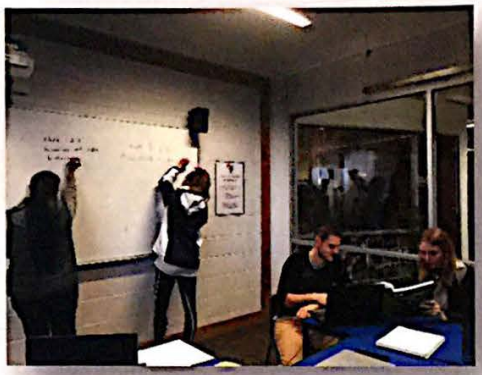
## 1. Brief Description of the Project and its Outcomes

### The Amazing Spaghetti Machine Contest

This project was first introduced to Footscray City College in 2010. The amazing spaghetti machine contest is coordinated by The University of Melbourne's School of Engineering which allows students from years 7-10 to compete against other public schools within the state to create an extraordinary machine doing an ordinary task. This projected was launched in 2010 at The University of Melbourne's 150 year anniversary, which FCC have been participating since its inception.

The focus on this project is to allow students within a school environment to accelerate their studies in a practical science environment. It incorporates elements of areas within structural, electrical, electronic, and mechanical and chemical engineering in practice but also allows students to gain experience in design, testing, construction, team work and project management. This covers the learning theory of multiple intelligence and collaborative/cooperative learning. Although all the students are of a science dominant intellectual mind frame, their concepts and ideas that are coming together for the creation of this machine will be very diverse which is great for collaborative and cooperative learning. During this project, the students will be doing all the work. They are the ones who will be presenting their machine on the day and it is entirely up to them to create it. So the importance of working as a team and helping each other is vital for the succession of this project.

### The Science Curriculum on Google Docs



This project is being introduced to the school this year for the first time. The idea of having all the content onto google docs for students and teachers to access is definitely a step forward which the technology era we are currently in. These online documents are directly linked with the school's curriculum and cover every subject a student will undertake at FCC. It breaks each faculty into year levels and concepts in which they will be required to go over during the year. It is put together so it is in chronological order for the teaching year and has all the necessary resources such as unit outlines, links to AusVELS, slideshows, YouTube clips, Practical Activities with risk assessment reports, as well as assessment included on these documents. The focus on this project is to give all classes consistency throughout the school. Although every teacher has their own individual teaching style, they are all going through the same amount content and assessing it using the same mediums.

## 2. Provide evidence of how project aims were met or not met and why with reference to relevant educational theory/or literature or policy cited in the plan.

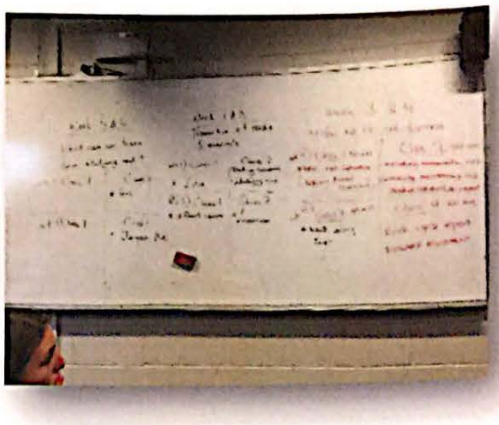
### The Amazing Spaghetti Machine Contest

The project aims we set were:

- *To allow students who are reaching for a deeper understanding within science to put their minds to the test.*
- *To have students not only looking at science concepts of energy transfer and engineering but also team work, confidence, trial and error and creation*

Although this is not a compulsory program, the students who were involved themselves within this project very much reached our project aims. On the day of the content, the students were showing great communication and teamwork with one another as well as students from various schools in whom they were competing against. They were all able to confidently explain their machine and gained an excellent insight into energy transfers.

**The Science Curriculum on Google Docs**



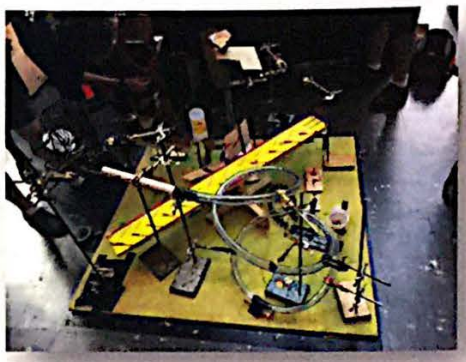
The project aims on a long term basis is:

- *To give overall consistency with the content being taught across all classes at school.*
- *To eliminate the need for planning classes*
- *To have set requirements for summative assessment*

Although this is not a completed project, as it has been a working progress for the entirety of this year, utilising all members of staff, it is beginning to take form and will prove to be an extremely beneficial project. We were able to communicate with staff and understand what we were required to do to assist with the growth of this project. We were able produce an entire unit of work which is now approved and published on the school's curriculum.

