



Getting the Most out of the In2science Peer Mentoring Program

A guide for teachers

“Meet with the mentor prior to them starting or before/after lessons so that you can plan together rather than just organising tasks once the lesson has begun.”

Class teacher

I have found both mentors that have helped over the last two years invaluable.”

Class teacher

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The aim of this booklet is to help teachers identify ways of using the Peer Mentors effectively in the classroom to enhance the learning and engagement of their students.

Class teachers are the most important person as they facilitate the interaction of the Peer Mentor with the students. Just a little advanced planning and good communication with the Peer Mentor will ensure that the program is as effective as it can be.

In2science hopes to become as sustainable a partnership as possible with Peer Mentors being used as a regular part of teaching and learning strategies in the school. Through fostered links with the schools the program also wishes to offer as much support as it can for science and mathematics teachers (both new to the profession and well established) and to help support non-specialists in the classroom.

What is In2science Peer Mentoring in Schools?

In2science is run as a consortium between the Science faculties at **La Trobe University**, the **University of Melbourne** and **Monash University** to achieve the following aims:

- To generate **enthusiasm for Science** (especially the enabling subjects of Chemistry, Mathematics and Physics) in students in the middle years of their Secondary education (Years 7-10).
- To place university students in schools to act as **positive role models** to secondary school Science students inspiring them to achieve their potential.
- Through the role models, **promote the value and rewards** of Science as a positive career choice.
- To foster **links** between schools and universities.

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Who are the Mentors?

They are university students from the science faculties at La Trobe University, the University of Melbourne and Monash University. They have completed at least one year at university and have coped with the difficulties of transition from school to tertiary education. All Mentors undertake **training** to prepare them for the experience prior to commencing their placement. This involves learning about effective communication and how to engage with school students. Mentors are **volunteers**, receiving only their travel expenses.

How much time are they in schools?

Mentors are in schools for one morning or afternoon per week (approx 2-3 hours). Placements run for 10-12 weeks each semester. The Mentors get to know the students; encouraging them to achieve greater success while sharing enthusiasm and energy for science learning.

How does In2science work?

University students apply to be involved in the program and are interviewed by the Peer Mentoring Coordinator. Prospective Mentors are then matched up to schools involved in the program. Placements are offered based upon a match of the Mentor's area of study, timetable and the requirements of the school. Each school designates a **Link Teacher** who works closely with the **In2science** team. An **initial visit** to the school occurs before placements begin to familiarise Mentors with the school, meet the classroom teachers and learn about the work their classes will be doing.

All Mentors have **Working With Children** checks.

Mentors work with the same classes each week under the direct supervision of the teachers, to help improve and extend the experience of the subject within the classroom. Teachers **must** allow the Mentor to interact with the students either through practicals, group work or project work where the Mentor can provide considerable assistance, exploring and understanding the activity being undertaken. At the same time, they are acting as Science and Mathematics role models.

Peer mentoring offers a wide range of benefits to both teachers and their students.

Peer Mentors can:

- **Help students to think for themselves and improve their problem solving skills**
- **Help students develop good oral skills**
- **Communicate with students in a language they understand**
- **Help improve students academic performance and help raise their aspirations**
- **Help build on what the student already knows and understands**
- **Help students develop their powers of reasoning**
- **Help students develop their practical skills**

Most importantly, impart the enthusiasm they have for studying Science and Maths

With just a little advanced planning and regular communication with the Peer Mentor many of the potential benefits outlined in **Tables 1 & 2** could be achieved.

Through involvement in the program, teachers can identify specific benefits they would like to achieve (these can be submitted to the Peer Mentoring Coordinator using the 'Outcomes Planning Forms') and through discussions with the Peer Mentor, work together to achieve them.

Many benefits will occur naturally through just having the Peer Mentor present in the classroom, interacting with the students.

