

# November 2018 **SASTA**

Newsletter of the South Australian Science Teachers Association Inc.



## 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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## Conferences / Events

### STEM 6-11 Conference

Friday 30 November 2018, Brighton Secondary School.  
See page 7 for details.

### Psychology Summer Conference

Friday 18 January 2019, Education Development Centre.  
See page 8 for details.

### Teachers New to teaching Stage 2 Science:

- Biology & Physics - Friday 15 February 2019
- Psychology - Friday 22 February 2019
- Chemistry - Friday 1 March 2019
- Nutrition - Monday 4 March 2019
- Scientific Studies - February 2019 (date to be confirmed)

### Putting the 'E' in STEM

- Primary - Monday 25 February 2019
- Secondary - Friday 15 March 2019

### Lab Induction Workshop

Monday 18 February 2019, Cabra Dominican College.

See page 5-6 for details.

### Annual Conference - Call for Workshop Presenters

The next Annual Conference & Expo will be held on **Monday 15 & Tuesday 16 April 2019**. See page 9 for more details.

## Resources

Stage 1 & 2 Workbooks are now available to purchase online and Study Guides can be pre-ordered for 2019. See pages 11-12 for more details on 2019 resources or visit [www.sasta.asn.au/resources](http://www.sasta.asn.au/resources) to order online.



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South Australian Science Teachers Association Inc.

Patron: Dr Leanna Read ABN 22 938 317 192

Registered by Australia Post - Print Post Publication No. PP 100004158

Member of the Australian Science Teachers Association (ASTA)

Supporting Teachers of Science | Advancing Science Education





## 2018 SASTA Committee

### Patron of the South Australian Science Teachers Association

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

#### SASTA Board

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**Treasurer:** Mark Divito  
Anthony Armstrong  
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**Oliphant Science Awards**  
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Peter Schodde OAM  
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Ray Smith  
Alby Whitelaw  
Dr Jane Wright

#### SASTA Office

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## Newsletter copy deadlines 2019

(Advertising deadlines one week earlier)

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

## Advertising

Advertising rates & booking form available online at [www.sasta.asn.au](http://www.sasta.asn.au)

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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 alternatives 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



### **Greg Cole: Farewell and thank you for all your years of service to SASTA**

It is with great sadness and regret that the Science Teachers Association of South Australia has come to a time to farewell our Executive officer, Greg Cole.

Greg Cole contributed significantly over the last eleven years to SASTA's growth and development in its capacity to support science teachers and science teaching in South Australia. The respect and admiration he earned from us all during this time grew exponentially, and I feel that I can say this unreservedly. I would like to take this opportunity to formally thank Greg for his dedication and commitment to the wellbeing and progress of SASTA for many years in changing and challenging times.

Greg was always the quintessential quiet achiever.

In my recollection, for the first of those eleven years Greg was literally the backroom operator in a small, partitioned section far down at the back of the ACHPER office on Port Road, surrounded by boxes and papers whenever I visited him on some SASTA purpose or other. He was always polite and quietly friendly, which made the Association a pleasure to deal with. Turn forward to today, and SASTA now operates from its own premises, an achievement due in no small part to Greg's astute business acumen.

I found Greg to be very reserved about giving his opinion until he had watched various situations and scenarios; noticed important things about them; identified the significant aspects about those scenarios; reflected on several 'What if....?' versions of these situations; sought any advice he thought pertinent to the issues involved; and reflected on his findings. Only then would he venture to profess his opinion about these matters. Greg's thoughtful astuteness and his profound level

of professional experience gained while operating in numerous other business capacities prior to his employment with SASTA made the Association the beneficiary of his awareness, fiduciary insight and strategic planning. I only recently became aware that in a former life Greg was the Assistant Manager and then the Manager of Hoyts in South Australia. Greg has never been one to blow his own trumpet. However, I cannot help but think he could have and perhaps should have.

