

# February 2016 SASTA

Newsletter of the South Australian Science Teachers Association Inc.



## Conferences/Events

### Teachers New to SACE Stage 1 & 2 Workshops

- Stage 2 Biology – 22 February
- Stage 2 Chemistry – 22 February
- Stage 2 Physics – 26 February
- Stage 1 & 2 Psychology – 26 February
- Stage 1 & 2 Nutrition – 4 March

Term 1 Professional learning workshops and conferences are now published. Please see page 4 for details or visit [www.sasta.asn.au](http://www.sasta.asn.au)

### Oliphant Science Awards

Details concerning the 2016 Oliphant Science Awards Competition are now available. Please see page 12 for details or visit [www.oliphantscienceawards.com.au](http://www.oliphantscienceawards.com.au)

### Annual Conference & Expo

SASTA's next Annual Conference & Expo will be held on Monday 18 & Tuesday 19 April 2016 at Brighton Secondary School. Further details available page 8 or visit [www.sasta.asn.au](http://www.sasta.asn.au).



SASTA is on Facebook go to [www.sasta.asn.au](http://www.sasta.asn.au)



SASTA is on Twitter go to [www.sasta.asn.au](http://www.sasta.asn.au)

## Latest Events

For the latest events and Conference information go to SASTA's website: [www.sasta.asn.au](http://www.sasta.asn.au)

For information about science competitions go to: [www.oliphantscienceawards.com.au](http://www.oliphantscienceawards.com.au)

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South Australian Science Teachers Association Inc.

Patron: Dr Leanna Read ABN 22 938 317 192

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Member of Australian Science Teachers Association (ASTA)

Supporting teachers of science • Advancing science education





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## 2016 SASTA Committee

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### Patron of the South Australian Science Teachers Association

**Dr Leanna Read FTSE, FAICD, Chief Scientist for SA**

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## Newsletter copy deadlines 2016

**(Advertising deadlines one week earlier)**

Edition	Deadline
February	11 January
May	11 April
August	11 July
November	10 October

## Advertising

Advertising rates & booking form online at [www.sasta.asn.au](http://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 Vice-President

### Welcome back to a new year of teaching science.



The SASTA/MASA STEM middle school conference held at Nazareth College School on November 27 last term was a huge hit with over 200 registrants making it our most popular PD event since the CONASTA 63 conference in 2014. Well done to SASTA's convenor Jane Wright and to Greg Cole and the office secretariat, as well as all of the volunteers for organising such a successful event.

Like me, you may have noted two very interesting science stories in the media since school finished last year.

One was the announcement by IUPAC on New Year's eve, stating the confirmation of four new elements in the periodic table, 113, 115, 117 and 118, completing the seventh row. There have now been 13 added since I began teaching and it would be interesting for our students to compare the periodic tables we used at school to the current table.

The other news story which caught my attention over the break was that of the comments made in the town of Woodlands, North Carolina by local residents at a public hearing on the proposal to rezone a section of land in order to build a solar farm. One local stated that solar farms would suck up all the energy from the sun and a 'retired science teacher' unfortunately suggested that solar farms cause cancer and prevent photosynthesis in nearby vegetation. The comments of those two residents were, of course, immediately sensationalised by the media, especially as they coincided with the conclusion of the World Climate Change Conference in Paris. The original news article published on Dec 8<sup>th</sup> by Keith Hoggard in the Roanoke-Chowan News Herald (which the Mayor of Woodlands considers an accurate report of the meeting), would be an excellent discussion piece for any science class (or media studies class for that matter).

#### Mark Divito

SASTA Vice-President

## 2016 SASTA Awards

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 nomination forms.

Start thinking now. Alert your Principal.

There are a number of Awards for SASTA members:

### SASTA Medal

SASTA offers its members an award for excellent contribution to science education or teaching or both. The SASTA Medal is awarded to an individual who has made a significant contribution to SASTA and has been active in science education.

### Credit Union SA/SASTA Outstanding Teacher Award for junior primary, primary, middle years and senior years' teachers

The Outstanding Teacher Awards recognise teachers' contributions to the education of students in science.

