



# Program Information



## Introduction

**In2science** first began in 2004, established by the Faculties of Science at **La Trobe University** and the **University of Melbourne**. **Monash University** joined in 2008, with **RMIT University**, **Swinburne University of Technology**, **University of Ballarat** and **Deakin University** joining in 2010. It is a science/mathematics-based peer mentoring program involving government schools across Victoria.

Through the program, university science students partner with teachers in schools, working directly with school students as role models, and supporting the teachers to develop and implement science/mathematics-related activities. The current focus is on working with students in Years 5 to 10.

**In2science** is based upon similar tried and tested programs that operate both in Australia and overseas. Mentoring/tutoring programs in the UK, Israel and Singapore have now become national as the benefits for all involved are realised.

**In2science Peer Mentors are young scientists**, not trainee teachers. They volunteer for the program, keen to share their enthusiasm for science and/or mathematics. They help students achieve in class, and encourage them to consider further study in science.

*It's just fantastic to have young scientists who are currently at university modeling the behaviors of passion for science ... great communicators and really coming into our classrooms and connecting to kids. (School principal)*

*I thought I would be able to spark some enthusiasm in maybe one or two kids. When I was at high school I had no idea what sorts of things science might include. I wanted to be able to help others. (In2science Peer Mentor)*

**In2science makes a valuable contribution to science learning in schools.** Ideally, school science engages students and inspires them to achieve their best. Students are encouraged to relate science to their lives and interests. They discover that science is not confined to school classrooms or remote laboratories, and that 'scientists' are diverse people from a variety of backgrounds. Ideally, the curriculum is enriched by the latest knowledge, techniques and debates in the field. **In2science** supports schools to provide science/mathematics teaching that meets each of these objectives.

*It was stimulating for me. Quite often as a teacher you tend to get isolated a bit. It's good to have a bit of outside interaction, because I've been out of that 'study phase' for a long time, and you get sort of bogged down, sort of disconnected. (Teacher)*

**In2science has a sustained and systemic influence on science teaching** in participating schools: teachers are exposed to current science and knowledge that complements their own knowledge; science/mathematics classes become more interactive; and teachers are more willing to collaborate and share ideas.

*What the school gets out of it, compared to what we're asked to do ... I think we come out on top in this one! (School principal)*

The principle is fairly simple in that the values and interests of peers are among the biggest influences on teenagers. The positive influences from peer role models, in an academic context, when sustained can have lasting impact.

### The current aims of In2science

- to generate enthusiasm for Science (especially the enabling subjects of Chemistry, Mathematics and Physics) in students in the middle years of their education (Years 5-10),
- to place university students in schools to act as positive role models to school science and mathematics students inspiring them to achieve their potential,
- through the role models, promote the value and rewards of science and mathematics as a positive career choice, and
- to foster links between schools and universities.

### Defining features of the In2science program

**In2science** supports science/mathematics teaching and learning through the placement of university science students as 'peer mentors' in schools in Victoria. The **In2science** Peer Mentors work alongside teachers, supporting students in their learning. They share their enthusiasm for science/mathematics, and provide students with an insight into learning beyond school. The program has grown to involve several universities and over one hundred schools in the government school system of Victoria.

1. **Mentors are volunteers**

The university students selected as mentors are volunteers who choose to participate in their own time. The program is not a compulsory component of their university studies. All Mentors complete a pre-placement training program to prepare them for their role in schools.

2. **Mentors are young scientists, not trainee teachers**

**In2science** Mentors are typically undergraduate science students, and all have completed at least one year of their degree. Mentors represent a diversity of disciplines, from biochemistry to engineering, physics to zoology, psychology to mathematics.

3. **One teacher in each participating school serves as 'Link Teacher'**

The Link Teacher serves as the liaison point between the school and the university-based management of the program. Perhaps more important is their role within the school community, coordinating and supporting the participation of fellow teachers. The Link Teacher is often the science coordinator in the school, although they need not be.

4. **There is no cost to schools**

**In2science** is essentially 'free to schools'. Time is the only cost for teachers and the Link Teacher.

5. **Teachers nominate the classes in which they might host a Mentor**

Teachers in participating schools volunteer to be part of the program. They nominate potential classes, and the Link Teacher seeks to match the school times with Mentor availability.

