to help you gain confidence in your mentoring ability. You may not encounter all the topics listed in this guide and there may be discussions and activities that form organically depending on the students' and your host teacher's needs.

This guide contains essential information about what to expect from your placement, how the host teacher may use you in the classroom, introducing yourself to the class, tips and tricks for a successful placement, and finally, a template to help you reflect on your mentor journey with In2science. Have fun!

YOUR PLACEMENT CHECKLIST

- Sign in at the school office/reception
- Bring your WWCC card with you
- Wear a name tag (first name only)
- Dress respectfully in neat casual clothes
- Keep mobile phone use for emergencies only while on campus
- Let the teacher & your In2science Coordinator know if you are sick
- Email your teacher regularly
- Check your emails for In2science information once a week
- Check relevant communication platform at least once a week
- Have fun!

WHAT TO EXPECT IN THE CLASSROOM

How the teacher integrates you into their classroom may evolve during your placement as the teacher and students get to know you and as your confidence engaging with the students develops.

There are three main ways that teachers may utilise their mentors:

1. As another pair of hands and eyes in the classroom, working with the class as whole

2. Providing some extension or extra challenges to particularly engaged and keen students

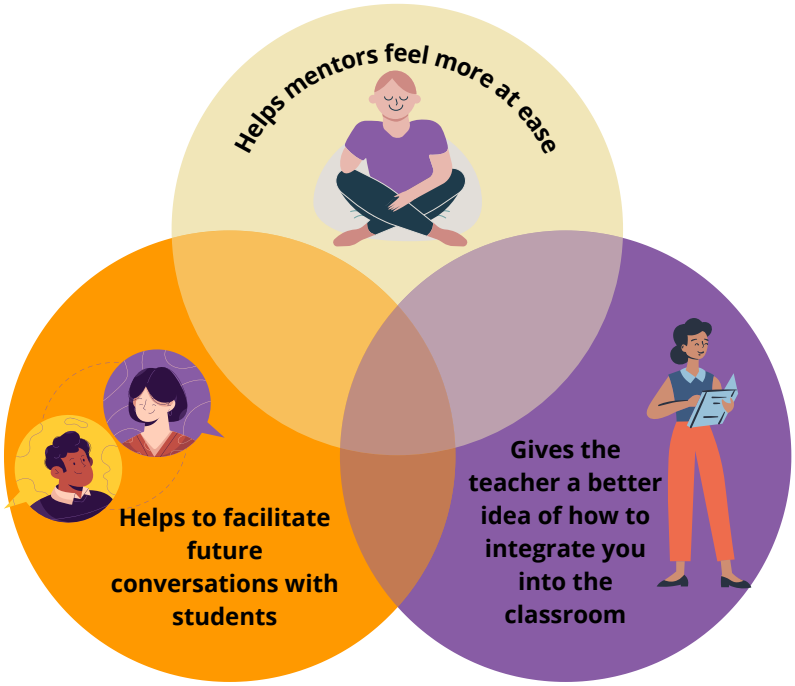
3. As extra support and inspiration for discouraged and uninterested students

It is important to have a short meeting with your teacher (in-person, online, or on the phone) before your placement starts to discuss how they may wish to utilise you in the classroom

Be flexible with regard to your host teacher's suggestions, and maintain open communication. This will help you get the most out of your placement and be an asset in the classroom. However, make sure that you only do what you are comfortable with. If your teacher asks you to do something you're not yet ready for, suggest a different strategy until you grow more confident interacting with the students.

INTRODUCING YOURSELF TO THE CLASS

You will have seen the mentor introduction activity as part of the online induction module. The information below is a reminder of what to do. Feedback from teachers and past mentors indicated that giving a brief introductory presentation during your first class about who you are and why you're there:



In short, it will make future visits much easier for you! Remember you can use our Mentor Introduction Template to create an image-only PowerPoint to accompany your introduction. Feel free to edit this as you like! (background colour, font, etc.)

After pre-placement training:

- Tweak your introduction until your first mentoring visit – practise with a friend or with your In2science Coordinator! Keep it to no more than 10 minutes in length.
- Feel free to ask your In2science Coordinator to have a look through your presentation. Send your PowerPoint to the teacher before your first visit. Also, make sure you have a copy on a USB when you attend the class.
- In your first class: introduce yourself!

TOP TIPS FOR YOUR INTRODUCTION

1. **SMILE –** especially if you're a bit nervous!

2. **Keep it short and snappy!** No more than 10 minutes all up (practice your timing). Pick 1-2 points for each part of your Introduction, rather than trying to cover them all. With anything you don't cover, you could use one idea each week as a conversation starter.