### Helen Castle Memorial Scholarship

This Scholarship is in memory of Helen Castle, a dedicated and enthusiastic science teacher who tragically died during the Eyre Peninsula bush fires in 2005. The Scholarship is designed to assist country science teachers attend the SASTA Annual Conference and gain professional development to assist themselves and other country teachers to maintain a high standard of science teaching within country areas. Two (2) scholarships of \$500 will be awarded to enable country based science teachers to attend the SASTA Annual Conference.

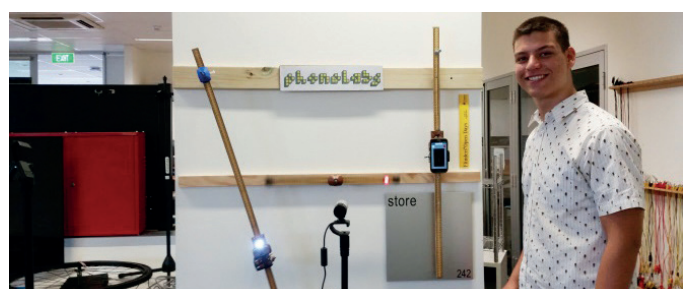
Nomination forms are available at [www.sasta.asn.au](http://www.sasta.asn.au).

Nominations close Tuesday March 1 2016 at 4:00pm.

## Physics with Phones

Most Phones are now loaded with sensors that can be put to good use in teaching Physics. Most of the Classical Mechanics experiments can now be carried out with Phones and 3D printed components.

PhoneLabs ([www.phonelabs.net](http://www.phonelabs.net)) was developed in ASMS and is now being taken forward as an open source non-profit initiative. We will be offering a workshop in the SASTA conference and we invite early adopters to register with us and book your starter-kit in advance <http://www.phonelabs.net/sasta/>



## Term 1 2016 Teacher Professional Learning Science

The workshops provided through SASTA will **provide practical strategies and resources to support teachers** in the development of teaching and learning programs that embed science Inquiry Skills and provide clear opportunities for reflection and recording of student achievement.

### For Primary Years Teachers:

#### Year 7 Science Series: Chemical Sciences

**Date: Monday 4 April, 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.
- **Resource Development** – opportunity to explore a range of quality resources.

#### Who should attend

**Year 6/7 teachers or specialist science teachers.**

### Assessing the Science Inquiry Skills – Student investigations

**Date: Friday 18 March, 9.00am–3.00pm**

At all levels of science teaching and learning, the Science Inquiry Skills detail **what students are expected to be able to do**; to pose questions, make decisions, design experiments, discuss, collaborate, communicate results and provide justified answers and explanations when engaged in the inquiry process.

This workshop will explore the specific teaching competences that are required to guide students and to create opportunities by which students can gather and interrogate evidence and information. **Teachers will engage in hands on learning while they explore a number of sample investigations.**

Using exemplars, we will explore different methods of recording and representing student achievement of the Science Inquiry Skills, including how the Achievement Standards can be used to make on-balance judgments about the quality of learning demonstrated by the students.

#### Who should attend

**Secondary/Middle school teachers.**

### For Secondary/Middle school teachers:

#### Investigating Chemical Sciences: Years 8-10

**Date: Friday 4 March, 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.**

#### Time

**All Workshops run from 9.00am–3.00pm**

#### Venue

**Education Development Centre, Hindmarsh**

#### Registration Fees

- **Personal Members \$120**
- **Corporate Members \$155**
- **Non-members \$180**

Program details and registration available online at – [http://www.sasta.asn.au/professional\\_learning](http://www.sasta.asn.au/professional_learning)

**Morning tea and lunch will be provided**

## Graduate Teacher Awards

Last year SASTA supported graduation ceremonies at UniSA, The University of Adelaide and Flinders University and provided awards & prizes for the most outstanding graduates.

The first ceremony was held at UniSA on 23 March where SASTA's Vice President, Mark Divito presented Outstanding Pre-Service Science Educator awards to Samantha Damiani (Primary & Middle) and Steve McKerlie (Bachelor of Education, Bachelor of Science). Anna Rollison (Primary) also received an award but could not be present on the night.

