Latest Events
For the latest events and Conference information go to SASTA’s website:
www.sasta.asn.au
Find us on Facebook & Twitter @ SA Science Teachers Association

Contents

Online Educational Designer, Nick Jackson, provided an inspiring keynote address at the Maths & Science Middle School Conference held at Norwood Morialta High School on Friday 30 November 2013. Once again this popular annual event was booked out.

South Australian Science Teachers Association Inc.
Patron: Dr Barbara Hardy AO ABN 22 938 317 192
Registered by Australia Post – Print Post Publication No. PP 100004158
Member of Australian Science Teachers Association (ASTA)

Supporting teachers of science • Advancing science education
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Ian Maynard (Treasurer)
Peter Donnelly
John Glistak
Chris Jordison
Peter Turnbull

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Awards
Chris Jordison

CONASTA 63
Peter Turnbull

PD & Conferences
Peter Donnelly

Journal
John Glistak

Membership
Mark Divito

Oliphant Science Awards
Peter Turnbull

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URL: www.sasta.asn.au

Newsletter copy deadlines 2014
(Advertising deadlines one week earlier)

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<th>Edition</th>
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<tr>
<td>February</td>
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Advertising
Advertising rates & booking form online at www.sasta.asn.au

Views expressed in this newsletter are not necessarily those of SASTA or the editors. Whilst every effort is made to be factual, no liability is accepted for the accuracy of information presented.

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Adhering to the following guidelines would be appreciated:

Save as a Microsoft Word document
Tables to be set up as text with one tab between columns and a return at the end of each row.

For spelling please use the Macquarie Dictionary and where several alternative spellings are listed, use the first. The exception to this is when you are citing, referencing or quoting directly from a source which uses alternative spelling. Photographs should be high quality untouched digital photographs.
From the President

Welcome back to a new year of teaching science. This year we are hosting the National Science Teachers conference, CONASTA 63, in Adelaide from 6-9 July. It only comes to SA every eight years and we are combining our annual conference to make it the biggest event of 2014 for science teachers. If you can only make it to one conference this year, then this is the one!

On another note, it is interesting that the two scientists acknowledged in the highest Australia Day honours, Professors Bruce McKellar and Sam Berkovic, have commented on the need to fight a growing anti-science sentiment in the general community. McKellar expressed concern about a basic denial in western society that science has done anything for us. As a theoretical physicist he has highlighted the example of how basic radio astronomy research to analyse radio signals from the universe led to the development of mobile phones. Berkovic sees the growing anti-science trend as a ‘puzzling paradox’. The honoured neurologist notes that despite the enormous advances and deepening understanding in science, the push to whacky alternative medicine is ever greater. This an important area that I believe science teachers can strongly influence and in particular through the Science as a Human Endeavour curriculum strand.

Middle School Conference 2013

The SASTA/MAWA Science/Maths middle school conference held at the new venue of Norwood Morialta High School on November 29 last term was a huge hit and our most popular single event for the year. Well done to SASTA’s convenor Jane Wright, her helpers and the MASA group for organising such a successful event.

Mark Divito
President

SASTA Awards

Start thinking now for 2014

There are many great teachers out there that SASTA would like to acknowledge, but often they don’t get nominated for awards because teaching is a very busy job and people don’t get the time to fill in the nomination forms. Start thinking now. Alert your principal.

There are many awards for SASTA members:

• SASTA Medal – for significant contribution to SASTA;
• Credit Union SA/SASTA Outstanding Teacher Award – for junior primary, primary, middle years and senior years teachers;
• Helen Castle Memorial Scholarship – worth $1,000 for country teachers to attend the the CONASTA 63 national conference.

Nomination forms are available at http://www.sasta.asn.au/about_us/sasta_awards

Nominations close Monday 28 April 2014.
### Teachers New to SACE Stage 2 Biology

**Monday 24 February 2014**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 am</td>
<td>Registration</td>
</tr>
</tbody>
</table>
| 9:15 am | Introduction | Stage 2 curriculum development  
| The current SACE course  
| SACE Board documents  
| Designing a Teaching Program  
| Alternative Programs |
| 10:00 am | Morning Tea |
| 10:20 am | Theory Lessons | Teaching biology  
| Analysing worksheets, class assignments, homework assignments using assessment design criteria and performance standards  
| AV and multimedia materials in Senior Biology |
| 11:45 am | Assessment Plans | Designing an assessment plan  
| Sample assessment plans |
| 12:15 pm | Lunch |
| 1:00 pm | Moderation | SACE moderation |
| 1:30 pm | Preparing tests and issues investigations | Analysing test questions  
| Preparing answers |
| 2:00 pm | Afternoon Tea |
| 2:15 pm | Marking | Marking tests and issues investigations  
| Marking extended response questions |
| 3:15 pm | Questions & Resources | Where do you get help?  
| SACE Board and SASTA – how can they help science teachers? |
| 3:30 pm | Close |