Table 1– Potential benefits for School Students

Potential benefit	How to Maximise Benefits
Opportunity to meet positive role models in Science and Mathematics.	<ul style="list-style-type: none"> • Ensure the Mentor has opportunity to interact with the students and engage in discussions with them.
A new dimension and interest to study Science.	<ul style="list-style-type: none"> • Peer Mentors can allow you to try new engaging activities otherwise unable to be undertaken without the support. • All Peer Mentors have a passion for their studies and have expertise in their own field of study. • Students do perceive the Mentors as ‘Scientists’. • Where possible encourage the Peer Mentors to make a presentation to the class about their studies or an aspect which they are particularly interested in.
More individual attention and additional support with work.	<ul style="list-style-type: none"> • Having a Mentor present can give students twice as much individual attention. • Encourage the Mentor to talk to individuals and support them in their work. • Ensure the Mentor’s time is not monopolised by any one individual. • Direct the Mentor to particular students who need support/extension as appropriate.
Improved oral communication skills by talking tasks through.	<ul style="list-style-type: none"> • Try to allow more time for discussions, both on an individual and a group basis, seeking input from both the Mentor and the students. • Encourage the students to explain tasks to the Mentor as a way of reinforcing their own understanding.
Improved academic performance though additional support and understanding.	<ul style="list-style-type: none"> • By allowing your students to work through a problem with the Mentor they can gain greater confidence in their understanding. • Mentors can be used to teach specific aspects of a topic to small groups of students. • Use the Mentors as part of a revision lesson.
Greater enjoyment of lessons.	<ul style="list-style-type: none"> • Mentors give a new dimension to the lesson and allow you to have greater flexibility in the classroom. This often results in more enjoyable lessons. • Encourage the Mentor to bring items in to show the students or help arrange visits to the university.
Improved understanding of topics.	<ul style="list-style-type: none"> • Where possible try to cover topics that work to the strengths of the Mentors. • Mentors will often offer the students an alternative explanation to a problem and this will help build a students understanding.
Stimulation to go on to further study/education.	<ul style="list-style-type: none"> • Mentoring can make a positive contribution to a student’s aspiration for further study. They can dispel myths and discuss first hand experiences of the benefits.
Gain an insight into university.	<ul style="list-style-type: none"> • Encourage Mentors to talk about university and encourage your students to ask questions. • Encourage the Mentor to talk about their time at university and what study entails.

Table 2 – Potential benefits for Class Teachers

Potential benefit –	How to Maximise Benefits
Free classroom assistance and support.	<ul style="list-style-type: none"> • Try to avoid didactic lessons, tests or videos.
More freedom to manage the learning environment.	<ul style="list-style-type: none"> • Complete the ‘Outcomes Planning’ form to target aspects you wish to improve through the support of a Mentor. • Make sure you establish lines of communication at the start of the placement with the Mentor to keep them up to date on what you are trying to achieve each lesson. • Use the Mentor for support to manage the class in different ways; use work stations or group tasks and discussions.
Opportunity to try/learn new experiments.	<ul style="list-style-type: none"> • Complete the ‘Outcomes planning form’ to identify experiments you wish to improve through the support of a Mentor. • Read the In2science newsletters to see how other Mentors are being used. • Invite Mentors to lead a session or conduct an experiment. • Get the Mentor to act as a demonstrator for small groups of students.
Develop new teaching resources or projects.	<ul style="list-style-type: none"> • Share ideas through the In2science newsletter. • Encourage Mentors to suggest activities they would like to do.
Lessons which are more enjoyable and easier to manage.	<ul style="list-style-type: none"> • Through having the extra pair of hands in the class, students will be kept on task more therefore less likely to be disruptive. • The extra person in the room allows you to have more individual time with students.
Improved opportunity for oral work and efficient learning.	<ul style="list-style-type: none"> • Try to facilitate the Mentor interacting with the students and engaging in conversation. • Ensure individual students don’t monopolise the Mentors time. • Mentors all receive training in communication and questioning techniques.
Benefits for excursions.	<ul style="list-style-type: none"> • Mentors have proven themselves to be extremely useful on fieldtrips, reducing the number of staff required to attend from the school. • Mentors have helped planned activities and trips.
Increased student engagement.	<ul style="list-style-type: none"> • Encourage Mentors to bring in items to show or demonstrate. • Try to facilitate a visit to the university for the class with the Mentor. • Encourage your students and Mentor to contribute to the In2science newsletters about the work they are doing.
An opportunity to learn about university students and courses.	<ul style="list-style-type: none"> • Encourage the Mentors to talk about what they study. • Facilitate opportunities for the Mentors to talk to students. • Bring students on campus.
The opportunity to discuss the latest issues in Science.	<ul style="list-style-type: none"> • Try to allow some time for you to talk about current issues with the Mentor. • Highlight and share issues in the In2science newsletter.
The chance to gain some subject specific professional development.	<ul style="list-style-type: none"> • Seek help from the universities to find out about new topics. • Look out for invites to our seminar program (as part of the ASISTM project). • Feel free to contact the Peer Mentoring Coordinator for help seeking academics able to offer advice and support.
The opportunity to make links with the University Science faculties.	<ul style="list-style-type: none"> • Feel free to contact the Peer Mentoring Coordinator for help in establishing links or visits.

How to introduce the Peer Mentor to your class:

How the class is introduced to the concept of having a Peer Mentor is very important to the process of Peer Mentoring.