The second ceremony was held at The University of South Australia on 5 November where our Project Officer, Kate Dilger, presented awards to:

- Kelly Keeling (Biology: Curriculum & Methodology)
- Wayne Hobbs (Junior Science and Chemistry: Curriculum & Methodology).
- John Connell (Physics: Curriculum & Methodology)
- Sam Brice (Psychology: Curriculum & Methodology)

The final ceremony for the year was held at Flinders University where SASTA board member, Peter Turnbull, presented awards to:

- Emily Farquhar (Biology Curriculum Studies)
- Lewis Weeden (Earth Science Curriculum Studies)
- Megan Rackenbrant (Chemistry Curriculum Studies)
- Daniel Rabbett (Physics Curriculum Studies).



## ASTA / Australia Japan Foundation Science Teaching Tour of Japan

In September and October of last year, I was lucky enough to visit Japan as part of the ASTA / Australia Japan Foundation science teaching tour.

I was greatly impressed by the work ethic of the Japanese people, by the high level of respect that they exercise towards others and by their community mindedness. Many of the teachers that we saw seemed to have an exceptionally high level of skill and proficiency in their field. Not surprisingly, there seem to be differences and similarities between the teaching philosophies and practices exercised in Australia and Japan. During the trip, it was very clear that the educators of each country had much to offer to the other in terms of ideas for teaching and professional development.

A blog about the tour can be found at:  
<http://asta-japan.blogspot.com.au>

I want to inform newsletter readers that ASTA is developing an on-line platform through which students in Japan and Australia can share science ideas and experiences. The involvement of the students might be as low-key as posting a photo of a science investigation or project with one or two sentences of explanation. (Australian students may consider writing in Japanese while Japanese students might write in English, if possible). At a more advanced level, students from one country might pose questions or provide suggestions for science investigations for students in the other country. Japanese and Australian students might contribute information to each other's research, or they might even team up for investigations done 'internationally'. Ideas for the platform are still being developed.

If readers have any suggestions or questions, they are welcome to email me at [brian.schiller977@schools.sa.edu.au](mailto:brian.schiller977@schools.sa.edu.au) or contact Vic Dobos at ASTA.

**Brian Schiller**, Seacliff Primary School.

## Teachers New to SACE Stage 2 Biology

Monday 22 February 2016

*Provisional program - to be confirmed*

- 9:00 am **Registration**
- 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
- Practical Lessons**
- Types of Practical
  - Assessing practical work
  - Test questions relating to practicals
- 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 22 February 2016

*Provisional program - to be confirmed*

- 9:00 am **Registration**
- 9:15 am **General Introduction**
- Subject outline walk through**
- Investigation skills
  - Content
  - Assessment
  - Performance Standards
- 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**