Greg responded to multitudes of telephone and email requests and to office visitors seeking assistance, with his characteristically calm and unruffled helpfulness. He also developed the habit of planning ahead, and reminding those around him of their own imminent deadlines, so that the smooth operation of SASTA continued to flow uninterrupted. Greg's extraordinary capacity to oversee the complexity of operations of the entire association - including the office; science teachers and education professionals; committees and working groups, required an understanding and grasp of its prodigious complexity beyond the grasp of most mere mortals. He will be very sadly missed indeed.

On behalf of SASTA we wish Greg joy, fulfillment and good health in his retirement.

For SASTA, the only silver lining coming arising from Greg's retirement from the role of Executive Officer of SASTA is that the mantle has been passed to a very worthy successor in Kate Dilger. Kate is already familiar with the operations of the Science Teachers Association, and has earned our respect and regard for her warmth and highly developed capacity to engage, enthuse and sustain the interest of those around her in science in all its wonderful facets. I am sure the association's management will continue to be in very capable hands well into the future.

With the emerging need to balance the requirements for space safety with space security, and space traffic management system issues constituting an emerging problem, may I encourage everyone to watch that Space!

**Vanessa Fay**

## From the Executive Officer



It is a pleasure to be able to introduce myself as the new Executive Officer at SASTA. I look forward to contributing to SASTA's role in supporting teachers of science. As an educator, I believe that I can bring an understanding of the strategic direction of science education, as well as continue to provide high quality professional learning and resources for our members. I will continue to work to respond to the needs of the science education community and look forward to any opportunity to meet with you throughout the coming year.

**Kate Dilger**

## World Teachers Day

World Teachers Day acknowledges the efforts of teachers in an increasingly complex, multicultural and technological society. It is a day on which students, parents and community members can demonstrate their appreciation for the contributions that teachers have made to their community.

Educators SA held the World Teachers Day awards ceremony on Friday 26 October 2018 at the Adelaide Convention Centre to celebrate the contribution made by South Australians to the education profession.

Congratulations to **SASTA Executive Officer, Kate Dilger**, who received the **Teachers Registration Board Induction & Mentoring Early Careers Award**. The Teachers Registration Board seeks to highlight the importance of educators working with early career teachers as this has a significant effect on the longevity and effectiveness of a teacher over their working life. This award recognises an individual who has used, developed or implemented professional learning to mentor and/or support early career teachers in their career development.



Kate Dilger, SASTA Executive Officer



Dr Kathy Paige

**Dr Kathy Paige**, a long time member of SASTA, was a finalist in the **Teacher Supporting Teachers Awards**. This award recognises the work of experienced, outstanding teachers who have made a long-term commitment to support their fellow educators in a variety of ways. These educators further the work of their association in state and national roles, as well as being an advocate for the teaching profession. Kathy was also presented with the SASTA Medal which was originally awarded at the Annual Conference in April. Congratulations Kathy!



**Tom Barclay**, who joined as a SASTA member in 2017, received the **University Award** for the University of Adelaide. **Rachel Kielow**, joined as a SASTA member this year, and received the **University Award** for Flinders University. This award recognises top graduates and their contribution to the teaching profession. Congratulations Tom and Rachel!

*(Tom pictured on the left above, Rachel pictured on the right above)*



Congratulations to **Janine King**, another long time member of SASTA and currently a member of the Professional Development Reference Group, who was awarded the **Lab**

**Managers Association of South Australia Industrious Association Service Award**.



Tom Barclay



Kate Dilger and Dr Kathy Paige

## Term 1 Professional Learning for 2019

### Teachers new to Stage 2 Science

**Time:** 9.00am - 3.30pm

**Venue:** Education Development Centre, Hindmarsh

#### Biology

**Date:** 15 February 2019

**Presenters:** Brian LeCornu and Tony Diercks

#### Physics

**Date:** 15 February 2019

**Presenter:** Michael Smith (Concordia College)

#### Psychology

**Date:** 22 February 2019

**Presenters:** Carolyn Pinchbeck (Xavier College) and Irena Atherton (Pulteney Grammar School)

#### Chemistry

**Date:** 1 March 2019

**Presenter:** Glen Arthur (University Senior College)

#### Nutrition

**Date:** 4 March 2019

**Presenters:** Lisa Cibich (Gleeson College) and Angela Leopold (Kangaroo Inn Area School)

#### Scientific Studies

**Date:** February 2019 (date to be confirmed)

**Presenter:** Glen Arthur (University Senior College)

In each of these workshops, an overview of the course will be provided, and guidance offered for planning, assessment and task design. Participants will be given the opportunity to share and discuss ideas, tasks and other resources for teaching the new course.