It is **important** that both the teacher and the students know what the Mentor's **role** is and why they are there.

Here are some suggestions that may help in the initial stages:

- Talk to the class **prior** to the first visit of the Mentor– **they are a young scientist**.
- Get the students (especially Y7/8) to **draw a picture of their image of a scientist** this way you can see if their view changes having had the Mentor
- You can tell them a little about the Mentor; what they study and where.
- If you are doing a topic which is the Mentor's specialism tell your students about this.
- Tell your students **when** the Mentor will be coming in.
- Tell your students the Mentor's **role** is to help them get more out of the science lessons and talk to them about the science they are doing.
- It is important to tell them that Mentors are **not** student teachers (though many may be interested in a career in teaching).
- Mentors are **not** there to test or judge the students but to **engage** in the lesson with them.
- Introduce Mentors using their **first** name. This helps show the students that their role is different – Mentors will have name badges.
- If possible talk about what you are going to be doing with the class when the Mentor is there.
- Tell the students it is an **opportunity** for them and you.
- On the **first day** take time to **formally** introduce the Mentor to your students.

You can help the Mentors to learn names by having a class list for them.

How to use the Peer Mentor to support:

Mentors are not qualified teachers although they have received training in communicating and building a rapport with students. Mentors can help support your teaching and learning strategies in the classroom to engage the students and add another dimension to their studies.

Discussions with the Mentor will help you decide how best they can help your students. Some are more confident than others and are more able to take a leading role from the outset. Others will be able to as they grow in confidence in the classroom.

Remember that the Peer Mentors are not there to take over your role as main instructor in the classroom

1. General class activities

Mentors can be extremely useful to support students while working individually on tasks. Students working on textbook or worksheet questions will often put a lot of demand on the teacher as they ask for help.

- The Mentor becomes an **extra** person offering advice and support and sometimes alternative explanations. Mentors are encouraged to **focus** on helping students who are '**on task**'. This acts as a

good motivator to the students; if they want the Mentors attention they need to be talking about the work.

- Try where possible to ensure the Mentor has the **information in advance** of a lesson so they can be familiar with what you are trying to achieve – usually best done by **email**.
- Allocate the Mentor to a group of students who may need more help or who may need stretching (they could sit together on a separate table). Try to avoid the Mentor working with the same group each week, allowing every student to benefit from their presence.
- To avoid the Mentor's time being monopolised by certain individuals help by checking they have **genuine** questions for the Mentor.
- Be aware that sometimes students will ask for help from the Mentor instead of you. Students have said they are sometimes reluctant to ask the teacher, who they see as assessing/judging them, especially if it they are unsure about something that has been explained in a previous lesson.
- Some teachers have found they are able to **focus** on working with the quieter, middle ability students while the Mentor looks after the others who are asking for help.
- Try to have a **discussion phase** in the lesson, going through the answers that the students have done. This way the Mentor can be actively involved in the feedback process and contribute their views to the class as a whole. Mentors often comment that they would like to contribute to whole class discussions more often.

2. Group work

Mentors offer the ideal opportunity to **integrate more** group work into your lessons.

- Try allocating the Mentor to a specific group to work with (less/more able) for a whole session. This should be within the classroom and should not be repeated each week with the same group unless they are working on an extension project
- The Mentor could be asked to spend 10 minutes with each group to talk them through a particular aspect of the work.
- Students could use work stations to look at different aspects of a topic. The Mentor could be used to **manage** one of these work stations.
- Mentors undertake some training in managing discussions with small groups. As they are not the person ultimately assessing them, students often feel more relaxed and willing to participate in such circumstances. Being able to communicate their understanding of a topic is very important and the Mentor can be an ideal person to **facilitate** such discussions. You may like to give an **issue** relating to Science to the Mentor that they could discuss with a different small group each week, for say 15 minutes.

3. Practicals and experiments

Many teachers have found they are able to do **more** and **varied** practicals when the Mentor is working with a class.

- To maximise the benefits, try to plan for practicals and experiments to be **on the day** the Mentor visits as the extra pair of hands will be valuable.

- Try asking the Mentor if they know of experiments that they would like to try with the class.
- Where possible allow the Mentor to act as a **demonstrator**, especially if the experiment is one that would normally be done by the teacher.
- Allow the Mentor to talk about the need for **accuracy** before an experiment as this is an important skill to pass on to the students.
- Mentors can be used to either work with a particular group on an experiment or they can wander round offering help and advice.
- Encourage your students to **talk** to the Mentor about the experiment. **Verbalising** the activity helps them learn and shows they understand.
- Mentors can be used to demonstrate extension practicals or experiments for those able students who finish early. This could be a real world example of the activity they have just done.
- You could use a Mentor to support a more able group of students to do a more **advanced** version of the experiment. This may require the Mentor to give a more **detailed** explanation of something or to help them set up different equipment (a little more planning would be required).
- Try to ensure that at the end of the lesson (or the next lesson the Mentor is in) there is time to **discuss** the experiment and the results the students have found. All too often students see a negative result as failure whereas they could use it as a learning exercise.