## 3. Comment on progress according to your Action Plan and advise of any changes to this plan and these reasons for any changes.

**The Amazing Spaghetti Machine Contest**

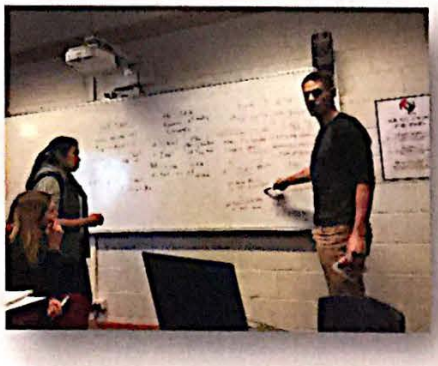


The following timeline for our involvement with this ACP are as follows:

- *The students are creating their "Amazing spaghetti Machine" which has the simple task of making a bowl of cereal in a series of energy transfer steps. This competition is run by The Melbourne University Engineering Faculty and is entirely a student driven competition.*
- *Twice a week a group of students will come together to develop new ideas and concepts that will be used in their final Rube Goldberg machine. These meetings are generally at lunchtime on Tuesdays or Thursdays as well as after school on Thursdays.*
- *Our role in this task is to supervise the students during the construction phase and talk them through different ideas regarding energy transfers. We aren't allowed to assist with construction itself, but we are able to show them and explain to them different concepts in which they can adapt and incorporate in the final machine.*

Our action plan maintained this routine progress all the way through to the completion of the competition. Our mentor teacher was pleased with our involvement with the students and allowing them to independently work and grow as a team.

**The Science Curriculum on Google Docs**



The following timeline for our involvement with this ACP are as follows:

*Every Tuesday after school, Footscray City College has PLT meetings for all staff members. They will all go into separate rooms with their dominant faculty and work on collaborating classroom plans in google docs for the school year. During these days I go to the Science Faculty and see how they create these google docs. Teachers are required to:*

- *Upload the unit outline for all areas on science from 7-9*
- *Incorporate in each outline the different subcategories that they cover over the year*
- *Explain the types of activities and class work they will do for each subcategory*
- *Look at how they will formally assess the students' progress in each subcategory*

Our involvement within the PLT meetings became a priority. With teachers having set work for themselves they also had set work for us to complete. They gave us a dead line and we continued to work collaboratively and independently to build the schools science curriculum. Our unit of work was submitted on the agreed date, and it was approved by our ACP mentor.

## 4. Evaluation

### The Amazing Spaghetti Machine Contest

The expected outcomes of this ACP were:

- Students will have enjoyed this experience
- Made new friends with their team mates
- Learnt new concepts while building the machine
- Found a potential pathway job they might wish to pursue at University
- Participating in this contest in years to come

This project was a great success with our expected outcomes having been met. Students were involved in a day that they will always remember, they made friends with many people from competing schools, they were able to learn and test new concepts, they were interested when taking the tour around Melbourne University and they were very fond of the idea of doing it all again next year! Students were also awarded "The Spaghetti with Everything" award due to their enthusiasm and sportsmanship with all other schools.

### The Science Curriculum on Google Docs

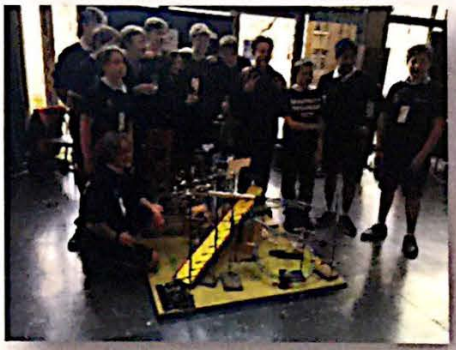
The expected outcomes of this ACP were:

- Development of all school curriculum from years 7-10 to be uploaded
- Develop excellent resources and references for all teachers to utilise
- Minimise the planned workload for future teachers at the College

This project will continue to grow and strength as it continues to develop. I believe it will take a few years for the staff to sift out any of the irrelevant information and continue to build it to a strong scaffolding of information. The teachers within the science department were very grateful of the work we put into the ACP project and were happy with the standard of work we produced.

## 5. Evaluation Tools

### The Amazing Spaghetti Machine Contest



To evaluate the success of this ACP project, we asked the students a series of questions to understand how they had further developed after being exposed to this experience.

- Did you enjoy this experience?
- Did you learn something new?
- Have you developed great friendships with peers?
- Will you be participating again next year?
- Do you think you would like a job in engineering and design?

The students were very thankful of our support and assistance during the entirely of this project, and we were all very sad to see this project conclude. It was a wonderful experience which helped us build a strong rapport with students in an accelerated academic environment.