6. **Teachers determine how Mentors are involved in class**

Through negotiation with the Mentor; the host teacher decides how they will work with the Mentor. The Mentor supports the teacher by supporting the students, demonstrating their enthusiasm for learning and sharing their experiences of science/mathematics in university.



7. **Universities take responsibility for coordinating Mentor placements.**

Each of the participating universities has a program coordinator who makes up the **In2science Team**. These coordinators recruit, select and train the Peer Mentors to prepare them for their role in the schools. The Team also provide ongoing coordination and liaison between the Mentors and the participating schools.

8. **Mentors have continuing relationships with teachers and their classes**

The structure of the program means that placements run across two school terms, generally for about 10 weeks. Mentors are placed with the same class each week, being in the school for approximately 2-3 hours, allowing strong relationships and rapport to be established between teacher, students and Mentor. Some Mentors develop relationships with their host schools which continue for several years.

9. **In2science promotes science learning, generally, and not particular universities or courses**

The **In2science** program is a collaborative, multi-university initiative. Unlike some university outreach programs that seek to recruit students to particular institutions or particular courses, **In2science** aims to promote students' engagement with science and mathematics learning more broadly.

The contribution of **In2science** to science learning in schools is a distinctive one. Even in schools with an existing focus on science, and with various other initiatives in place to promote science learning, the contribution of the **In2science** program is highly valued. **In2science** can complement other science-related initiatives, and schools often describe Mentors as 'adding value' to other science/mathematics programs.

### Why schools get involved – what do principals say?

The **passion and enthusiasm** that the Mentors bring to the school environment is considered a defining feature of **In2science**. For schools, improving students' early experiences of science learning and raising their aspirations for further study are recognised priorities, and the contributions of **In2science** Mentors are highly valued.

*You know, once they've gone into the profession of teaching, (teachers) may not have kept up with the current areas of science. **Some are saying that they don't go out there and discover new things, to learn new things, but that it has been easier for them to engage in conversations with students (Mentors) in, you know, 2nd, 3rd, final year of science courses ... to actually have those conversations around what is the most recent technology in biotechnology, and 'what are we engaging with out there?', and to gain that support as well.** (School principal)*

**In2science** links schools to a source of **latest knowledge and developments in science/mathematics**. The Mentors are young scientists, their university studies exposing them to the current debates and the most recent research in their fields. Each teacher-Mentor partnership is unique. Hosting a Mentor is not like supervising a trainee teacher.

The value of **In2science** extends beyond the in-class interactions between Mentors and students. The program can have positive effects upon a school's science teaching 'culture'. Working with Mentors, describing what they plan to do in class, why, and negotiating Mentors' involvement, promotes reflective practice among teachers. Science classes can become more interactive, and teachers are actively encouraged to experiment and to share ideas.

*(Science is) **an area where knowledge is changing every year, so they bring that... latest sort of understanding that's associated with them, which I think is an informal form of professional development for our teachers .... I do think it just does bring another level of the newness into their classrooms.***  
(Principal; S3)

## Teachers view

Teachers see Mentors as **valuable role models** for school students. Mentors are young people who, while diverse in their particular interests and backgrounds, share an enthusiasm for science and for learning. School students are introduced to a new ‘face’ of science/mathematics, one which challenges their preconceptions and with which they can relate.

Students’ **relationship to Mentors** is unlike their relationship with their teachers. Many students find it easier to ask questions, explore ideas, and seek help from a young person they see as a fellow learner. For teachers, there are **multiple benefits from having another, knowledgeable person to help** in class. Together, the Mentor and teacher are able to provide more, direct assistance to students. Practical classes are safer – and sometimes only made possible – through the extra supervision available. And Mentors often contribute ideas, information, or expertise that is complementary to the teachers’, enhancing the planning and delivery of lessons.

*I really like working with people that are passionate about science and also passionate about enthusing students. I was really happy to have an extra body in the room that is passionate about science, and could also answer kids’ questions with up-to-date things. I’ve seen students interact and engage, whereas sometimes they feel that, when it’s the teacher, they’re really shy and they won’t speak.*

(Teacher)

*Whenever I know that I have a mentor in that class, I try and create a lesson or a lesson plan and practices which involve certain group work, or where there’s more one-to-one interaction between the teacher and the student...The teacher certainly can use their help and support, and just having one more person there to share their knowledge, to just make it less teacher centred, you know. The focus is not on the teacher. It actually helps to make it a more discussion type scenario, than giving a lecture or giving a talk. (Teacher & link teacher; VCE biology and maths; S1)*

## Mentors view

Mentors are volunteers, typically with dual motivations for spending time working with science students in schools. First, they value the skills they gain from **applying their science/mathematics knowledge and communicating their ideas** to younger students.