Some of the key topics covered include; an overview of the course, planning and assessment, sample tasks and discussion and moderation.

**For full details for each of these workshops and to register please visit the SASTA website.**

### For Secondary / Middle school teachers:

#### Laboratory Induction Workshop

**Date:** Monday 18 February 2019

**Time:** 9.30am - 3.00pm

**Venue:** Cabra Dominican College

**Presenters:** Dr Catherine O'Halloran and Kate Dilger

This workshop is designed to address the needs of teachers who are new to teaching in a science laboratory. Instruction will include; safety guidelines, including how to complete a risk assessment, equipment use and behaviour management. Teachers will be guided through typical laboratory lesson scenarios and have the opportunity to plan and complete a practical investigation.

The workshop will be held in a school laboratory setting.

**Intended Audience:** Secondary / Middle school teachers

#### Putting the 'E' in STEM (Secondary)

**Date:** Friday 15 March 2019

**Time:** 9.00am - 3.00pm

**Venue:** Education Development Centre

**Presenter:** Kate Dilger

#### Why is the E so important?

Engineering offers a tangible link between the STM components and their applications. Implementing engineering practices as part of a teaching and learning program offers teachers the opportunity to explore new exciting and engaging activities and students a new way to solve problems.

This workshop will focus on what this might look like in a classroom. Teachers will explore the engineering design process through prepared exemplar challenges. The tasks and resources aim to give teachers the experience and support they need to plan and deliver STEM focussed lessons that highlight the design thinking required in engineering.

**Intended Audience:** Teachers of Years 7-10 science

### Registration Fees

• Personal Member	\$145
• SASTA Student Member	\$145
• Corporate Member (SA School)	\$185
• Non Member	\$225

*Morning tea and lunch will be provided.*

*Program details and registration available online at: <http://bit.ly/SASTAPL>*

## For Primary Years teachers:

### Putting the 'E' in STEM (Primary)

**Date:** Monday 25 February 2019

**Time:** 9.00am - 3.00pm

**Venue:** Education Development Centre

**Presenter:** Kate Dilger

#### Why is the E so important?

Engineering offers a tangible link between the STM components and their applications. Implementing engineering practices as part of a teaching and learning program offers teachers the opportunity to explore new exciting and engaging activities and students a new way to solve problems.

This workshop will focus on what this might look like in a classroom. Teachers will explore the engineering design process through prepared exemplar challenges. The tasks and resources aim to give teachers the experience and support they need to plan and deliver STEM focussed lessons that highlight the design thinking required in engineering.

**Intended Audience:** Teachers of primary years, up to year 6

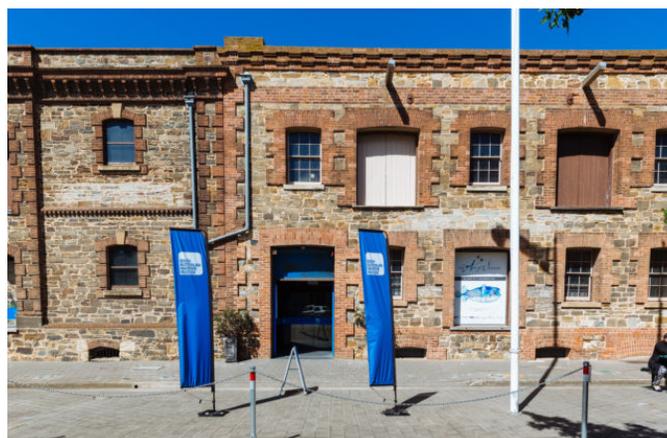
## Maritime Museum Excursion - FREE

**Date:** Saturday 2 March 2019

**Venue:** Maritime Museum, 126 Lipson St, Port Adelaide

This free two hour teacher excursion aims to introduce you to the Maritime Museum and the programs they have available. The session will include an explanation of the museum, exhibits and educational programs with time to explore the museum and climb the lighthouse.

