WOLLUMBIN COMMUNITY OF SCHOOLS

Mathematics Stage 3 and Stage 4 Transition Project
Wollumbin Community of Schools

Our Purpose

What we wanted to achieve by participating in this project:
1. To enhance communication between the partner schools and between the partner schools and the high school. This has definitely occurred as a result of our regular transition meetings and communication processes implemented. This is on top of CoS Principal meetings and combined executive meetings that were already occurring.

2. Ensuring syllabus outcomes are mapped along the learning continuum, effective learning strategies implemented and continuity of learning is promoted. We have made a start by focusing on the Number Strand in the syllabus and with the Place Value Aspect 4 in the Numeracy Continuum. These areas were targeted from analysis of current NAPLAN data. Partner schools will provide information on their students’ transition to high school on their progress with stage 3 mathematical outcomes and where they sit on the numeracy continuum with Aspect 4.

3. Develop a shared understanding on the markers on the numeracy continuum. Again we have only focused so far on Aspect 4 and went through this at our meeting. Further Aspects will be explored in the future.

4. Identify gaps and extend talented mathematicians. Through a stronger understanding of curriculum outcomes and the numeracy continuum, along with stronger communication between our schools, gaps in students’ mathematical learning should be easier to identify with the high school being able to cater for this through adjustments and modifications to existing programs. We are already discussing further opportunities for gifted and talented students – no final decisions as yet.

Our Journey

Our Mathematics Transition Project 5P Plan has been embedded in the following documents: Wollumbin High School Plan and Milestones 2015 – 2017 and Wollumbin Community of School Plan 2015 – 2017. I have included the relevant pages from these documents at the end of this report. All of our
partner schools and high school have been meeting and communicating on a regular basis whilst undertaking this project and will continue to do so in the future.

Initial discussions involved the sharing of current programming and teaching practices around Mathematics and Numeracy, with partner schools being provided with high school stage 4 Scope and Sequences and the majority of primary schools agreeing on a common resource to follow similar patterns of delivery. Information was gathered in a survey about the length of time Mathematics is taught in Stage 3 and Stage 4 and what resources our schools were currently accessing and utilising.

Discussions around the changes to the new Mathematics Curriculum for Stage 3 was had and partner school teachers were provided with the opportunity to gain training from high school staff on content areas that they were not confident in. Head Teacher of Mathematics at Wollumbin High School put an email group together of all relevant staff involved in the project and ensures all members of the group receive regular communications with regards to the project and passes on appropriate DEC Secondary communications that may assist in Stage 3/4 Transition such as Maths Links and Mathematical Bridge Newsletters plus sharing of online resources.

On Thursday 19 February 2015 we had our initial training and development on the Transition Project which gave us some great teaching strategies and ideas to take back with us to our schools. This also allowed us to connect with the wider transition project community. From this training day we received copies of I Can Statements for the Numeracy Continuum that we were all happy with.

The first initiative implemented was booking a maths day at the high school with Stage 3 and Stage 4 students participating in hands on maths activities as a fun interactive transition activity for our CoS students. We already had a Maths Olympiad Challenge Day booked in for Term 3 for our Stage 3 students which has been a transition activity between our schools for a few years now. Both transition activities were highly successful and engaging for our students.

At our next meeting we analysed current trends from our NAPLAN data, looked at both the Numeracy Continuum and NSW Mathematics Syllabus and used this as the basis to make the following decisions:
CoS Numeracy Stage 3 and Stage 4 Number Teaching Strategies

• Stage 4 teachers need to use DENS 1 and 2 Books for teaching strategies with Numeracy. This is in line with what our partner schools are using.
• Stage 4 teachers need to look at work sample activities on ARC, [http://arc.boardofstudies.nsw.edu.au/go/stage-3/maths/stu-work/](http://arc.boardofstudies.nsw.edu.au/go/stage-3/maths/stu-work/) to access open ended questions to ascertain students’ mathematical thinking. These types of activities are being used by partner schools to determine numeracy continuum markers.
• Looked at how we taught basics with addition, subtraction, multiplication and division – commonalities for consistent teaching approach.
• Wollumbin High School would like: students to come to us with strong number skills, especially 4 operations and basic understanding of fractions, decimals and percentages.