Secondly Mentors often seek to ‘give something back’ to schools, to **enhance the experience of science for school students, and to raise students’ awareness** of the possibilities for pursuing further studies and careers in science.

*I thought being involved with school students would be a rewarding way to give something back to the community. Also, I really believe in the need to keep people studying science, and thought I might be able to help.*

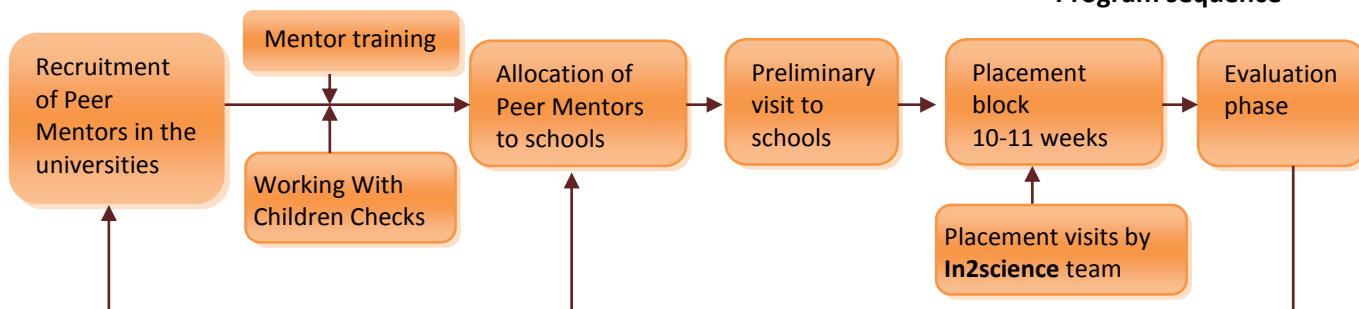
(In2science Peer Mentor)

Many Peer Mentors have gone on to establish careers as teachers gaining inspiration from participation in the program.

## Details of In2science and its activities to achieve stated aims

Government schools are invited to be involved in the **In2science** program based upon their geographical location and that of the university campuses and the Peer Mentors. Once partnered with the program, there is an aim to provide Peer Mentors each year, in a long term and sustainable program. **In2science** aims to place 1-4 Peer Mentors per school. It is the Link Teacher's role to assign the Peer Mentors to particular classes and handle any problems arising at the school level. Link Teachers receive a school's pack which contains all the necessary information for managing placements.

### Program sequence



The **In2science** program recruits students from each of the partner universities. Peer Mentors are individually selected, after interview, on the basis of their motivation, communication skills and other relevant qualities. They undergo pre-placement training prior to commencing. All Peer Mentors receive certificate of participation. Peer Mentors only receive reimbursement for their travel expenses.

Peer Mentors are matched to schools that are either local to where they live or to the university campus at which they study. All Peer Mentors undertake a preliminary visit to their allocated school to meet staff, learn about the school and the classes they will be working with. These visits trigger the communication process with the teachers to whom they have been allocated.

All Peer Mentors complete a **Working With Children** check.

Placements run each semester, with Peer Mentors working with the same classes enabling them to establish a rapport with the students and the class teacher.

Class teachers receive documentation to help them understand the program and to maximise the use of the Peer Mentor in their classroom. Peer Mentors work within the classroom under the direct supervision of the class teacher.

During placements the **In2science team** make visits to the schools, offering support to both the teacher and Peer Mentor.