4. Projects and investigations

Having a Mentor working with a class could allow you to take a different approach to delivering a topic.

- Some teachers have set up **special projects** to teach a topic that they only run when the Mentor is present. This helps the Mentor with **continuity** and gives the students a sense of doing something different.
- Mentors will be able to offer subject specialism as an '**expert**'.
- Mentors can be used to support students in **planning** and **preparation** for a project or investigation, having developed these skills themselves.
- Mentors can be used to **support research** for topics in an ICT room or library away from the main classroom.
- Mentors are valuable for explaining the need for **testing** in projects and **trial and error**.
- Ask the Mentor if they can **introduce** a project, giving a background to the issue or problem. Often a different person introducing it can make the activity different.
- Mentors can be extremely useful for problem based learning activities. Devising problem tasks help engage the students and offer the Mentor the opportunity to interact fully with the students. All problem based learning needs:
 - To be engaging
 - Multi staged

- Complex
- Open ended
- Cover the content you wish

Mentors can take on many **different roles** in such activities. They can act as an '**expert**' especially if it is their field of study. They can take on a role or **character** that the students have to liaise with in order to complete the task. They can act as a **judge** or **assessor**.

- Mentors can be used as a **contact point** to the universities to source materials or arrange visits.

Advice from teachers who have hosted Mentors previously.

Teachers are asked to give advice to teachers having a Mentor for the first time. Here are some of their comments:

Have an initial chat with them, highlighting the expectations of both the mentor and the teacher. If possible choose a topic where there are activities. Communicate regularly via email, phone etc prior to each lesson.

Discuss with the mentor what their role should be and if it is possible, include them in planning.

My advice would be not to have too high an expectation on the mentor to begin with, let them feel their way, but encourage them and guide them in the right direction. Try to keep positive, strong and open communication by letting them ask lots of questions and offering advice on different ways things can be done, but also allow them to try things their own way.

Stay away from the lecture and try to plan activities, pracs, or other projects that require students to be actively working.

Plan different activities to make use of the extra person in the classroom.

Make use of them. Encourage them to interact with the students. Discuss what topics will be taught. Check areas of strength with peer mentor.

Let them move around and engage with students – building a rapport early on is great. Provide them with the topic information in advance so they feel more confident helping in the classroom.

Peer Mentors have been shown to be **most effective**:

- Working in **practical lessons** where the opportunity to interact is greatest.
- Moving round the class **helping** individuals in tandem with you.
- Working with **particular** individuals in the class.
- **Leading** a small group of students (either more or less able) on a mini project or task.
- **Motivating** students to stay on task or challenging their understanding of a task.
- **Demonstrating** a particular piece of equipment to groups or individuals.
- Involved in whole class **discussions**.
- Helping you **plan** an activity or visit for the students.
- Working in mathematics classes.
- Great for small group or individual **revision** sessions.

Communicating Expectations with Mentors

Communication between the teacher and the Mentor is an **integral** part of a **successful** placement. There needs to be a constant flow of information and ideas so both know what is happening.

It is important at the start to set clear objectives and expectations and for both the teacher and Mentor to be aware of what each other is aiming to get out of the placement.

Teachers should complete the OUTCOMES PLANNING FORM on page 14 then answer the following questions in discussion with the Mentor:

1. Have you completed the Outcomes Planning form P14? (tick)

2. How will you communicate with the Mentor on a weekly basis to inform them of each lessons activity?

3. Would you prefer the Mentor to work with the whole class, small groups or individuals that you have identified? – this would be in line with your *planned outcomes*

Whole class **Selected groups** **Selected individuals**

4. What role do you want the Mentor to take in the class?

5. Do you anticipate that the Mentor will run some of the activities and present information to the class?

Yes **No**

6. Would you like the Mentor to help you organise an incursion or excursion for the students?

Yes **No**

7. Any other expectations you may have:

8. Have you seen the Mentors expectations sheet and discussed it with them?

Yes **No**

At the end of a placement

It is important that your students know when the Mentors last day with them will be. You will be amazed at how attached some students do get and the opportunity to say goodbye will be important to them. Mentors also get attached to the students and value the chance to say goodbye.