Decision:

• Wollumbin CoS to concentrate on targeting Aspect 4: Place Value from the Numeracy Continuum and utilise common and consistent teaching strategies between our schools to achieve this.
• Wollumbin CoS to concentrate on Number Strand from Mathematics K-10 Continuum of Key Ideas as students need to be confident in this area to be able to be successful in the other strands.
• Assessment strategies for Place Value to come from the following sources:
• Sources: counting on assessment resource, count me in too  
• Look at other open ended questions
*There were further teaching notes listed to assist us in improving our students’ performance in Mathematics.

We then attended the Transition Conference in Coffs Harbour where we made our presentation which has been emailed to Glenn Langford.

This term we have had staff participate in professional learning through reciprocal visits between partner and high schools. Partner school staff demonstrated stage 3 lessons on the Number Strand and high school staff delivered lessons to stage 3 students on the same strand. This allows staff to have a greater appreciation for what we all do in our schools and to further develop common teaching strategies to make transition smoother.
Observation Notes from the visits:

COS Initiative

- Improving links with Community of schools.
- Reinforcing a common framework of language to ease the transition of year 6 students to high school.
- Murbah East Public School and Chillingham Public School ran activities of about 12-20 minutes, combination of theory/hands on activity/drill with a small group focus.
- Our focus was place value with the four operations, half the lesson was a presentation of key number concepts; the other was co-operative learning activity in groups of four students. These were problems where students had to work mathematically and solve collaboratively.
- Both primary schools were keen to work on language differences and found the exchange of ideas beneficial for students, teachers encouraged further meetings to strengthen links.
- Primary teachers used stories to reinforce concepts and there was a good use of smartboards/whiteboards for problem solving.
- Student groups were on the board and ability driven; students who attended the Mathematics Olympiad were comfortable and keen to engage in all activities.

Achievement Measures

The following measures have been achieved:

- Numeracy plan incorporated in CoS Strategic Plan and School Plans
- A CoS Scope and Sequence in place, smaller partner schools have common Stage 3 Mathematics Scope and Sequence and have been provided with Wollumbin High School Mathematics Stage 4 Scope and Sequence.
- Shared programs, all schools sharing programs and resources
- A bank of shared learning strategies, this has started and will continue to be developed
- Information/Data Sharing Profile of students transitioning to Wollumbin High School, this has already started to be developed with stage 3 Mathematics reported as below, at or above and position on Aspect 4 of numeracy continuum to be added.
• Review of programs to ensure flow of content and skills development stage 3 to 4 for learning continuity, current programs have been reviewed and adjusted, this will be an ongoing process.
• Identify opportunities to enhance achievement of working mathematically through engaging experiences for years 5 to 8, we have initiated World of Maths, Maths Olympiad Challenges in Stage 3 and Stage 4 and discussions of other opportunities for the future.
• Building effective pedagogy to engage students as they progress through Stage 3 and 4 learning outcomes – this has commenced this year with more work to continue in the future.

Future Sustainability beyond 2015

All funds have been expended from this grant with additional funds contributed by the schools. School contributions will continue to be allocated to this project ensuring strategies are embedded in programs.

Wollumbin High School executive and partner Primary School Principals have committed to semester meetings and further professional learning to ensure project outcomes are sustainable. We are a committed community of schools we will continue to work together on the goals of this project and other numeracy transition activities as outlined in our 2015 – 2017 Strategic Directions.

We still need to further develop the following:
• A greater understanding of other aspects on the numeracy continuum
• Utilising resources and ideas provided to us for assessment of the syllabus and numeracy continuum and having a chance to discuss students’ performance on these assessments.
• Collecting and discussing students’ work samples and annotating these samples against syllabus outcomes and continuum markers.
**Wollumbin Community of Schools Plan 2015 – 2017**

### Strategic Direction 2: Continuum of Learning Stage 3 and 4

<table>
<thead>
<tr>
<th>Purpose</th>
<th>People</th>
<th>Processes</th>
<th>Products and Practices</th>
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<tbody>
<tr>
<td>To improve student learning experiences across the transition bridge of stage 3 and 4 through collaborative learning programs enhanced learning experiences and opportunities.</td>
<td>Students will be engaged with teaching and learning programs that support a smooth transition to high school. Staff will build into programs strategies that enhance student learning across stage 3 and 4. Executive will focus on sharing knowledge across the community of schools.</td>
<td>Numeracy continuum project builds shared understanding of the markers, enhanced learning outcomes in working mathematically through shared professional learning opportunities. Numeracy information and data, sharing profiles of students transitioning to Wollumbin High School. Community of schools development of scope and sequence for numeracy.</td>
<td>Products: Numeracy scope and sequences for years 5, 6, 7, and 8. Resource package of annotated work samples mapped against the numeracy continuum. I’m Going to High School Program implemented. Year 6 tasks scaffold on the high school model for term 4. Practices: Community of schools strategically plan for continuums of learning stage 3 and 4 for all Syllabuses. Programs reflect numeracy community of schools initiative. Mathematics Olympiad Structure updated. Wollumbin High School staff utilising the numeracy data provided by the community of schools to guide teaching and learning for year 7 students.</td>
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### Improvement Measures

Survey reflections by staff on numeracy project achievements and future directions. NAPLAN achievement over time improves.