### Teachers New to SACE Stage 2 Chemistry

**Monday 24 February 2014**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>9:00 am</td>
<td>Registration – G.11A</td>
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<tr>
<td>9:15 am</td>
<td>General Introduction</td>
</tr>
</tbody>
</table>
| 9:30 am | Assessment Operations | Quality assurance cycle  
| Key dates  
| Assessment Groups |
| 9:45 am | Assessment and SACE Board Policies | Moderation and external assessment  
| Supervision and verification of students’ work  
| Assessment deadlines and submission dates  
| Special provisions |
| 10:45 am | Morning Tea |
| 11:00 am | Learning and Assessment Program (LAP) | Structural elements  
| Exemplars  
| Addendum  
| Variations |
| 11:30 am | Teaching Programs | Organization  
| Connections |
| 12:15 pm | Lunch |
| 12:45 pm | Group Work | Practical program Formative/Summative  
| Example of a Skills & Applications Task (i.e. Test)  
| Example of an Investigation (i.e. Summative Prac.) |
| 2.00 pm | Afternoon Tea |
| 2.15 pm | The Moderation Process |
| 3.00 pm | Resources available to support you (i.e. Texts, Study Guide) | Further Questions and Discussion |
| 3:30 pm | Close |

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**Cost:**

<table>
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<td>Corporate Members</td>
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<tr>
<td>Non-Members</td>
<td>$180</td>
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All workshops will be held at the Education Development Centre, Milner Street Hindmarsh.

Register online at www.sasta.asn.au
Teachers New to SACE Stage 2 Physics
Friday 28 February 2014

Program

9:00 am  Registration and Welcome
9:15 am  General Introduction to SACE Physics requirements – Lois Ey

Subject outline walk through
• Investigation skills
• Content
• Assessment
• Performance Standards

Assessment Operations
• Quality assurance cycle
• Key dates
• Assessment Groups

Assessment and SACE Board Policies
• Supervision and verification of students’ work
• Assessment deadlines and submission dates
• Special Provisions

Getting help

10:45 am  Morning Tea
11:00 am  Approaches to Learning – Class Activities – “Here’s How I Do It” – Brian and Peter.
11:45 am  Assessment task design – Mostly Brian (current work) with a few thoughts from Peter and attendees.
12:15 pm  Lunch
1:00 pm  Use of ICT Resources (in class, practical sessions and for private study) – Brian and Peter:
• Software, video, simulations, PD materials
• Texts with ICT support
• Tablet opportunities
• Data loggers
2:00 pm  Administration at the school level – grading, reporting, watching for plagiarism – Brian and Peter + ideas from attendees
2:15 pm  Afternoon Tea
2:30 pm  *Here’s How I Do it (attendees – come prepared), Q & A (please send us some) – joint approach
External exam and Chief Assessor’s report – Brian and Peter
Physics in Years 7/8 to 11 – Peter and Brian
Final discussion generated by attendees (plus feedback sheet)
3:30 pm  Close

Please:
1. Come prepared to share at least one good idea – “Here’s how I do it!”. You get a two minute window after lunch to share with colleagues. Please email us with requirements beforehand.
2. Also, email us with any extra specific questions, requests or suggestions for the day so that we can try to deal with them. If you want to send us student work (no identifying features) for discussion, please do so.

Our intention is to make the workshop as interactive as possible. Your input will help. Please contact Brian at bparsons@scotch.sa.edu.au or Peter at peterzwaag@gmail.com. All attendees will receive e-copies of useful (we trust) curriculum materials for use in their teaching program.