**Please note:** this session is limited to 30 participants and is open to SASTA members only.



## 2019 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 Contribution to the Teaching of Science Awards

The Outstanding Contribution to the Teaching of Science 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 in country areas. Two (2) scholarships of \$500 will be awarded to enable country based science teachers to attend the SASTA Annual Conference on Monday 15 & Tuesday 16 April 2019.

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

Nominations close Friday 1 March 2019 at 4.00 pm

## STEM 6-11 Conference

Friday 30 November 2018

Brighton Secondary School

The South Australian Science Teachers Association in conjunction with the Mathematical Association of SA have organised a STEM conference for teachers of years 6-11. This one-day conference will provide high quality professional learning opportunities for teachers and educators, in the fields of science, mathematics, ICT and design and technology.

### Workshop focus on STEM Education

The conference is designed to bring together teachers, educators and exhibitors who are interested in sharing and exploring tools, resources and related activities that will ensure successful implementation of STEM education into our schools and communities.



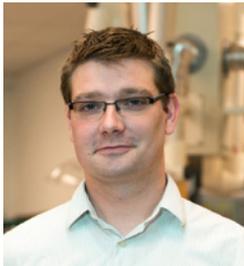
### Networking Opportunities

The conference will also provide an excellent opportunity for educators and teachers to exchange ideas about STEM teaching and learning and to maintain and develop valuable networks.

### Register Now!

The program and registration is available online at [www.sasta.asn.au](http://www.sasta.asn.au)

## Keynote Presentations



### Laying Waste to Pollution

Dr Justin M. Chalker, Flinders University

This presentation will feature the research of Dr Justin Chalker and his team at Flinders University and their efforts to convert waste into new materials that capture pollution. They have developed an inexpensive polymer made from waste cooking oil and sulfur that can trap mercury pollution and oil spills. This research has led to collaborations across six continents. Case studies in field trials, including those in Australia, will be discussed. This research was supported by undergraduate students and even led to several collaborations

and inquiry-driven science projects at high schools across the world. Both the research and science outreach and engagement with high school teachers and students will be presented.



### Te Kura Kōhatu – IODP School of Rock 2018

Fiona Rabone, Murray Bridge High School

Attending the International Ocean Discovery Program (IODP) School of Rock professional development workshop with 20 educators from around the globe was an amazing and inspiring experience. The specific focus for 2018 was Pacific Rim geology and the science on research vessel the JOIDES Resolution. Field trips and lab-based activities allowed us to explore the geological history of the Auckland region including volcanism and a wide range of sedimentary environments. Over 150 formal and informal science educators have participated in the School of Rock since 2005. What is it all about?

Do you know about ANZIC or the International Ocean Discovery Program (IODP)? For that matter, do students in my classes even need to be aware that an international, multidisciplinary, scientific ocean drilling collaboration exists? After all, 'Exploring the Earth under the Sea' does not directly affect individuals, or does it?

I will share experiences, insights, ideas and potential opportunities gained from participating in the School of Rock 2018 that can bring the curriculum alive in my – and your - classrooms for students. At the very least, the IODP provides an interesting real-life context that can enable students to strengthen their understanding of how science really works. Excitingly, and best of all, they may inspire students to pursue careers in science, technology, engineering and math.