**All workshops will be held at the Education Development Centre, Milner Street Hindmarsh.**

**Register online at [www.sasta.asn.au](http://www.sasta.asn.au)**

**Cost:** Personal Members/Student Members \$120  
Corporate Members \$155  
Non-Members \$180

## Teachers New to SACE Stage 2 Physics

Friday 26 February 2016

*Provisional program - to be confirmed*

9:00 am	<b>Registration and Welcome</b>	
9:15 am	<b>General Introduction to SACE Physics requirements</b>	
	<b>Subject outline walk through</b>	
	<ul style="list-style-type: none"> <li>• Investigation skills</li> <li>• Content</li> <li>• Assessment</li> <li>• Performance Standards</li> </ul>	
	<b>Assessment Operations</b>	
	<ul style="list-style-type: none"> <li>• Quality assurance cycle</li> <li>• Key dates</li> <li>• Assessment Groups</li> </ul>	
	<b>Assessment and SACE Board Policies</b>	
	<ul style="list-style-type: none"> <li>• Supervision and verification of students' work</li> <li>• Assessment deadlines and submission dates</li> <li>• Special Provisions</li> </ul>	
	<b>Getting help</b>	
10:45 am	<b>Morning Tea</b>	
11:00 am	<b>Programming</b>	
	<ul style="list-style-type: none"> <li>• What to include</li> <li>• When to do it                             <ul style="list-style-type: none"> <li>◦ How much time at the end for revision?</li> <li>◦ How much formative work before students do summative tasks?</li> <li>◦ What are the peak times of the year for assessment tasks?</li> <li>◦ How much time do you have to prepare/mark/ provide feedback?</li> </ul> </li> <li>• Table discussion (10 minutes)</li> </ul>	
	<b>Resources</b>	
	<ul style="list-style-type: none"> <li>• Textbooks</li> <li>• Notes</li> <li>• SASTA Study Guide</li> <li>• Simulations (eg PHET, Scootle)</li> <li>• Websites</li> <li>• Time to explore resources at lunch</li> </ul>	
	<b>Challenging concepts</b>	
	<ul style="list-style-type: none"> <li>• What misconceptions do students bring from earlier years?                             <ul style="list-style-type: none"> <li>◦ How can these be identified and addressed?</li> </ul> </li> <li>• What concepts do students find most challenging in the course?                             <ul style="list-style-type: none"> <li>◦ What is the evidence of this?</li> <li>◦ How can these concepts be taught?</li> </ul> </li> </ul>	
		<ul style="list-style-type: none"> <li>• Table discussion</li> </ul> <p>Suggest concepts to go through in the Questions section at the end of the day.</p>
		12:15 pm <b>Lunch</b>
		1:00 pm <b>SATs</b>
		<ul style="list-style-type: none"> <li>• Test / exam process skills (eg describe, explain, derive, calculate)                             <ul style="list-style-type: none"> <li>◦ What is required for each of these types of questions?</li> <li>◦ What do students find the most challenging?</li> </ul> </li> <li>• Extended responses                             <ul style="list-style-type: none"> <li>◦ Planning</li> <li>◦ Writing</li> </ul> </li> <li>• Appropriate &amp; inappropriate tasks</li> <li>• Marking tests / exams</li> <li>• Performance standards; how to use differences between the grade bands</li> </ul>
		1:45 pm <b>Folio</b>
		<ul style="list-style-type: none"> <li>• Practical Investigations                             <ul style="list-style-type: none"> <li>◦ Appropriate tasks</li> <li>◦ Inappropriate tasks</li> </ul> </li> <li>• Practical / Experimental skills                             <ul style="list-style-type: none"> <li>◦ Design</li> <li>◦ Manipulation</li> <li>◦ Recording / displaying data</li> <li>◦ Analysis</li> <li>◦ Evaluation</li> </ul> </li> <li>• Marking Practical Investigations</li> <li>• Issues Investigation                             <ul style="list-style-type: none"> <li>◦ Appropriate &amp; Inappropriate tasks</li> <li>◦ What is an issue?</li> <li>◦ Word count and how to adhere to it</li> <li>◦ Presentation formats</li> </ul> </li> <li>• Performance standards; how to use differences between the grade bands</li> </ul>
		2:45 pm <b>Moderation</b>
		<ul style="list-style-type: none"> <li>• What happens there</li> <li>• How to best prepare for moderation</li> </ul>
		3:00 pm <b>Questions</b>
		(Participants are requested bring a copy of the 2015 SACE Board of SA SACE Stage 2 Physics Exam and a Learning and assessment plan (LAP).
		3:30 pm <b>Close</b>

## Teachers New to **SACE Stage 1 & 2 Psychology**

**Friday 26 February 2016**

*Provisional program - to be confirmed*

- 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 pm **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
- Stage 1 Issues Investigation**
- 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 4 March 2016**

*Provisional program - to be confirmed*

- 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
  - 2014 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**



## SASTA Annual Conference & Expo

### Theme: Raising Standards of Teaching & Learning

18-19 April 2016, Brighton Secondary School

The South Australian Science Teachers Association (SASTA) is delighted to announce details of the forthcoming Annual Conference program. Over 200 R-12 teachers, laboratory officers and tertiary educators are expected to attend.

### Distinguished keynote and cutting edge presenters

The SASTA Annual Conference has a reputation for outstanding Keynote and Cutting Edge Presenters.