Teachers New to SACE Stage 1 & 2 Psychology
Friday 28 February 2014

Program

9:00 am  Registration
9:15 am  Subject Outline – the big picture
9:30 am  Assessment Type 2: Skills & Applications Tasks – relevant to Stage 1 & 2
Task design, examples and performance standards
10:45 am  Morning Tea
11:00 am  Central Moderation of School – based assessment at Stage 2, which includes
• Assessment Type 1: Investigations Folio (30%)
• Assessment Type 2: Skills & Applications Tasks (40%)

Stage 2 SACE Board Exam
• How the exam is constructed
• Marks scheme for the exam
12:00 noon  Lunch
12:45 pm  Group Investigations – relevant to both Stage 1 & 2
• How to conduct a research program
• Guiding students in writing research proposals, drafts & final reports
2:00 pm  Afternoon Tea
2:15 pm  Mock moderation – recognizing grade brands in sample investigations
3:00 pm  Question time
3:30 pm  Close
Teachers New to SACE Stage 1 & 2 Nutrition

Friday 7 March 2014

Program

9:00 am  Registration and Welcome
9:15 am  General Introduction to SACE Nutrition requirements

Subject outline walk through
• Investigation skills
• Content
• Assessment
• Performance Standards

Assessment Operations
• Quality assurance cycle
• Key dates
• Assessment Groups

Assessment and SACE Board Policies
• Supervision and verification of students’ work
• Assessment deadlines and submission dates
• Special Provisions

Getting help

10:45 am  Morning Tea
11:00 am  Central Moderation of School – based assessment at Stage 2, which includes
• Assessment Type 1: Investigations Folio (30%)
• Assessment Type 2: Skills & Applications Tasks (40%)
• Assessment Type 3: Stage 2 SACE Board Exam
  • How the exam is constructed
  • 2013 Exam feedback: the Chief Assessor’s report

Assessment Panels
• Applying for marking and moderation panels

12:00 pm  Lunch
12:45 pm  Approaches to Learning & Assessment Task Design
• Teaching nutrition: It doesn’t have to be just Classroom based!
• Designing an Assessment Plan, and filling in Addendums
• Designing a Practical program: Types of practicals & Assessing practical work

2:00 pm  Administration at the school level – grading, reporting, watching for plagiarism
2:15 pm  Afternoon Tea
2:30 pm  Here’s How I Do it: Attendees – come prepared with at least ONE good idea to share and discuss, and any Q & A. A Feedback Sheet to finish the day off (Thank You).
3:30 pm  Close

Get into Genes is a FREE hands-on, curriculum-linked biotechnology workshop for secondary students on gene technology in food production & plant breeding

www.getintogenes.com.au

Money Smart Professional Learning Program

SASTA in association with CEASA and the Australian Securities and Investments Commission (ASIC) are offering schools the opportunity to have the Money Smart program introduced to their staff at no cost.

Money Smart Teacher Workshop 1 – Introduction to consumer and financial literacy education in Australia, will provide teachers with an opportunity to investigate a new financial literacy resource developed for R-10 schools through a one hour professional learning workshop led by a Money Smart Facilitator.

The resource package is designed to equip teachers with the tools and resources to effectively teach consumer and financial literacy through real-life contexts and the knowledge and skills to be able to confidently integrate this into and across relevant learning areas of the Australian Curriculum: English, mathematics and science, F-10.

Workshop Purpose:
• to introduce consumer and financial literacy to whole staff — its importance and how it can be taught as a context for implementing the Australian Curriculum
• to provide an overview of the MoneySmart Teaching package and the MoneySmart units of work
• to provide an outline of the professional learning journey for the school to become a MoneySmart School
Professional Learning

In Term 1 2014, SASTA will offer the following professional learning opportunities:

**For Secondary/Middle school teachers**

These professional development workshops are suitable for secondary school science teachers of all levels – whether you’re just starting out, teaching in a new area, or have years of experience – our programs have something for you.

1. **Planning Inquiry-based Science Units – Australian Curriculum**
   
   **Date:** Friday 21st February / **Time:** 9.00am - 3.00pm
   
   In this workshop teachers will investigate the process and practicalities of inquiry learning in the Science classroom. They will engage in hands-on activities that will inform their understanding of the types of inquiry and how to implement them in their teaching program.
   
   Participants will collaborate to develop unit materials that exemplify inquiry approaches to teaching and learning.
   
   This workshop will provide teachers with explicit curriculum materials, investigations, planning tools and contemporary pedagogical strategies to enable them to successfully plan using the Australian Curriculum: Science.
   
   The Workshop will cover the following:
   - What is Inquiry Based Teaching?
   - Practical Representation/The 5Es Model
   - Strategies for Inquiry Based Teaching
   - Planning materials and templates
   - Resources available
   
   Who should attend:
   - Secondary/Middle school teachers

2. **Investigating Chemical Sciences: Years 8-10**
   
   **Date:** Friday 21st March / **Time:** 9.00am - 3.00pm
   
   How do I teach Chemistry? What activities can I do? Where can I find relevant and engaging activities and resources? This program will allow you to answer these questions and more.
   