# SASTA Psychology Summer Conference

## Adolescent Mental Health and Wellbeing in the Digital Age

Friday 18 January 2019

Education Development Centre

Program		
8.45am	<b>Conference Opening</b> Housekeeping and welcome	
9.00am	<b>Keynote Speaker:</b> Adolescent Mental Health and Wellbeing in the Digital Age <i>The presentation will focus on helping professionals to understand current issues related to adolescent mental health, and to be aware of practical strategies to use to support young people dealing with anxiety, trauma, and difficult life events</i>	Kirrilie Smout, Developing Minds
10.00am	<b>Morning Tea - Credit Union SA</b>	A word from our sponsors
10.15am	<b>SACE Examination and Moderation Review</b>	
12.00pm	<b>Concurrent Workshops 1</b> 1.1 Incorporating Practical classroom activities into Stage 1 & 2 Psychology Topics 1.2 The Good, The Bad, and the Ugly of Stage 2 Psych 1.3 Help - Where do I start?!	Adriana Gatt  Zac Ingles & Kerry Hodkinson Jane Hoffman
1.00pm	<b>Lunch</b>	
1.30pm	<b>Concurrent Workshops 2</b> 2.1 Get confident in Qualitative Research Program Reports 2.2 The Good, The Bad, and the Ugly of Stage 2 Psych 2.3 Mindwaves	Margaret-Ann Copeland Zac Ingles & Kerry Hodkinson Deryck Pinchbeck
2.30pm	<b>Concurrent Workshops 3</b> 3.1 Incorporating Practical classroom activities into Stage 1 & 2 Psychology Topics 3.2 Get confident in Qualitative Research Program Reports 3.3 Mindwaves	Adriana Gatt  Margaret-Ann Copeland Deryck Pinchbeck
3.30pm	<b>Conference Plenary</b>	



**Kirrilie Smout** is a clinical Psychologist who has worked as a child and adolescent specialist for the last 23 years in private, government and community settings. She has provided therapy to approximately 5000 children, teens and families, supervised over 50 child and adolescent psychologists, and presented seminars to more than 50,000 students, parents and teachers in schools around Australia. She is the director of Developing Minds, a specialist child and adolescent psychology clinic in Adelaide which provides therapy to more than 250 families each week. Kirrilie has won national awards for her speaking work and research, authored three books about young people and provides consultation about youth mental health issues to national media, education and health organisations.

## Call for Workshop Presenters

### SASTA Annual Conference & Expo

Monday 15 and Tuesday 16 April 2019

**SHARE** your good ideas ... submit a workshop proposal for the conference!

Presenting workshops for your colleagues is an excellent way to share best practice and develop a community of educators across the State.

**TAKE PART** in a broad program of professional learning workshops for primary and secondary teachers, including laboratory and computer workshops, hands-on activities, seminars and discussions.

**GAIN** valuable experience in leading learning that will enrich your own professional standards.

#### Conference Themes

The Conference will address a range of the content and pedagogies of the Australian Curriculum: Science. Session attendees should be actively involved in the learning through a practical and investigative approach. Sessions that link to real world examples of contemporary science in STEM are encouraged.

#### Possible Workshop Ideas:

- Hands-on activities for primary, middle and senior school science teachers & laboratory officers;
- Use of technologies in teaching and learning;
- Integrated units of work of Science and Literacy etc;
- Ways of motivating students to consider science in their future careers;
- Improving students' confidence and experiences in Science.

**Submit a proposal for the SASTA Annual Conference at [www.sasta.asn.au](http://www.sasta.asn.au) by Friday 1 February 2019.**

## Living Science: Biology

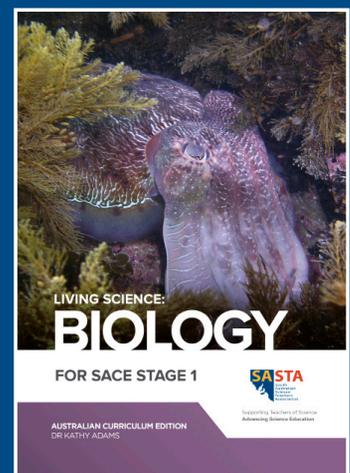
### NEW | Stage 1 Biology Textbook written by Dr Kathy Adams, \$49 each

This textbook was **written to complement the current Stage 1 Biology SACE Board of South Australia subject content** for South Australian students. It is designed to be useful for both teachers and students. Teachers will find it an invaluable resource for planning and developing student knowledge as it has comprehensive coverage of the science understandings of the Stage 1 course. Students will have a resource to complement their lessons and with its **additional features, such as the "Did you know?" and "SHE Alert" boxes**, to develop a broader knowledge of Biology.