In 2016 we are proud to have confirmed as presenters:

- Giles Clark, International Conservation Manager and Tiger Supervisor, AustraliaZoo
- Dr Lisa Harvey-Smith, ASKAP Project Scientist | Research Astronomer
- Professor Martin Westwell, Director of the Flinders Centre for Science Education in the 21st Century
- Professor Craig Simmons, Director, National Centre for Groundwater Research and Training & 2015 South Australian Scientist of the Year
- Associate Professor Sandy Walker, Associate Professor in Product Design, Flinders University
- Dr Martin White, Lecturer, The University of Adelaide
- Associate Professor, John Hayball, University of South Australia
- Dr Nigel Farrow, Adelaide Cystic Fibrosis Gene Therapy Research Group, Women's and Children's Hospital
- Associate Professor Chris Sumby, The University of Adelaide
- Professor Andrew Abell, The University of Adelaide
- Dr Raymond Matthews, CQUniversity

### Excursions

Excursions will be held at Flinders at Tonsley and the Desalination plant on Monday 18 April 2:00 pm - 4:00 pm.

### High-quality professional learning program in outstanding facilities

The Annual Conference workshop program will be held in the new, state of the art Bright Learning Centre and Performing Arts Centre - Theatre and Concert Hall.

Approximately 50 workshops will be presented which will include primary, middle-school, secondary and lab tech topics and seminars.

### Social and networking events

Two much loved Annual Conference traditions are the Annual Conference Dinner held at the Morphettville Junction on Monday 18 April and the Happy Hours at the conclusion of each day's program.



**REGISTRATIONS NOW OPEN at**  
[www.sasta.asn.au](http://www.sasta.asn.au)



# Annual Conference Keynote Speaker

## Exploring the Universe with the Square Kilometre Array

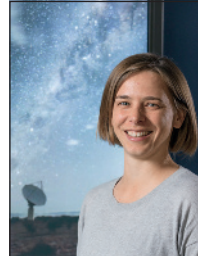
### Presenter: Dr Lisa Harvey-Smith

What is Dark Matter? How did the solar system form? Was Einstein right about the nature of gravity? Are we alone in the universe?

To tackle these fundamental questions, an international consortium of ten nations is currently designing the 'Square Kilometre Array' (SKA). Comprising thousands of radio receivers located in Africa and Australia, the SKA will be the world's most powerful radio telescope. It will revolutionise our understanding of the universe, from the first stars and galaxies formed after the Big Bang to the formation of planet Earth. In preparation for this mega-science project, the CSIRO has built the Australian SKA Pathfinder (ASKAP) telescope which is due to start early science operations next year.

In this talk, CSIRO astronomer Dr. Lisa Harvey-Smith will reveal early scientific results, explain the technology behind the telescope and describe many mysteries it will tackle.

### Biography



Dr. Lisa Harvey-Smith is an award-winning astronomer at the CSIRO and the Project Scientist for the Australian Square Kilometre Array Pathfinder (ASKAP) telescope. She uses radio telescopes to study the birth and death of stars in the Milky Way and to measure interactions between colliding galaxies. Lisa leads the Science Operations Support team at the Australia Telescope National Facility and is a member of national and international science advisory committees. She maintains educational partnerships with Leichhardt Public school in Sydney and at the Pia Wadjari remote community school in WA. Last year she introduced science superstars Buzz Aldrin and Neil DeGrasse Tyson at sold-out shows at the Sydney State Theatre, Melbourne Town Hall and the Hordern Pavilion.

## 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

If you would like to organise a Money Smart workshop for your school, please send suitable dates & times to  
Kate Dilger - [projectofficer@sasta.asn.au](mailto:projectofficer@sasta.asn.au)  
or telephone 08 8354 0006



## Oliphant Science Awards

### BHP Billiton Awards

**Congratulations to Sam Moyle from Brighton Secondary School who is South Australia's teacher finalist in the BHP Billiton Teacher Awards.**



Winning entries from 2015 Scientific Inquiry and Models & Inventions categories were forwarded to the BHP Billiton Science & Engineering Awards national competition. Anyone planning a scientific inquiry, model or invention entry should 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](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 drones, droids and robots theme could be used in Computer Programming & Robotics, Scientific Inquiry, Games, Models & Inventions or Multimedia, and there are topics with this focus in Science Writing, Posters and Photography.

