

February 2019 **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

For information about science competitions go to:
www.oliphantscienceawards.com.au

Contents

Page	
2	SASTA Contacts
3	President's Report
4	SASTA Annual Conference & Expo
5	2019 SASTA Awards
5	Term 1 Professional Learning
6	SACE Stage 1 & 2 Workshops
8	National Science Week
9	Notice of Annual General Meeting
9	Call for Nominations - 2019
10	Oliphant Science Awards

Conferences / Events

SACE Stage 2 Workshops

- Introductory Stage 2 Physics
- Teachers New to SACE Stage 2 Biology
- Teachers New to SACE Stage 1 & 2 Psychology
- Introducing Stage 2 Chemistry
- Introducing Stage 1 & 2 Nutrition

See page 6 for more details.

Putting the 'E' in STEM

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

See page 5 for more details.

Maritime Museum Excursion - FREE for members

- **Saturday 2 March 2019**

See page 7 for more details or visit www.sasta.asn.au.

Oliphant Science Awards

Details about the 2019 Oliphant Science Awards are now available. Please see page 10 for details or visit the website:
www.oliphantscienceawards.com.au.

Annual Conference & Expo

The next Annual Conference & Expo will be held on Monday 15 & Tuesday 16 April 2019 at Pulteney Grammar School. Further details are available on page 4 or visit www.sasta.asn.au.



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South Australian Science Teachers Association Inc.

Patron: Professor Caroline McMillen

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





2019 SASTA Committee

Patron of the South Australian Science Teachers Association

Professor Caroline McMillen, Chief Scientist for SA

SASTA Board

President: Vanessa Fay
Vice President: Jane Wright
Treasurer: Mark Divito
Anthony Armstrong
Marianne Nicholas
Anthea Ponte
Anita Trenwith
Yvonne Zeegers

Board Representatives

Awards
Yvonne Zeegers (Convenor)
Anthony Armstrong

Membership
Vanessa Fay (Convenor)
Anthea Ponte
Yvonne Zeegers

Oliphant Science Awards
Anita Trenwith
Yvonne Zeegers

PD & Conferences
Jane Wright (Convenor)
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Vanessa Fay

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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

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 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



Welcome to a busy start for science education in 2019!

The end of 2018 saw South Australian year 12 science students sit the first year 12 science subject examinations which incorporated the new Australian Curriculum topics into their curriculum. The resilience and adaptability of year 12 students and their science teachers generally was reflected well in their achievement of good results, and saw many students entering their preferred tertiary science pathway of choice.

At the SA Excellence in Science Awards held in August 2018, the new SA Chief Scientist, replacing Dr Leanna Read, was announced to be Professor Caroline McMillen. Professor McMillen has returned to Adelaide after seven years as the Vice-Chancellor and President of the University of Newcastle. Now she has begun her three-year appointment in Adelaide

last October, where she will provide independent advice to the State Government and support the research sector in SA. Professor McMillen has kindly agreed to become SASTA's new patron, and her generosity in doing so is greatly appreciated by all at SASTA. We are looking forward to a mutually rewarding involvement throughout her tenure as Chief Scientist, and gratefully acknowledge her genuine interest in science education for future generations.

SASTA's outgoing patron, Dr Leanna Read, has been a dedicated and tireless leader who has fearlessly promoted the importance of science, technology, engineering and mathematics education across all sectors of the community. We have earnestly appreciated her warm and sincere support for science education and educators in South Australia over the last four years. Her predecessor, Dame Barbara Hardy, was also a selfless and seemingly tireless advocate for science and science educators in South Australia, who radiated infectious enthusiasm for all scientific endeavours.

Professor McMillen has achieved a long and distinguished international career in science. Prior to moving to New South Wales in 2011, Professor McMillen had been deputy vice-chancellor and vice president of research and innovation at the University of South Australia from 2005 to 2011 and the head of physiology at the University of Adelaide from 1992. She was born in Belfast and grew up in England, attending both Oxford and Cambridge Universities, where she pursued her early research focussing on the effects of prenatal nutrition on adult diseases.

Lifting our focus to the Australian Science Teachers Association, in November last year the newly incoming ASTA President elect was announced to be Nathan Curnow, from Western Australia, with Geoff Quinton as the immediate past-president providing an outstanding model of renewing the ASTA federation in challenging economic and political times for science funding and support from government and corporate entities. It is to be hoped that Nathan will ably continue the work of renewing ASTA in the changing political and financial climates in Australian science education.

Vanessa Fay

2019 SASTA Membership

Thank you to those who have recently joined SASTA or renewed their membership for 2019.