The "Did you know?" boxes are connected stories, concepts, perspectives or interesting biological processes or facts to help you engage students in deeper learning. The "SHE Alert" boxes can be found throughout the book and are connected to the 4 SHE Key concepts. These boxes are there to guide students and teachers to consider how science and society interact to overcome problems, find new alternatives and improve human lives. To explore the world of Biology through Science as a Human Endeavour.

At the end of each chapter, a list of possible Deconstruct and Design ideas are included which could be used by the teacher to develop tasks. There are also review questions through the book and a set of SHE short answer questions for students.

**Pre-order your copy now! Available November 2018.**



## 2018 SASTA Oliphant Science Awards

**Congratulations to all students who completed entries and to the major prize winners!**



Ms Monica Oliphant presented the prestigious **Oliphant Trophy** to Sabrina Lin from Glenunga International High School for her Scientific Inquiry entry “Effect of Citrus lemon juice on the senescence of Liliium ‘Casa Blanca’” at the presentation ceremony held on Friday 21 September at Brighton Secondary School.

The 2018 Oliphant Science Awards featured 2,169 entries across 9 categories and 6 age groups. 2,987 students from 106 schools took part in this year’s competition.

A full list of the major winners announced at the Presentation Ceremony can be found on the Oliphant Science Awards website:

[www.oliphantscienceawards.com.au](http://www.oliphantscienceawards.com.au)

**A special thank you to all our Sponsors, Committee Members, Presenters and Volunteers who contributed to this year’s event!**

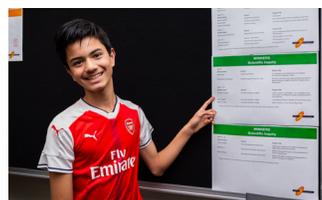
### To Find Out More or Get Involved:

Visit [www.oliphantscienceawards.com.au](http://www.oliphantscienceawards.com.au) to download the complete 2018 Presentation Ceremony booklet with all the winners from this year’s competition! You can also watch our Oliphant Science Awards Video, view past event photos, register as a judge or volunteer, or simply find out more about the competition online!

### Open Day

A very successful Open Day was held on Sunday 26 August at Festival Functions, Findon, at which the winning 2018 entries were displayed together with all of the Models and Inventions entries.

Over 1400 visitors attended the event which included Science Shows from Mobile Science Education, Robogals Adelaide, Warrawong Wildlife Sanctuary, Engineers without Borders, The Young Scientists of SA and Nature Education Centre. There were also come and try activities from Southern Brick Lego User Group, South Australian Museum and SASTA.



# Year 8 & 9 Practical Investigation Workbooks

**The SASTA Practical Investigations Resources are student workbooks written to support the Australian Curriculum: Science for Year 8 and 9**

These workbooks contain new, up-to-date, engaging and **innovative science practicals** in an easy to use design. These **write-in workbooks** guide students through each investigation, encouraging them to practice and enhance their inquiry skills, design procedures and answer questions about their learning. Each practical investigation comes complete with an **assessment rubric** to allow teacher feedback on student learning.

*These items have a minimum order of 20 copies per title as it is a student write-in workbook and not a blackline master.*

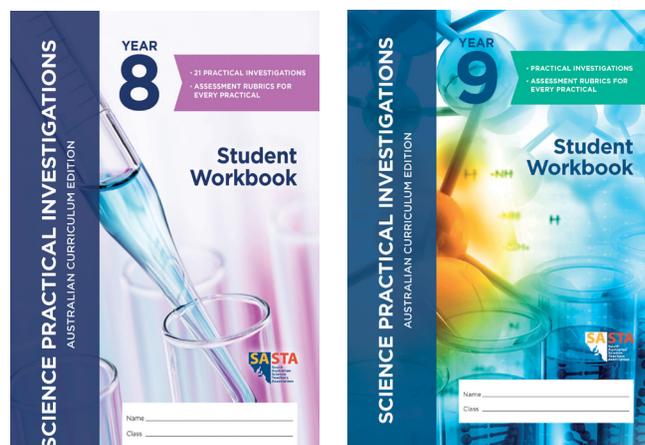
Features:

- Science Investigations that comprehensively explore the content of Biological sciences, Chemical sciences, Earth and Space sciences and Physical sciences for the Year 8 or 9 Australian Curriculum.
- Explanations of how to work scientifically, including; manipulating variables, graphing and measurement.
- An emphasis on Science Inquiry Skills.
- Australian Science Curriculum overview that highlights the context explored in each of the three standards; Science Understanding, Science as a human endeavour and Science Inquiry skills.
- Assessment rubrics for each practical giving an A - E scale for assessing the Science Inquiry skills.
- The Year 9 Workbook reflects the current emphasis on STEM skills through the inclusion of 4 engineering design challenges.