#### Get involved!

**Find the Oliphant Science Award information at:**  
[www.oliphantscienceawards.com.au](http://www.oliphantscienceawards.com.au)



## Oliphant Science Awards

*South Australia's largest student science competition*

### Great opportunities for learning through science

#### 2016 OLIPHANT KEY DATES

**Thursday 23 June** – Registration Forms due.

**Friday 24 June** – Judges Registration Form due.

**Monday 25 to Friday 29 July** –  
Deliver Science Writing, Scientific Inquiry, Games and  
Multimedia entries.

**Saturday 13 August** – Computer Programming and  
Robotics judging appointments at SASTA office

**Friday 26 August** – Crystal Investigations, Models &  
Inventions, Photography and Poster entries to event  
venue.

**Saturday 27 August** – Crystal Investigations, Models  
& Inventions, Photography and Poster Judging Day.

**Sunday 28 August** – Open Day 12 noon – 4:00 pm

**Monday 29 August** – Entries to be collected

**Friday 23 September** – Presentation Ceremony.

**Dates to be confirmed,  
Check Oliphant Science Awards Website  
([www.oliphantscienceawards.com.au](http://www.oliphantscienceawards.com.au))**



#### 2016 CATEGORY TITLES

##### Photography

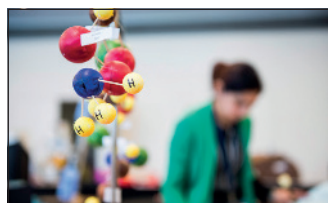
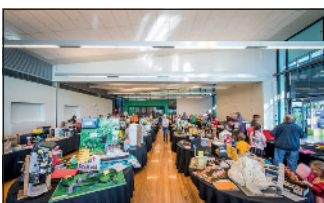
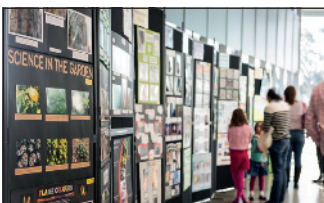
- Microhabitats
- What colour tells us
- Reflections and refractions
- Form and function
- Up in the Air!
- Succession in Action

##### Posters

- Numbers in science
- Using radiation to improve health
- What happens with recycled plastics
- Drones in Action
- Invertebrate Superheroes
- Designs to survive natural disasters

##### Science Writing

- Vaccines – good or bad?
- It came from outer space
- Chemistry of Sugars
- Bio engineering
- Can we live without coal?
- Plants we need for a sustainable future



## Notice of Annual General Meeting

Notice is given that the 2016 Annual General Meeting of members of The South Australian Science Teachers Association Incorporated will be held at Brighton Secondary School, BPAC Concert Hall, 305 Brighton Road, North Brighton on Tuesday 19 April, commencing at 8:50 am for the purpose of transacting the items of business below.

### Agenda

1. Welcome and Apologies
2. Minutes of the 2015 AGM
  - a. Acceptance
  - b. Business Arising
3. President's Report
4. Treasurer's Report
5. Executive Officer's Report
6. Election of Board Members
7. General Business
  - a. Membership Fees
  - b. Appointment of Auditor
8. Any Other Business

## Call for nominations – 2016

South Australian Science Teachers Association

ABN 22 938 317 192

**Closing date: 5:00 pm 22 March 2015**

### 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.

### 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](http://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.

## SASTA In-School Workshops now available!

SASTAs offer a range of Professional Learning workshops which explore science concepts in detail and provide you with hands on and interactive ideas that you can use in your classroom straight away.

Our workshops cover all Science Understanding areas and incorporate Science Inquiry Skills and Science as a Human Endeavour concepts.

