Australian Science and Mathematics School
Annual Report
2012
**Context**

**School Name:** Australian Science & Mathematics School  
**School Number:** 1800  
**Principal:** Susan Hyde  
**Region:** Southern Adelaide

**Charter**  
The ASMS serves as a state-wide focal point for teaching and learning, professional development and research aimed at fostering improvement, innovation and reform in Science and Mathematics education. The school provides new ways of teaching and learning in Science and Mathematics through the creation of an environment for interaction between educators and professional scientists and mathematicians within institutions and industry in South Australia and beyond. The schools’ partnership with Flinders University is its main source of interaction.

The ASMS is intended as a resource for every school in the state through its programs of professional development and curriculum enhancement. Students and teachers from across South Australia are invited and encouraged to engage in individual and group visits to the ASMS outreach, exchange and vacation programs.

Teachers from around the state are able to work alongside ASMS staff in the ongoing development of the curriculum and teaching and assessment strategies. This work also informs the review and planning of professional development priorities.

The extent to which the charter has been achieved is outlined in the report of the site improvement plan.

**2012 Highlights**

**Highlights of the 2012 school year include**

- Under the guidance of the Governing Council the ASMS changed its badging to *Choose Your Own Adventure* to reflect the self-directed inquiry curriculum and the many learning enhancement opportunities offered by the school.

- The ASMS hosted visits from Nobel Laureate Professor Brian Schmidt, the Chief Scientist for Australia, Professor Ian Chubb and the Chief Scientist for South Australia, Professor Don Bursill.

- ASMS students travelled to Singapore, Canada, Malaysia, Japan, Korea, Argentina, and New Caledonia to participate in science fairs and cultural activities.

- ASMS hosted our annual International Science Fair where year 10 and 11 ASMS students were joined by over 60 students from Korea, Thailand, Japan, Singapore, Canada, New Caledonia and other states of Australia.

- A team of ASMS students working on the Australian Space Design Competition won the state final and participated in the national competition in Brisbane.

- The 40 students in the Music Club held a successful evening and performed at the 2012 Presentation evening in November.

- Lunchtime sport coordinated by Jamo (Matt Jamieson) passed the 1000 game milestone and student Scott McKenzie broke Abdella Gabrais’ record of 224 games with a final score of 240.

- The Service Club coordinated by Debbie Smith was active again. They raised nearly $3000 for various charities and planted over 350 trees as part of the Flinders University’s regeneration project.
The impact of the ASMS: achieving its charter to lead the transformation if science and mathematics education.

The ASMS continues to be recognised as a world leader of innovation in education by the OECD as one of 40 schools across the world named as exemplary cases of an Innovative Learning Environment. As a result we are a lead participant in the DECD Innovation Network and a research partner in the Learning Environments Action Research Network based from the University of Melbourne. The impact of the ASMS at the state level is demonstrated by its inclusion as a resource in the State Government’s STEM Skills strategy, in the DECD Numeracy and Literacy Strategy, for providing the professional development for the Advanced Technology Industry Pathways Project involving 20 schools and over 100 teachers and through its active participation the Teach SA project.

Report from Governing Council

To improve the council’s attention to strategic matters, presentations from staff were arranged each meeting to familiarize the council with the innovative program and activities of the school.

- The nature of 21st century learning
- Online 24/7 learning, assessment and reporting through the ASMS portal.
- The role of the tutor group program to enhance our students’ self-directed learning capabilities.
- The contribution of the Learning Enhancement program of the school.
- Opportunities of the new SACE for ASMS students, and in particular the introduction of the research project in year 12.
- The nature and impact of the ASMS professional learning services.

Activities related to the strategic focus of the Governing Council included

- Contributed to the planning of the STEM Schools Confederation project led by the ASMS as part of the federal government’s Empowering Local Schools project.
- Responded to the DECD Literacy and Numeracy strategy consultation.
- Wrote to the Minister and the SACE Board regarding the opportunities of the Year 12 Research Project.
- Met with our partner, Vice Chancellor and President of Flinders University, Professor Michael Barber to outline the school’s achievements and plans and discuss how the university could further support our charter and our students.
- Approved the new badging and marketing materials based on the Choose your own Adventure theme.
- Approved the Innovation agenda.

Site Improvement Planning

Strategic Direction 1; Strategic Foundations

The ASMS continues to build programs and practices that provide leadership for innovation in science and mathematics education.

Key indicators

- The contributive leadership strategy is documented, implemented in the school and promoted as an innovation to support the transformation of secondary schooling. **ACHIEVED**
- The Mathematics and Abstract Thinking program is researched, documented and promoted. **ACHIEVED**
- The ASMS/Flinders University partnership, especially research outcomes and collaborative ventures are documented. **In Progress.**
- Partnerships to support the Avionics Program are established and publically acknowledged. **ACHIEVED**

Strategic Direction 2; Cohesive Culture

All students and staff who attend the ASMS feel secure and valued as members of the school community.
Key indicators  **ACHIEVED**
- Self-directed learning capacities of students are measured and tracked to inform improvement.
- Pedagogy that supports the development of self-directed learners is developed and documented.
- Students report that the PLP supports their academic achievement.
- Parent access to ASMS portal increases.
- ASMS electronic reporting is achieved.

**Strategic Direction 3; Learning Community**
ASMS will provide an ICT rich learning environment that supports an innovative and inquiry oriented curriculum. Our students are engaged in personalised and authentic learning of emerging, innovations-oriented sciences and mathematics. They are inspired to take up science, technology, engineering and mathematics pathways.