   This is the first in a series of workshops for secondary science teachers that aims to give teachers the opportunity to expand their subject knowledge and gather new ideas about how to teach some of the more difficult concepts in this Sub Strand of the Australian Curriculum: Science.
   
   The workshop aims to give teachers the opportunity to:
   - Gain in-depth knowledge of the Chemical Sciences sub strand
   - Learn instructional tips and techniques
   - Perform some investigations and classroom activities
   - Build resources
   - Share best practice with colleagues
   
   Who should attend:
   - Secondary/Middle school teachers

**For Primary Years Teachers**

1. **Science in a Nutshell: Primary Years**
   
   **Date:** Friday 14th February / **Time:** 9.00am - 3.00pm
   
   Explore the new Australian Curriculum – Science and increase your confidence with implementing a teaching and learning program that covers the content using an inquiry-based approach.
   
   **Aims of the workshop**
   - enhance engagement with the Australian Curriculum: Science in primary schools
   - raise primary teachers confidence in methods of teaching science
   - empower teachers to develop engaging, teaching, learning programs
   
   This workshop will provide teachers with explicit curriculum materials, investigations, planning tools and contemporary pedagogical strategies to enable them to successfully implement the Australian Curriculum: Science.
   
   Who should attend:
   - Primary Years teachers

2. **Setting up a Science Classroom**
   
   **Date:** Monday 3rd March / **Time:** 9.00am - 3.00pm
   
   Children need opportunities to develop practical and inquiry skills in order to engage with the world in a scientific way and to make sense of what they are learning. Hands-on investigations promote curiosity and provide opportunities for the type of discussion and questioning which develop understanding.
   
   In this workshop teachers will be taken through simple steps that will enable them to implement the elements of scientific investigation in their classrooms.
   
   Teachers will have access to planning tools and many exciting new science resources that can enrich their teaching and learning program.
   
   Who should attend:
   - Primary Years teachers
3. Year 7 Science Series: Content, Competence and Confidence - Chemical Sciences

Date: Friday 28th March
Time: 9.00am - 3.00pm

This workshop will support teachers to further develop their current understanding of the Science Understanding Strand: Chemical Sciences.

The workshop aims to build teacher knowledge and conceptual understandings while participants are actively engaged in science investigations using the Science Inquiry Skills. The workshop will use an inquiry approach to the learning of science, providing teachers with the confidence and resources to implement the requirements of the Australian Curriculum in their classrooms.

Structure of Workshops

- **Big Science Ideas** – mapping of the concepts explored in the sub strand, what is your part in the story?
- **Building Understanding** – hands-on investigations that allow participants to explore the concepts and build understanding using explicit and modelled pedagogy.
- **Unit Development** – opportunity to develop rich science programs that embed the Capabilities of Literacy and Critical and Creative Thinking, the Science Inquiry Skills and that are framed by the Science as a Human Endeavour sub strand.

Who should attend:

- Year 6/7 teachers or specialist science teachers

All workshops will be held at the Education Development Centre, Hindmarsh. Cost: Personal Members/Student Members $95, Corporate Members $120, Non-Members $150. Registration available online at www.sasta.asn.au

Morning Tea and lunch will be provided at each workshop.

Australian Professional Teaching Standards

All of these workshops reflect the Australian Professional Teaching Standards. Teachers will receive a certificate of attendance that details the Standards covered.

**SASTA In-School Workshops NOW AVAILABLE!**

SASTA offers a range of in-school professional learning sessions that can be tailored to suit the needs of your school and teachers. All sessions focus on concrete classroom applications of the skills and understandings present in the Australian Curriculum: Science. The structure and length of these sessions is determined by the school in collaboration with the SASTA Project Officer.

Schools that successfully trialled these workshops in 2013 include: St Johns Lutheran Eudunda, St Augustines Parish School, Antonio Catholic School, St Aloysius College and Valley View Secondary School.

Please see enclosed brochure for more details about this exciting new opportunity.

**Book your session today!**

For enquiries and bookings, please contact the SASTA office on (08) 83540006 or email the SASTA Project Officer, Kate Dilger at: projectofficer@sasta.asn.au

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**Call for Nominations**

**Closing date: 7 April 2014 at 5.00pm**

**Background**

1. **Call for Nominations**
   - All members of SASTA are hereby notified of a call for nominations for three (3) positions on the Board.

2. **Composition of the Board and terms of office**
   - The Board consists of up to nine elected members who shall hold office for a term of three (3) years. Continuous elected membership shall not exceed nine (9) years.