Remember that, at all times, the Peer Mentor **must** remain under your direct supervision. They should **not** be left alone with a class or directed to take a student out of the room for one-to-one tutoring.

Evaluations

At the end of each semester there is a simple evaluation process where In2science asks for feedback from students and teachers. This should take just a little of your time and will be organised by the Link Teacher.

Sharing your experiences

A big part of the **In2science** program is to share experiences with other teachers both within your school and outside. To make such a program sustainable and an integral part of teaching at your school you may wish to try some of the following:

- Talk with other teachers about what is happening in your class either informally or at departmental meetings.
- Keep the Link Teacher informed about your progress.
- Take photos when possible to share with In2science and through your school newsletter – it is a great way of raising the profile of science in your school.
- Send information to your school's senior management team. It is good to share successes around the school.
- Where feasible suggest your next departmental meeting is held at one of the partner university campuses.

Conclusion

Whatever methods you employ to use the Mentor in your lesson there are a multitude of benefits for all involved.

A successful placement is when:

- **Both** the teacher and the Mentor **share** the same expectations about their involvement in the program.
- Teachers are able to **communicate** with the Mentors in advance what the lesson content is going to be.
- The teacher communicates what **role** they want the Mentor to take each lesson.
- The Mentor shows **initiative** and is willing to go **beyond** their comfort zone.
- Teachers **facilitate** the **interaction** of the Mentor with the students and involve the Mentor into the fabric of the lesson.
- Teachers **introduce** the Mentor to the class and **explain** what their role is.
- Mentors are able to make **regular** visits over a number of weeks.

An unsuccessful placement is when:

- The teacher and the Mentor have **not** discussed their expectations of the program.
- Teachers are **unable** to communicate with the Mentors in advance what the lesson content is going to be so the Mentor arrives unsure of the day's activities.
- The teacher does **not** discuss with the Mentor what role they want them to take each lesson.
- The Mentor does **not show initiative** and is **unwilling** to go beyond their comfort zone.
- Teachers **don't allow** the interaction of the Mentor with the students and **exclude** the Mentor from the fabric of the lesson.
- Teachers do not introduce the Mentor to the class or explain what their role is.
- Mentors are **unable** to make regular visits over a number of weeks.

If you have any concerns or need advice feel free to contact the **In2science Team** (see contact at end of booklet).

Also it would be great to get feedback from teachers about activities and successes that we can share with others through our newsletter. **Articles** can be written by teachers, students or Mentors and photos can be included (please ensure permission is sought prior to sending).

During the placement someone from the **In2science Team** will aim to come and visit the Mentors at the school to offer support and see them in action. Teachers will be notified well in advance of these visits.

Class Teacher's Outcomes Planning Form

Please use this form to document your planning to maximise the use of the Mentor in your lessons. You will be asked to **review** your plans as part of the evaluation process.

The aim is to utilise the presence of the Mentors to allow you to enhance the teaching and learning of Science/Maths. The main areas are:

Issues of engagement
Developing teaching resources and new methodologies.

PLEASE discuss your desired outcomes with the Mentor to ensure they are aware of your aims and objectives.

Teacher: School:

Planned Outcomes:

	Target	Achieved
▪ To use more group work in lessons.	<input type="checkbox"/>	<input type="checkbox"/>
▪ To stretch the more/less able students in the class.	<input type="checkbox"/>	<input type="checkbox"/>
▪ To generate more scientific based discussions in class.	<input type="checkbox"/>	<input type="checkbox"/>
▪ To try new practicals/experiments in lessons.	<input type="checkbox"/>	<input type="checkbox"/>
▪ To learn more about a particular topic from the Mentor.	<input type="checkbox"/>	<input type="checkbox"/>
▪ To establish a longer term scientific project.	<input type="checkbox"/>	<input type="checkbox"/>
▪ To try alternative ways of organising the class learning environment E.g. using work stations that the student move between.	<input type="checkbox"/>	<input type="checkbox"/>

(Add more detail here or other outcomes you wish to achieve)

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Please keep a copy for yourself, give a copy to the Link Teacher and **Fax** a copy to John McDonald on **9479 2585**

Achievement of planned outcomes – end of placement

At the end of the placement you will be asked to say whether you achieved your planned outcomes or not along with completing the following:

How did the Mentor help you achieve your desired outcome?

Where there any factors which prevented you from achieving your planned outcomes?

Who to Contact

Each school has a Link teacher designated to help coordinate the program from the school's point of view. This is often the science coordinator.

If you have any issues or concerns talk to them or contact one of the following:

In2science Team

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Check out our website for other information for schools:

<http://www.latrobe.edu.au/in2science/>