Key indicators
- ASMS curriculum design is documented and promoted as an innovation. **ACHIEVED**
- Evidence of alternative and credentialed pathways for students. **In progress**

**Strategic Direction 4; Professional Supports**
Professional learning at the ASMS aims to support student learning, teacher learning, policy learning and through our partnership with Flinders University, teacher-educator research.

Key indicators
- Opportunities and participation of DECS school teachers and leaders in professional learning programs about 21st Century learning to engage young people in Science and Mathematics are increased. **ACHIEVED**
- Base line data about the impact of ASMS professional development exists. **In Progress**

**Senior Secondary**

**Students in Yr 12 Undertaking Vocational or Trade Training**
10 year 12 students undertook vocational or Trade Training.

**Students in Yr 12 Attaining a Yr 12 Certificate or Equivalent VET Qualification**
15 year 12 students completed the SACE and studied VET.

**Overview of SACE results**
Of the 104 students who received an ATAR (not including bonus points) 22% were above 90, 17% between 80 - 90, 18% between 70-80, 18% between 60-70. All of these students were offered a course at a university. The highest ATAR was 98.95.

9 Students undertook Extension Studies (a first year University subject) at Flinders University as part of their SACE. 3 students achieved High Distinction, 3 a Distinction, 2 a Credit, 1 a Pass.
Table 1: Attendance by Year Level

<table>
<thead>
<tr>
<th>Attendance by Year Level</th>
<th>% Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>Year 10</td>
<td>94.2</td>
</tr>
<tr>
<td>Year 11</td>
<td>90.8</td>
</tr>
<tr>
<td>Year 12</td>
<td>96.3</td>
</tr>
<tr>
<td>Total All Year Levels</td>
<td>93.6</td>
</tr>
<tr>
<td>Total ACARA 1 TO 10</td>
<td>93.9</td>
</tr>
</tbody>
</table>

Attendance rates have varied within acceptable limits.

Destination

Table 2: Intended Destination

<table>
<thead>
<tr>
<th>Leave Reason</th>
<th>School</th>
<th>Region</th>
<th>Index</th>
<th>DECD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td></td>
<td>4.1%</td>
<td>2.7%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Interstate/Overseas</td>
<td>6</td>
<td>5.0%</td>
<td>8.5%</td>
<td>10.1%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>1.2%</td>
<td>0.8%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Seeking Employment</td>
<td>1</td>
<td>0.8%</td>
<td>3.0%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Tertiary/TAFE/Training</td>
<td>7</td>
<td>5.8%</td>
<td>5.8%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Transfer to Non-Govt Schl</td>
<td>3</td>
<td>2.5%</td>
<td>11.7%</td>
<td>13.6%</td>
</tr>
<tr>
<td>Transfer to SA Govt Schl</td>
<td>21</td>
<td>17.5%</td>
<td>45.6%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Unknown</td>
<td>82</td>
<td>68.3%</td>
<td>20.2%</td>
<td>16.8%</td>
</tr>
</tbody>
</table>

Destination of unknown students related to the 2012 year 12 students, most of who proceeded to university.
Client Opinion

Parent feedback (17 respondents)
Feedback that was more positive (4) than other schools related to satisfaction with the learning and assessment programs, approaching teachers and the way students of different cultures were treated. Feedback about the school’s communication about school activities and opportunities to seek parents opinion about school plans and programs was less positive (7) than other schools.

The latter concerns were addressed by an improvement to the schools news section on the website and communication from the Governing Council about their activities in monitoring the school’s strategic plan.

Staff feedback (11 respondents)
Feedback that was more positive (8) than other schools related to opportunities to evaluate and develop curriculum, assist students to become lifelong learners, the low level of bullying and harassment in the school, the organization of the school and quality of feedback and professional development available.
Only one concern arose from staff related to their need to be supported to discuss issues with other staff. This concern has been addressed by introducing operational charters and a code of conduct into the work of the staff teams.

**Student feedback (50 respondents)**
Feedback that was more positive than other schools accounted for 27 items of 47 items. Of note is the majority of responses was positive in the leadership and decision making section (all items), 12 our 17 in the relationships and communication section, 11 out of 18 in the support of learning section.

### Accountability

### Staff

#### Teacher Qualifications
All teachers at this school are qualified and registered with the SA Teachers Registration Board.

<table>
<thead>
<tr>
<th>Qualification Level</th>
<th>Number of Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor Degrees or Diplomas</td>
<td>75</td>
</tr>
<tr>
<td>Post Graduate Qualifications</td>
<td>55</td>
</tr>
</tbody>
</table>

Please note: Staff that have more than 1 qualification will be counted more than once in the above qualification table. Therefore the total number of staff by qualification type may be more than the total number of teaching staff.

#### Workforce Composition including Indigenous staff

<table>
<thead>
<tr>
<th>Workforce Composition</th>
<th>Teaching Staff</th>
<th>Non-Teaching Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indigenous</td>
<td>Non Indigenous</td>
</tr>
<tr>
<td></td>
<td>Non Indigenous</td>
<td></td>
</tr>
<tr>
<td>Full-time Equivalents</td>
<td>0</td>
<td>33.2</td>
</tr>
<tr>
<td>Persons</td>
<td>0</td>
<td>36</td>
</tr>
</tbody>
</table>

#### Financial Statement

**Income by Funding Source**

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Grants: State</td>
<td>$5218991.49</td>
</tr>
<tr>
<td>2  Grants: Commonwealth</td>
<td>$289,875.91</td>
</tr>
<tr>
<td>3  Parent Contributions</td>
<td>$300,257.31</td>
</tr>
<tr>
<td>4  Other</td>
<td>$228,411.38</td>
</tr>
</tbody>
</table>