3. **A narrative about who you are** (e.g. "I got into engineering because I really loved physics, which I discovered through watching Brian Cox videos in high school.") is much more memorable than a discrete set of facts (e.g. "I studied physics. I like engineering. I like cats.").

4. **Throw in a question!** It helps to keep the students actively engaged.

5. **Use the Mentor Introduction Template we've designed –** keep text to a minimum and use a few great images!

6. **Practise really does make perfect.** You'll be much more confident and enthusiastic if you're not thinking about what to say on the spot.

STEM SKILLS

Type of skills

When we talk about STEM skills, there are two types: **transferable** and **technical**. Quite often, the negative perceptions around STEM relate to the technical skills when the reality is, it is the transferable skills that are the most useful skills we can all learn.
Focus on the **transferable** skills in your placement and how they can be applied to every situation/career. You will surprise the students with the real world application of these skills.

Transferable skills

- Analytical thinking
- Problem solving
- Critical thinking
- Creativity
- Collaboration skills
- Research skills
- Working with quantitative information (numbers, statistics, data)
- Flexibility and adaptability
- Communication
- Lifelong learning
- Innovation and entrepreneurial skills

Technical skills

- Developing advanced scientific, technological, engineering or mathematical solutions
- Empirical skills (observation, experimentation, data collection)
- Using technical and specialised equipment

DIVERSITY IN THE CLASSROOM

1. Neurodiversity

These websites are useful for advice on engaging with students that are neurodivergent:

- www.amaze.org.au
- www.neurodiversityhub.org

Let students know you're always happy to explain things in different ways

Allow for thinking time & communicate one idea at a time

Take time to think about what you'll say. Use key words, be concise, and avoid slang and metaphors

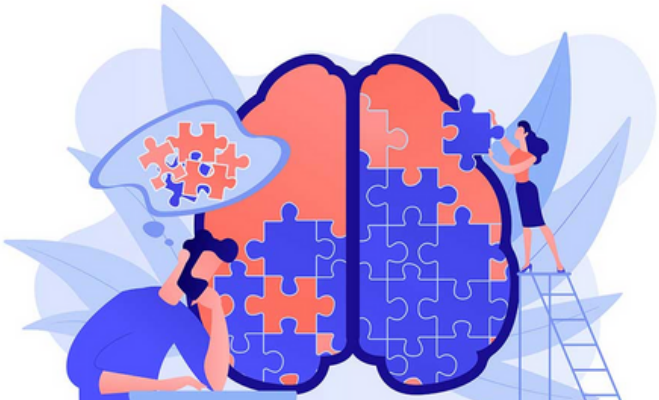
Simplify your language

Be aware of your tone and speed. Speak slowly and with a consistent, warm tone

Be patient with students, let them process what you've said before moving on

Be warm and open, check whether students have understood, and offer to explain it using other means such as: comparisons, imagery, breaking it down more