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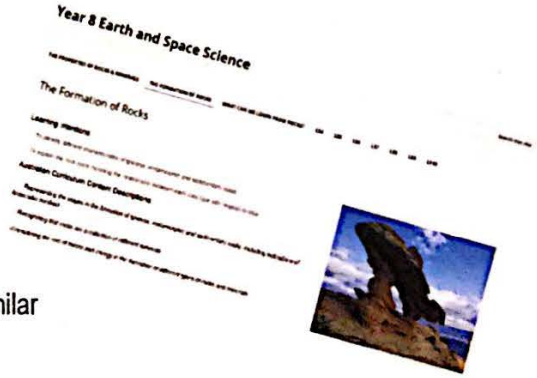


To evaluate the success of this ACP project, we would have to wait for the teachers to begin to use the set curriculum work. We found this experience to be very beneficial to our professional development and working within teams, and our feedback from the department was positive when it came to the quality of our curriculum piece. I would be very interested to see how this will grow and strengthen over the years and I hope many other schools continue to develop a similar curriculum database.

## 5. Professional Skills Utilised

### **Professional Skill #1** PLANNING

As a collaborative, all group members were involved in the implementation of the planning process. We evaluated the core unit as a whole, and then deconstructed the information into six weeks of comprehensible information. As a team we investigated potential activities, including formative and summative assessment, group work, self-driven inquiry, excursions, images and potential discussion questions. All activities were specifically designed to reflect relevant AusVELS content description and Footscray City College's course content. Over the course of the six weeks, we revisited the overall plan and modified areas as required.

### **Professional Skill #2** PROBLEM SOLVING

During the spaghetti machine competition, the finished product was looking like it may not come together before the final deadline, along with our ACP mentor we had to develop a solution to get students back on track and arrange extra time for them to do that. Group members made themselves available for extra sessions and looked for the older students in the group to act as leaders to drive progress within the project. For the curriculum portion the team was able to identify key concepts and think about practical and engaging activities for students to demonstrate and explore them.

### **Professional Skill #3** TEAMWORK

During our ACP, it was imperative that we worked together as a strong team. During the Curriculum portion of the ACP, we made sure that we were all doing our bit to help each other out as much as we could to ensure that no one was doing any more or less than anyone else. We would delegate tasks between ourselves to ensure we were consistently all working towards our goal. During the Spaghetti Machine portion, we ensured that we were all assisting with the lunch time and after school meetings. This was to ensure we were aware and up to date of how the students were going with the machine and we were able to assist when necessary. By the end of our Project, we were all helping each other to our full potential, therefore we were able to meet all of our set deadlines.

### **Professional Skill #4** TIME MANAGEMENT

During our ACP time management played a key role in the implementation and success of many of our goals. In the spaghetti machine portion of the ACP, the only available time to work with the students and create the machine was during 50 minute lunchtime meetings and the rare afterschool session. This scenario was the same for the science curriculum, as we could only work on this project during PLT sessions, twice a week. Because of these time constraints a lot of discussion between PST's was needed to ensure that the desired outcomes could be met on time. Specific tasks were allocated during each meeting had to meet our progression goals and keep on track with our deadlines.

### **Professional Skill #5** RESEARCHING

As a group, we researched the main content of the chapter we were working on. We then split the topic into 3 smaller portions to ensure a better research in to the topic. We used the textbook as a guide then used various resources like other books, TES Australia and used Google to such for relevant resources. In our pairs, we researched for relevant graphic representation on content, worksheet and activities for formative and summative assessment. We also researched the best way to present the information and how to use the platform we were using which was Google Sites. Overall, we did our researched on our content, assessments and method of display.

**Section A** **Professional skills displayed by the preservice teacher in the completion of the project**

**ACP MENTOR:** ADAM TAYLOR – HEAD OF SCIENCE, FOOTSCRAY CITY COLLEGE

The Science Method Students did a magnificent job with both the Amazing Spaghetti Machine competition and the curriculum development component of their ACP.

The efforts both within and outside normal school hours were outstanding with the planning of, working as a team and engendering a team atmosphere amongst the students, managing the activity so it was delivered on time and researching both activities for the competition and ensuring the curriculum development followed both school expectations and government requirements.

Excellent work.

**Please note – Additional pages may be added if space provided is insufficient.**

**Signatures** **Date**

| | |
|---|---|
| **Applied Curriculum Project Mentor Teacher:** | 19/10/15 |
| **School Partnership Coordinator:** on behalf of Mostafa. | |
| **Preservice Teacher:** (on behalf on science method) | 19/10/15 |

Please Tick ☐ · Victoria University may use this information to advertise and report on the work of Project Partnerships

**Note**

Preservice teachers must ensure that all signatories (above) receive a copy of this ACP report. Each preservice teacher in the ACP team will submit a copy of this signed report to their 'Approaches to Teaching and Learning 1' lecturer in the seminar in the **week beginning 12th October, 2015.**