If you haven't had a chance to renew your membership yet, this can be done on the SASTA website:

<https://www.sasta.asn.au/renew/form>

We already have a number of professional learning activities confirmed for Term 1 plus the Annual Conference in April, so if you're interested in attending any of these events your 2019 membership will need to be paid before you register to be eligible for the member price.

A new initiative for members for 2019 will be monthly prize giveaways. Congratulations to Faith Brohier, who won a double pass to see Professor Brian Cox as part of our membership renewal competition!

We look forward to working with you in 2019!



Annual Conference

15 - 16 April 2019

Pulteney Grammar School



Thinking Science

The 2019 SASTA Annual Conference will be held on **15-16 April** at **Pulteney Grammar School** and the program will incorporate the theme **‘Thinking Science’**.

We have already confirmed a great line up of **Keynote Speakers** including **Associate Professor Alan Duffy**, Lead Scientist, The Royal Institution of Australia who will discuss ‘Classroom Science - Real World Research - where the two meet’ and **Professor Sandra Orgeig**, Head: Molecular & Evolutionary Physiology of the Lung Laboratory, the University of South Australia, who will speak around the concept of science as an evidence based way to make policy and other decisions and an examination of the rise of ‘fake news’.

Some of our Cutting Edge Presenters are listed below. Dr Cameron Shearer will speak about **‘Hydrogen: A renewable energy sourced from sunlight and water’**, Dr Ben Sparkes’ presentation will cover **‘The Quantum Information Revolution’** including demonstrations of a Laser Radio and Laser Interferometer which he recently presented at Google Headquarters and Dr Susan Woods will be back at this year’s Conference to discuss **‘Genetic Scissors and the future for personalised medicine’**.

Cutting Edge Presenters:

- Dr Katharina Richter, NHMRC Early Career Fellow, The University of Adelaide
- Dr Cameron Shearer, Research Fellow, Department of Chemistry, The University of Adelaide
- Dr Ben Sparkes, ARC DECRA Fellow, Institute of Photonics & Advanced Sensing, The University of Adelaide
- Dr Susan Woods, Senior Research Officer, Gastrointestinal Cancer Biology Group, The University of Adelaide

Program Outline

Day 1 Monday 15 April	
7.30am	Registration & Light Breakfast
9.00am	Welcome & SASTA Medal Presentation
9.30am	Keynote Presentation
10.30am	Morning Tea & Exhibition
11.10am	Workshop Session 1
12.15pm	Workshop Session 2
1.15pm	Lunch & Exhibition
2.05pm	Workshop Session 3
3.10pm	Panel Discussion
4.25pm	SASTA Celebration and Awards Ceremony

Day 2 Tuesday 16 April	
8.30am	Registration
9.00am	Welcome
9.05am	Keynote Presentation
10.05am	SASTA AGM
10.35am	Morning Tea & Exhibition
11.10am	Cutting Edge Session A
12.15pm	Cutting Edge Session B
1.15pm	Lunch & Exhibition
2.05pm	Workshop Session 4
3.10pm	Workshop Session 5
4.15pm	Happy Hour

Sponsored by:



2019 SASTA Awards

Have you considered nominating yourself or a colleague for a SASTA Award or Scholarship?

There are many great teachers out there that SASTA would like to acknowledge, but often they don't get nominated for Awards. **There are a number of awards available to SASTA members and we would love to hear from you and share your contributions to your school and science community!**

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.

We asked 2018 SASTA Medal Winner, Kathy Paige, what impact did receiving this award have?

"It has been interesting to receive feedback from a range of people. Early career teachers who receive the SASTA newsletter emailed their congratulations. It was posted on university Yammer and I received comments like "Just read something in Yammer about you receiving this award. Congratulations and well deserved." I have added it to my CV as it is an example of sustained support for the science professional association."

Credit Union SA / SASTA Outstanding Contribution to the Teaching of Science Award

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 plus a complimentary Conference registration will be awarded to enable country based science teachers to attend the SASTA Annual Conference on 15-16 April 2019

Online nomination forms can be completed at www.sasta.asn.au.

Nominations close Friday 15 March 2019 at 4.00 pm

Term 1 Professional Learning

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

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

SACE Stage 1 & 2 Workshops

Teachers New to SACE Stage 2 Biology

Friday 15 February

Time: 9.00am - 3.30pm

Venue: Education Development Centre

Presenters: Brian LeCornu and Tony Diercks

Key Topics:

1. Introduction

- Australian Curriculum (Topics and Assessment, SU, SIS, SHE)
- What's new?
- SACE Board documents
- Designing a Teaching Program
- Alternative Programs

2. Theory Lessons

- Teaching biology (including discussion of new content from 2018)
 - Analysing worksheets, class assignments, homework assignments using new assessment design criteria and performance standards
- AV and multimedia materials in Senior Biology

3. Practical Lessons

- Types of Practical
- Assessing practical work
- Test questions relating to practicals

4. Assessment Plans

- Including changes from 2018 – e.g. 'weightings', examination format

5. Moderation

6. Preparing tests, SHE questions, and SHE investigations

- Analysing test questions
- Preparing answers
- 'Deconstructing' a problem

7. Marking

- Marking tests, SHE questions, and SHE investigations
- Marking extended response questions

8. Q & A Session

Intended Audience: For teachers new to Stage 2 Biology and current teachers seeking guidance for the new course.