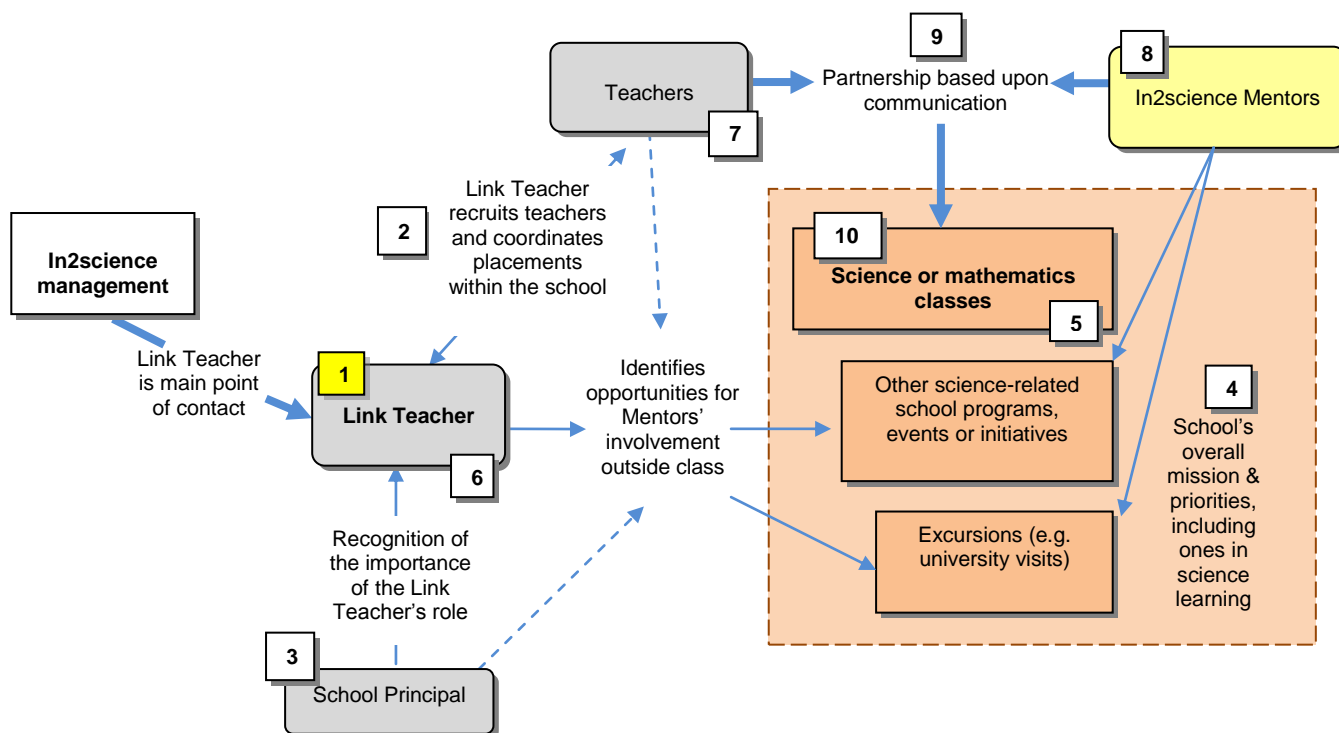
A regular **newsletter** is produced during placements to share the experiences of the Mentors and to provide news from the institutions regarding the latest news from the world of science and mathematics.



## Principles for the success of In2science in a school

There are several dimensions critical to the successful introduction of the program in schools. Arguably the most critical of these is that there be at least one teacher willing to both champion the program among colleagues, and manage the coordination within the school. The School leadership team is also very important for sustaining the program.

The diagram below illustrates the interplay, within schools, between the various elements involved in the In2science program.



### Key to principles

1. There is an enthusiastic teacher in the role of In2science Link Teacher.
2. The process is voluntary, involving the gradual recruitment of interested teachers.
3. The school's leadership is involved and supportive.
4. Mentors are involved in ways that align with the school's overall mission.
5. Mentors are seen to be an integral part of the science teaching.
6. The role of the Link Teacher is recognised and supported.
7. Teachers have time to engage with the program, outside their classes.
8. The role of the Mentor is understood by all.
9. Teachers and Mentors communicate and negotiate.
10. Both Mentors and teachers create opportunities for students' interaction.



## In2science for Regional/Remote schools

### Outreach Programs

In2science has also undertaken outreach programs for regional schools to help engage students in the more remote areas of Victoria.

**Roadshows** - In2science has run successful roadshows to the regional areas of Victoria. Based upon topics such as nanotechnology and biotechnology. These visits provided students with an interesting and informative presentation along with workstations where students get to interact with Peer Mentors.

### In2science evaluation

The program is reviewed regularly with teachers, Mentors and students having the opportunity to provide feedback. External evaluations have been conducted, the most recent of which occurred in 2009 was conducted by the Centre for the Study of Higher Education, University of Melbourne.

### The In2science Patron

*Dr Alan Finkel AM – Chancellor Monash University*

### The In2science Board of Management

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