   In accordance with clause 24 of the Constitution adopted at the Annual General Meeting on 16 April 2013, three positions have become vacant after one year.

**Responsibilities of Board Members**

The Board governs SASTA and has overall responsibility for determining the strategic plan and priorities, monitoring implementation and developing a resource base to support the organisation’s activities. It is also responsible for the financial viability of SASTA and ensuring compliance with statutory requirements applicable to an association. All Board members are required to act in what the Board considers are the best interests of the organisation, being the interests of the membership as a whole.

Nominees should be aware that there are at least six Board meetings each year for the purposes of corporate governance of the organisation. There is an emphasis on policy and, specifically, corporate governance. The Board is not involved in the day to day running of the association’s business.

**Position Description & Nomination Form**

A Board Member position description and nomination form is available on the SASTA website at www.sasta.asn.au in the ‘Members Area’.

*NB Only Personal Members are entitled to vote and hold office in the Association. Each Corporate Member shall be entitled to one vote by a nominated delegate acceptable to the Board in elections of the Association but no such delegate shall be entitled to hold office through Corporate Membership nor may Corporate Members nominate others for office.

**Further information**

Members interested in nominating for the Board are welcome to contact Greg Cole, Executive Officer, on 8354 0006 if they require further information.
Oliphant Science Awards: South Australia’s Largest Student Science Competition

Great Opportunities for Learning Through Science

2014 Oliphant Key Dates

Thursday 19 June – Registration Forms due.
Friday 20 June – Judges Registration Form due.
Saturday 9 August – Computer Programming and Robotics judging.
Friday 22 August – Deliver Crystal Investigation, Models & Inventions, Photography and Poster entries.
Saturday 23 August – Judging Day.
Sunday 24 August – Open Day.
Monday 25 August – Collection of non-winning entries.
Friday 19 September – Presentation Ceremony.

Dates to be confirmed, check SASTA website for updates.

2014 Category Titles

Photography
- Careers in Science
- Science in the Garden
- Shelter
- Adaptations to the Seasons
- Science in Architecture
- Light Shows

Posters
- The Amazing Properties of Water
- Scientific Shapes
- Waste or Resource?
- Renewable Energy

Science Writing
- Farming in the Future
- Collisions

BHP Billiton Awards

Congratulations to Maria Caruso South Australia’s teacher finalist in the BHP Billiton Teacher Awards.

Remember winning entries from the 2014 Scientific Inquiry and Models & Inventions categories will be forwarded to the BHP Billiton national competition. If you are planning a scientific inquiry, model or invention, have a look at the BHP Billiton judging criteria. There are great prizes for Primary and Secondary entries, including cash, a science camp and a trip to the USA to attend a science fair.

Check the list of sponsors’ prizes

Valuable prizes are awarded for entries that meet both the category requirements and the criteria described by our sponsors.

Ideas for starting your entry

Scientists solve problems

Look around you – have you got a problem that needs fixing? Many discoveries and inventions have been made by scientists trying to solve a problem.

Invent a solution

Here is a good web site to help solve your problem. The ‘Inventive Thinking Lesson Plan’ gives you easy to follow steps to help spark your inventive abilities. Look up http://inventors.about.com/library/lessons/bl_activity_2.htm

Experiment and find out why it is happening

Scientists experiment to understand how things work and what causes the effects seen. The scientific method is fundamental to designing good experiments. Check out the CSIRO CREST Awards http://www.csiro.au/crest

Scientists communicate their knowledge

Science Writing, Multimedia, Computer Programming and Robotics, Posters and Photography are great ways to inform people. Games can teach and be fun at the same time.

National Science Week

The chemistry theme could be used in Computer Programming and Robotics, Crystal Investigation, Scientific Inquiry, Games, Models and Inventions, Multimedia, and there are topics with a chemistry focus in Science Writing, Posters and Photography.

Get involved!

Find the Oliphant Science Award information at www.sasta.asn.au
CONASTA 63
The Human Faces of Science
6-9 July 2014, University of Adelaide city campus

The Australian Science Teachers Association (ASTA) and the South Australian Science Teachers Association (SASTA) are proud to be hosting CONASTA 63, the 63rd annual Science Education Conference of ASTA.

Over 400 delegates are expected to attend CONASTA 63, drawn from across Australia and overseas. There is no other national event which brings together the depth and richness of science education expertise in such a spirit of learning, discovery and camaraderie.