Let the students know the plan/schedule

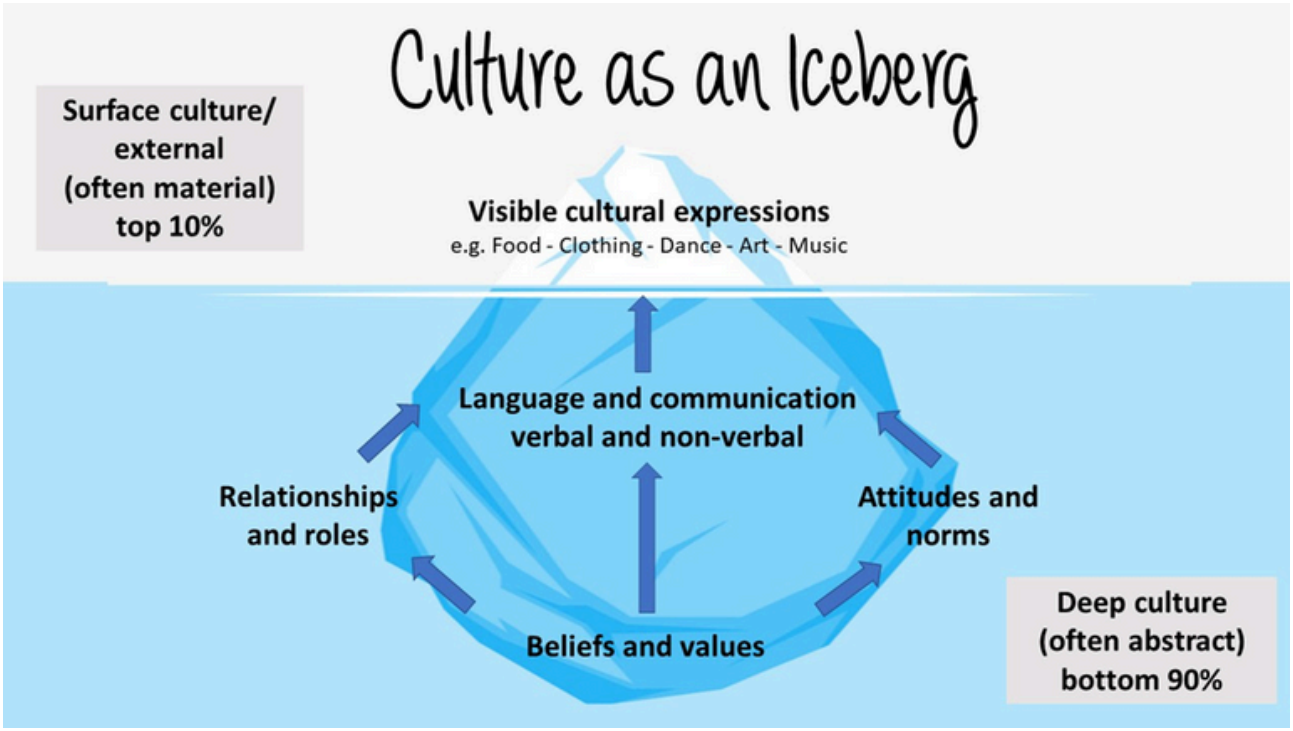


DIVERSITY IN THE CLASSROOM

2. Cultural diversity

Classrooms are diverse spaces with students from a range of cultural and religious backgrounds, and therefore it is important to be mindful of this during your interactions. Mentors and educators should embrace diversity and foster culturally inclusive classrooms designed to help every student succeed. You can do the same with your classroom by:

- Building your cultural knowledge
- Practicing good communication skills (verbally and non-verbally)
- Celebrating traditional festivals, holidays, and food



DIVERSITY IN THE CLASSROOM

3. Gender diversity

Gender diversity is an umbrella term that is used to describe gender identities that demonstrate a diversity of expression beyond the binary framework. Pronouns are one way we can navigate this topic: pronouns.minus18.org.au

Gender-neutral terms to address a group:

- Kids
- Pals
- Friends
- Everyone
- Kiddos
- Team
- Folks
- Epic humans
- Scientists
- Mathematicians

WHAT DOES A SUCCESSFUL PLACEMENT LOOK LIKE?

How to be a great mentor

Be prepared! You don't need to have all the answers, however, it is important to take some time to think about the conversations you may have with students during your placement. Having a peer mentor in the classroom is exciting and interesting to high school students. Be open to their queries and do your best to answer them. If you don't know an answer, it's ok to admit this – make a mental note and try to come back with a response the following week. Realise that students might be embarrassed or have no-one else to talk to about uni, so there are no silly questions!

Equally, some students will be shy and reserved. In this case, it's important to:

- Ask open-ended questions rather than ones that only need a yes or no response.
- Actively listen to their answers.

You may also try:

- Discussing something outside of the classroom, for example, ask them to tell you about their weekend, which might kick off a discussion about sports, or pets, or siblings, or movies – just about anything!
- Sharing a little bit about yourself as well, particularly during your introductory presentation, as this will help establish rapport and common interests.

Questions students may ask you:

What is university like? *(note this is a very broad question, so try to find out exactly what the students are curious about)*

What are you studying? How and why did you choose that university/course/major?

What was high school like for you?

What are your top study tips?

How do you pay for uni? Do you work as well?

How did you apply for uni? Was it hard to get in?

Do you live on campus?

Is uni hard?

What are the best and worst things about uni?

Does uni take up a lot of your time? How many hours a day do you study? What is your timetable like?

Can you tell me about any social events or clubs that happen at uni?

What do you do outside of uni?

How did you make friends at uni?

Did you get a scholarship?

Questions to ask the students:

What did you get up to on the weekend? Are you doing anything interesting this weekend?

What do you like to do in your spare time?

What is your least favourite vegetable?

What are your favourite school subjects? Why do you like them?

Have any of your family members gone to uni?

What sports do you like? What about books, tv shows, or video games?

What would you like to know about studying after high school?

What would you like to do when you finish school?

Uni life:

Students love to ask you questions about what university is really like (especially senior secondary students). For more information about choosing what and where to study after school, refer to the links at the end of this handbook. If you can't find an answer to a question about studying at university, ask your In2science Coordinator.