Examples of 2 hour workshops are listed below:

### Australian Curriculum Focus

- Science Overview - all Year Level groups

### Science Inquiry Skills Focus

- Science for the Early Years (R-2)
- Open Investigations

### Planning and Assessment Focus

- Integrating Science and Numeracy (Primary)
- Planning for Inquiry – (Secondary)

### Science Understanding Focus

- Biological Sciences
- Chemical Sciences
- Physical Sciences
- Earth and Space Sciences

### Science Pedagogy and Resources Focus

- Working with Primary Connections
- The 5Es
- Setting up Primary Connections Resources
- Investigating in Primary Connections

## Book your session today!

For enquiries and bookings, please contact SASTA office on (08) 8354 0006 or email SASTA Project Officer; Kate Dilger at [projectofficer@sasta.asn.au](mailto:projectofficer@sasta.asn.au)

## Chemistry Investigations Manual

### Assessment Of Stage 2 Chemistry Using Sace Performance Standards

A new book for SA Chemistry Teachers.

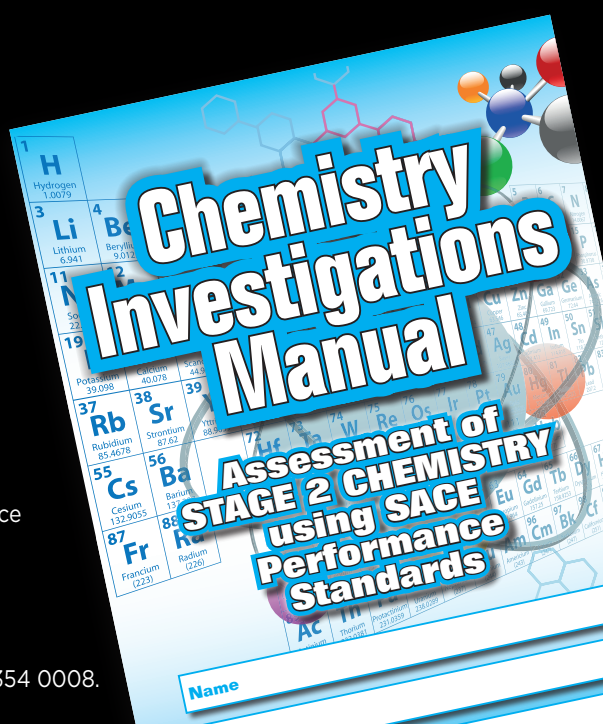
The Chemistry Investigations Manual has been prepared to meet the needs of teachers and students in line with the new SACE requirements and moderation procedures. The manual contains

- 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](http://www.sasta.asn.au) or fax a school purchase order to 8354 0008.



# The SASTA Biology Practical e-manual

All of the contents for the popular Biology Practical Manual now available as .docx and .pdf files on CD.



**DIGITAL**

## KEY FEATURES

- The Print edition of the 2016 Manual will still be available as usual
- Contains 4 practicals for each of the 4 major Topics (Macromolecules, Cells, Organisms and Ecosystems); 2 Practical for each Topic are 'Completion' type and 2 are 'Design' type
- Detailed 'Teaching Notes' containing vital information for Teachers and Laboratory technicians
- Useful Checklists for the skills required for the particular Practicals
- Assessment tables which will enable allocation of the Performance Standards
- An annotated exemplar Practical report
- A sample exam-type Practical Question with a suggested answer

## The e-manual consists of

- A full-colour presentation folder
- A CD with the .docx and .pdf files in a soft adhesive case
- A paper copy of the Manual for Teacher Reference
- An annual School Licence Certificate

## Pricing

(based on Year 8-12 enrolments in 2016)

- For small schools (<500) \$110pa (incl. GST)
- For medium schools (500-1000) \$330pa (incl. GST)
- For large schools (>1000) \$550pa (incl. GST)
- For individual sales or classes less than 5 please contact the publisher directly [dgreig@bigpond.net.au](mailto:dgreig@bigpond.net.au) before the end of February 2016.

Visit the SASTA website for sample .docx/.pdf files – freely available to download and trial in your school.

# SASTA 2016 Study Guides

Study Guide Range Available Term 1

**ORDER  
TERM 1**

**\$27**

EACH INC. GST

Biology  
Chemistry  
Geology  
Nutrition  
Physics  
Psychology

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](http://www.sasta.asn.au)

Inquiries concerning resources can be answered by the SASTA office by telephoning 8354 0006 or email [office@sasta.asn.au](mailto:office@sasta.asn.au)



Supporting Teachers of Science  
Advancing Science Education

[www.sasta.asn.au](http://www.sasta.asn.au)