Distinguished keynote speakers

CONASTA has a reputation for outstanding Keynote Speakers. In 2014 we are honoured to have confirmed as speakers:

• Chief Scientist of Australia Ian Chubb, AC, who will be presenting the annual Stanhope Oration.

• Distinguished Professor; Nobel Laureate and Australian Research Council Laureate Fellow Brian Schmidt.

• Professor Roy Tasker of UWS, who was the 2011 recipient of the the highest accolade given by the Australian Learning and Teaching Council, the Prime Minister’s Award for Australian University Teacher of the Year.

• Professor Lynne Cobiac, Director of CSIRO’s Preventative Health Flagship.

• Professor Tanya Monro, ARC Federation Fellow and Director of the Institute for Photonics & Advanced Sensing.

• Professor Robert Hill, Executive Dean, Faculty of Sciences at the University of Adelaide

High-quality professional program in outstanding facilities

The C63 workshop program will be held at the City Campus of the University of Adelaide. Among the venues generously provided by The University are the new, state of the art Bragg’s Building and the Hub Central areas.

Workshops will include primary, secondary and lab tech topics, off-site visits to landmark South Australian science and research facilities, computer workshops, wet-lab workshops, cutting edge science presentations hands-on workshops and seminar discussions.

Social and networking events

Two much loved CONASTA traditions are the Science Breakfast and Conference Banquet. At C63, the Breakfast will be held at Blanco Restaurant at Adelaide Botanic Gardens on Wednesday 9 July. The Banquet, at which 150+ delegates will enjoy a night of fantastic food, company, music and dancing, will be held at Adelaide Town Hall (pictured) on Monday 7 July.

Delegates also enjoy numerous Happy Hour events, informal dinners and post-conference tours.

Registrations open February 2014 at asta.edu.au/conasta
Stage 2 Biology Practical Manual

The Stage 2 Biology Practical Manual has been thoroughly revised to meet the needs of teachers and students as they prepare for the SACE Stage 2 requirements and moderation procedures.

SASTA and S.T.A.R. have collaborated once again to produce this special 20th anniversary edition

- Consists of 12 familiar ‘tried and true’ practical activities, written specifically for the SACE Stage 2 Biology Course
- All Assessment Design Criteria are addressed
- Intended Student Learnings are identified for each activity
- A comprehensive Assessment Table for each activity
- An Assessment Record Table will allow for a collation of marks to make reliable judgment against the Performance Standards
- As usual, a free set of Teaching Notes are provided to assist staff
- Preview sample pages now on the SASTA website

The 2014 edition will be on sale as usual in November.

(Limited copies of the 2013 edition of the workbook will also be available)

It is a student workbook rather than a photocopiable teacher resource therefore there is a minimum order of 5 copies. Order now from SASTA for the price of $18 incl. GST

Chemistry Investigations Manual

Assessment of Stage 2 Chemistry Using SACE Performance Standards

A new book for SA Chemistry Teachers.

The Chemistry Investigations Manual has been prepared to meet the needs of teachers and students in line with the new SACE requirements and moderation procedures. The manual contains

- 10 familiar practical activities covering analysis, organic preparation, reaction chemistry and experimental design
- 2 issues investigation activities
- All Assessment Design Criteria are addressed
- A comprehensive Assessment Table for each activity
- A Performance Standards Table matched to each activity
- Intended Student Learnings are identifiable within each activity
- A free set of Teaching Notes provided to assist staff
- Prepared by experienced chemistry teachers and moderators Lynton Hall, Ian McMahon and Clive Nikkerud
- It is a student workbook rather than a photocopiable teacher resource
- Preview sample pages on the SASTA website

Order now from SASTA at the price of $18 incl.GST.

N.B. Minimum order of 5 copies. On Sale Now for $18.00 incl.GST Purchase online at www.sasta.asn.au or fax a school purchase order to 8354 0008.
SASTA 2014 Study Guides

Biology  Chemistry  Geology  Nutrition  Physics  Psychology

Copies of some past editions of the SASTA Study Guides, including exam answers, are available for $15.00

SASTA study guides (approx. 200 pages) are the complete resource for students preparing for Year 12 SACE Board of SA exams.

These guides include questions with worked solutions covering each topic in the Subject Outline and address all sections of the exam.

Please fax school purchase order to 8354 0008 or order online at www.sasta.asn.au

Inquiries concerning resources can be answered by the SASTA office by telephoning 8354 0006 or email office@sasta.asn.au

Supporting Teachers of Science
Advancing Science Education
www.sasta.asn.au