Introductory Stage 2 Physics

Friday 15 February

Time: 9.00am - 3.30pm

Venue: Education Development Centre

Presenters: Michael Smith (Concordia College)

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.

Key Topics:

1. Overview of the course

- Using the subject outline in teaching

2. Planning and assessment

- Assessment types
- Developing a LAP
- Good investigations
- Developing SATs
- Formative / Demonstration activities
- Other resources
- Planning the year

3. Sample tasks and discussion

- Have some prepared to discuss
- Assessing and using the performance standards
- Science Inquiry Skills / SHE assessments
- Examination preparation

4. Moderation

- What is required
- Planning and organisation

Intended Audience: For teachers new to Stage 2 Physics and current teachers seeking guidance for the new course.

Registration Fees

- | | |
|--------------------------------|-------|
| • Personal Member | \$145 |
| • Corporate Member (SA School) | \$185 |
| • SASTA Student Member | \$50 |
| • Non Member | \$225 |

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

Morning tea and lunch will be provided

Teachers New to SACE Stage 1 & 2 Psychology

Friday 22 February

Time: 9.00am - 3.30pm

Venue: Education Development Centre

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

Key Topics:

1. **Levels of Explanation**
2. **Assessment Type 1: Investigations Folio**
 - How to conduct a research program
 - Guiding students in writing research proposals, drafts and final reports
 - Strategies to help students understand the skills needed for the research programs
3. **Assessment Type 2: Skills and Application Tasks**
4. **Grading of:**
 - Assessment Type 2: Skills and Application Tasks (Stage 1 focus)
 - Assessment Type 2: Skills and Application Tasks (Stage 2 focus)

Intended Audience: For teachers new to Stage 1 or 2 Psychology.

Introducing Stage 1 & 2 Nutrition

Monday 4 March

Time: 9.00am - 3.00pm

Venue: Education Development Centre

Presenters: Lisa Cibich & Angela Leopold

This session will provide an introduction and revision of Stage 1 and Stage 2 Nutrition covering content, resources, assessment and SACE requirements.

Key Topics:

- Stage 1 & 2 Subject Outline
- Topics and resources
- Assessments
- Exam and Moderation

Please bring along resources used, task design and student work to share in moderation.

Intended Audience: Teachers new to SACE Nutrition and those wanting a refresher and a chance to network with fellow Nutrition teachers.

Introducing Stage 2 Chemistry

Friday 1 March

Time: 9.00am - 3.30pm

Venue: Education Development Centre

Presenter: Glen Arthur (University Senior College)

Introducing Stage 2 Chemistry provides an overview, and guidance offered for planning, assessment and task design. Participants will be given the opportunity to share and discuss ideas, tasks and other resources.

Key Topics:

1. **Subject outline and its use with students**
2. **Planning and assessment**
 - Assessment types
 - A look at investigations
 - Developing SATs - not all tests
 - Formative / Demonstration activities
 - Other resources
 - Planning the year
3. **Sample tasks and discussion**
 - Have some prepared to discuss
 - Assessing and using the performance standards
 - Science Inquiry Skills / SHE assessments
 - Examination preparation
4. **Moderation**
 - What is required
 - Planning and organisation

Intended Audience: For teachers new to Stage 2 Chemistry.

Maritime Museum Excursion - FREE

Date: Saturday 2 March 2019

Venue: Maritime Museum, 126 Lipson St, Pt Adel

This free two hour teacher excursion aims to introduce you to the Maritime Museum and the programs they have available. The tour will start with a **half hour boat ride on the Port River** and then we will move into the museum where you will have time to **explore the exhibitions** independently and with a guide. The tour will finish with a **visit to the Port Adelaide Light House**.

The South Australian Maritime Museum is an ideal learning environment for students to explore South Australia's unique history, our relationship with maritime culture and the marine environment. Programs cover a wide range of curriculum areas and year levels and provide hands-on and discovery-based learning experiences.

More details can be found at www.sasta.asn.au

National Science Week

10 - 18 August 2019

School theme - Destination Moon: more missions, more science

This theme is a way for teachers and their students to discover past missions to the Moon and space programs that have solved some of the seemingly unsolvable problems—and current and future space programs, operations and missions. Many of these use big picture thinking in science to solve problems, and technology, engineering and mathematics to design new solutions. This will help forge our future paths in the areas of space operations, space science, Earth observations, positioning systems and communications.