KEY THINGS TO DO (AND NOT DO) DURING PLACEMENT

Working with minors

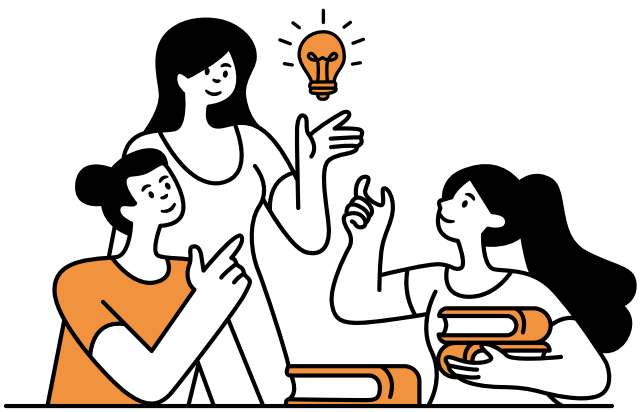
During your placement, it is important to recognise that you will be interacting with minors (people under the age of 18) and there are certain key things to keep in mind. Carefully read the list below for what **to do**, and **not do**, while in the classroom.

DO:

- Try your best to interact with ALL students in the class
- Give the students real-life examples of how fun and interesting STEM can be
- Make sure you follow the teacher's lead in the classroom
- Talk to your teacher privately about any concerns
- Recognise your presence is having a positive impact!

DO NOT:

- Give out personal details, e.g. email, phone number, social media, etc.
- Have inappropriate conversations or interactions with students
- Use your phone while on school grounds, unless it is an emergency
- Conduct video chats or take video footage while on school grounds
- Be alone in the classroom with the students



STEM DISCUSSION TOPICS

STEM Careers

A STEM education leads to a world of career opportunities! Various research studies have indicated that STEM skills will be required in most jobs in the future. Feel free to share your own career plans and what resources/services/people have helped you in your career development so far.

If you're not sure what you want to do in the future, it's ok to be honest and tell the students that.

You could talk about:

- The student's passions and possible pathways: further study options and career ideas
- Choosing VCE subjects that they enjoy and will create options for further study
- Are they considering doing work experience? Where?

Why do you love STEM?

Here is your chance to break all those stereotypes about science and maths! STEM can be crazy, fun, ground-breaking, and life-changing.

- Discuss real-life science: Why are people double-jointed? What is a rainbow?
- Discuss science in the news or on YouTube. Get them to find an article or news report to share.
- Describe your research interests. Ask students if they could research anything at all, what would it be?

If you want to talk to your mentees in more depth about choosing a university and what to study, here are some resources.

For more information about uni entrance procedures/ATAR system/pre-requisites check out these links and/or share with your host teacher and students:

- Victorian Tertiary Entrance Centre (VTAC): www.vtac.edu.au
- The ATAR Explained: learnmate.com.au/atar-explained
- Youth Central: www.youthcentral.vic.gov.au
- University Open Days: www.vtac.edu.au/opendays.html
- La Trobe University undergrad degrees: www.latrobe.edu.au/study/undergrad
- RMIT University entry requirements: www.rmit.edu.au/study-with-us/applying-to-rmit/local-student-applications/entry-requirements
- University of Melbourne undergrad degrees: study.unimelb.edu.au/how-to-apply/undergraduate-study
- Deakin University study: www.deakin.edu.au/study

Other STEM experiences and programs students may wish to explore:

- The Science Experience: www.scienceexperience.com.au
- National Youth Science Forum: www.nysf.edu.au
- Spark Engineering Camp: www.ywb.com.au/spark-engineering-camp

PLACEMENT REFLECTION

After each session

After each session of your placement, your Coordinator will reach out to check in with how everything is going. It's good to get into the habit of reflecting back on each session and thinking about any wins, as well as any challenges you could work on. We've included some reflection prompts below to get you started. Remember, if you're ever not sure what to do, just chat to your Coordinator.

- **What did I talk about with the students today?**
- **What was the greatest win from today's session?**
- **What was the biggest challenge? What are some potential solutions?**
- **What skills have I developed as a mentor?**
- **What would I like to work on next with the students?**

FINISHING PLACEMENT

The In2science mentoring placement runs for 10 weeks during the semester, however, if you would like to continue for longer just check with your teacher and Coordinator. Some mentors continue their placement right up until the end of term, but there is no pressure to do so.

When you are coming to the end of your placement, there are a few things to keep in mind:

- Ask your host teacher to set aside 5 to 10 minutes in your last class so that students can complete the post-placement survey.
- Make sure you say goodbye to the students and tell them what you've enjoyed about being their mentor.
- You may have become quite attached to the students while working with them, but please don't give out your personal details or connect with the students on social media. If you want to, you can ask your host teacher to collate any further questions the students have to send to you.