Year 6 student aware of Wollumbin High School focus on quality work and portfolio interviews. Year 6 students use Wollumbin High School task templates during term 4.

KLA leaders will collaborate with partner primary teachers on continuums of learning for each syllabus. Community of School teams develop an I’m Going to High School package. Review current Mathematics Olympiad and identify new student challenges. Introduce demonstration Quality Portfolio interviews by Wollumbin High School to Community of schools year 6 students. Community of schools staff implementing Wollumbin High School task scaffolds with year 6 students in term 4.
### Strategic Direction 3: Enhanced, collaborative learning community

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| To ensure collective responsibility for a culture of continuous improvement of student learning outcomes, learning environments, partnerships and inclusivity. | **Students**: Develop confidence to reflect on own learning, provide feedback to peers and teachers and be responsive partners in learning.  
**Staff**: Take shared responsibility for student improvement and contribute to a transparent learning culture valuing collaboration and feedback  
**Parents/Carers**: Build awareness, understanding and confidence to engage in partnerships with the school to support the learning of students  
**Community Partners**: Build awareness of the importance of building an inclusive school learning culture focused on improved student learning outcomes  
**Leaders**: Use collaborative feedback and reflection to promote and generate learning and innovation within the school community | Teachers provide opportunities for students to reflect on learning provide meaningful feedback and explicitly teach students how to be responsive learners.  
Audit identifies current resources utilised by the school to meet student needs and where to target future resource development.  
Design a multi-faceted communication strategy to raise awareness about the importance of partnerships and inclusive learning culture.  
KLA best practice strategies arising from Action Research Projects targeting engagement and attainment are shared across KLAS.  
Close collaboration between CoS and WHS staff focusing on literacy, numeracy, well-being and transition. | **Product**: Explicit process established to encourage, receive and respond to feedback.  
Strategic plan to expand the knowledge of available resources that the school community can access to meet identified student needs  
**Practice**: Active partnerships ensure continuity of learning from Stage 3 to post-school destination.  
**Staff actively sharing expertise across KLAs, WHS and the broader learning community.**  
The school makes deliberate and strategic use of student, teacher and parent partnerships for the purpose of improving student outcomes.  
Enhanced collaborative performance and development culture. |

### Improvement Measures

- 100% of staff shares expertise and best practice across KLA and/or the broader learning community.
- 80% of stakeholders involved in the feedback processes.
- 100% of students are completing the self-reflection section of assessment tasks.
### Wollumbin High School Strategic Direction 3 Milestones

**Project leaders:**

<table>
<thead>
<tr>
<th>2015</th>
<th>TERM 1</th>
<th>TERM 2</th>
<th>TERM 3</th>
<th>TERM 4</th>
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<td>PROCESS</td>
<td>MID TERM</td>
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<td>MID TERM</td>
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<td>Performance Development Framework Executive</td>
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<td>Evaluation Processes and impact assessment</td>
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Enter the key milestones to monitor and track delivery of the outcomes

- PDF Training: Principal and TF Representative
- PDF T5 Exec Afternoon
- Accreditation Process TAA - Principal and DP training
- Exec Development TPL
- Staff TPL – Lesson Observation
- Exec Development – providing feedback – verbal and written
- Staff TPL – review process and identify support for 2016
- Annual Milestone PDF process established
- CoS Numeracy project concludes
- Annual Milestone Enhanced stage 3 – 4 transition
- Project evaluation PDP implementation

Wollumbin Community of Schools
## Identify the resources required to achieve the above milestones

<table>
<thead>
<tr>
<th>Monitoring efficient and effective use of resources</th>
<th>DEC Grant: $5000</th>
<th>TPL: $1000</th>
<th>TPL: $2000 RAM Aboriginal Funding $2000</th>
<th>RAM: CoS $1,800</th>
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