**Cost: \$18.50 (including GST) per book**

**Minimum order of 20 copies**

**Sample pages are available at [www.sasta.asn.au](http://www.sasta.asn.au)**

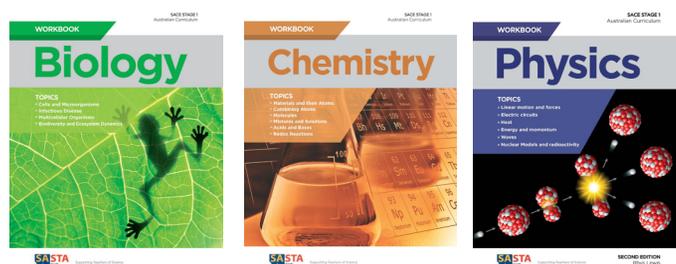


## SASTA SACE Stage 1 Workbooks

**SACE Stage 1 Biology, Chemistry and Physics workbooks adapted for the Australian Curriculum**

SASTA's workbooks have been written to align with the SACE Stage 1 curriculum. They contain all new original questions for students. The SASTA resource covers all topics outlined in the SACE curriculum in an easy to read format and will be printed in colour and rich with illustrations and diagrams to enhance learning. **Sample chapters are available at [www.sasta.asn.au](http://www.sasta.asn.au)**

- Over 300 full colour illustrations & diagrams;
- Over 100 original questions in each book;
- Over 250 problems with worked solutions;
- Questions range from simple to challenging;
- All questions are mapped to the new performance standards; and
- Topic test for each chapter.



**Chemistry, Biology - First Edition, \$49 each**

**Physics - Second Edition, \$54 each**

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

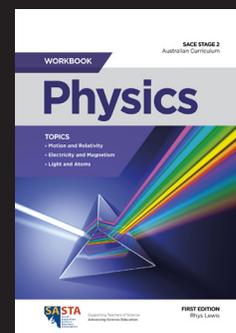
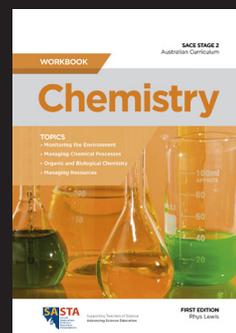
# Stage 2 Science Workbooks

## SACE Stage 2 Biology, Chemistry and Physics workbooks adapted for the Australian Curriculum, \$59 each

SASTA's workbooks are written for the new SACE Stage 2 Curriculum. They are a student text and workbook that covers all content of topics outlined in the new curriculum in an easy to read format and will be printed in full colour. **Sample pages are available at [www.sasta.asn.au](http://www.sasta.asn.au)**

Each workbook contains:

- A complete explanation of all theory outlined in the subject outlines;
- All questions are mapped to the new performance standards for Stage 2;
- Over 300 full colour diagrams;
- Over 700 contextual questions with fully worked solutions;
- Questions range from simple to challenging and are designed to prepare students for assessment tasks; and
- Review test for each chapter.



For more details and to order visit [www.sasta.asn.au](http://www.sasta.asn.au)

## 2019 SASTA Study Guides

All SASTA Study Guides are \$29 each, available early in Term 2, 2019

Biology

Chemistry

Nutrition

Physics

Psychology

The Biology, Chemistry and Physics study guides have been aligned to the new SACE Stage 2 Curriculum.

SASTA Study Guides 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 email school purchase orders to [office@sasta.asn.au](mailto:office@sasta.asn.au) or order online at [www.sasta.asn.au](http://www.sasta.asn.au)