National Science Week will be taking inspiration from:

- The 50th Anniversary of the Apollo 11 Mission
- The International Year of the Periodic Table which coincides with the 150th anniversary of the publication of Dmitry Mendeleev's Periodic Table

An ePoster and Resource eBook will be available in late February. The 2019 Resource Book of Ideas for National Science Week will offer teachers and students the opportunity to investigate the people, space agencies, universities, and science organisations that are all delivering solutions in space science. Keep an eye on the Australian Science Teachers Association (ASTA) website for more information:

<http://asta.edu.au/programs/natscienceweek>

School Grants 2019

Grants for amounts of \$100 to \$500 will be available to SA Schools to conduct any Science activity or event during National Science Week.

The application process can be completed online and will be open from Monday 25 February 2019. Applications will close on Monday 22 April, with successful applicants notified on Friday 17 May.

For more information, please visit the ASTA website at - <http://asta.edu.au> and click on National Science Week. Or visit the National Science Week website for more details about the event:

<https://www.scienceweek.net.au/schools/>

Enquiries about the Schools Grants can be sent to the SA Schools Grants Representative, Priscilla Martinus at fullerst@adam.com.au



Living Science: Biology

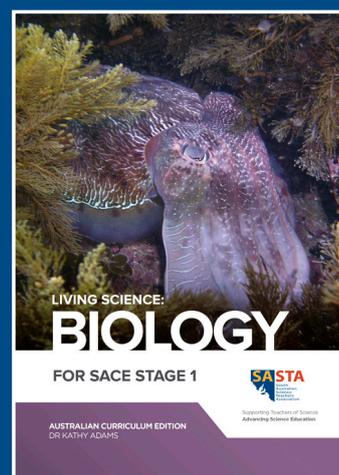
NEW | Stage 1 Biology Textbook written by Dr Kathy Adams, \$49 each

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.

Order your copy online now!



Notice of Annual General Meeting

Notice is given that the 2019 Annual General Meeting of members of The South Australian Science Teachers Association Incorporated will be held at Pulteney Grammar School, South Terrace, Adelaide, on Tuesday 16 April, commencing at 10.05am for the purpose of transacting the items of business below.

Agenda

1. Welcome and Apologies
2. Minutes of the 2018 AGM
 - a. Acceptance
 - b. Business Arising
3. President's Report
4. Treasurer's Report
5. Election of Board Members
6. General Business
 - a. Membership Fees
 - b. Appointment of Auditor
7. Any Other Business

Call for nominations - 2019

South Australian Science Teachers Association
ABN 22 938 317 192

Closing date: 5.00pm 19 March 2019

Background

1. Call for Nominations

All members of SASTA are hereby notified of a call for nominations for one (1) position on the Board.

2. Composition of the Board and terms of office

The board consists of up to nine (9) 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 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 Kate Dilger, Executive Officer, on 8354 0006 if they require further information.

Oliphant Science Awards

Great opportunities for learning through science



BHP Billiton Awards

Congratulations to Kathleen Best from Clarendon Primary School who is South Australia's teacher finalist in the BHP Foundation Science & Engineering Teacher Awards.

Winning entries from 2018 Scientific Inquiry and Models & Inventions categories were eligible to enter 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.

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 'Creative Thinking Lesson Plan' gives you easy to follow steps to help spark your inventive abilities. Look up <https://www.thoughtco.com/creative-thinking-lesson-plans-1992054>

2019 Category Titles

Photography

- Changing Weather
- Local Wildlife
- Many types of flight in nature
- Tessellations
- Gears and cogs
- Wearable technologies

Posters

- The science of flight
- Issues around plastics
- Push / pull forces
- The ring of fire - tectonic forces
- The importance of the moon
- Science in my backyard

Science Writing

- Australian scientific contributions to flight
- STEM - helping the disabled
- From alchemy to chemistry: the development of the periodic table
- The development of space science
- Genetics: feeding the world
- Needs of living things
- Meeting future energy needs
- Science as a Human Endeavour (YEAR 11-12 ONLY)

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

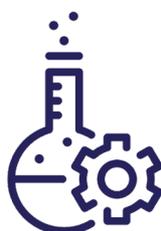
Science Writing, Multimedia, Computer Programming and Robotics, Posters and Photography are great ways to inform people. Games can teach and be fun at the same time.

National Science Week

The 2019 theme 'Destination Moon: more missions, more science', focussing on big picture thinking to solve science problems, and technology, engineering and mathematics to design new solutions 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.

Teachers Resource Kit

This FREE downloadable resource helps to integrate the Oliphant Science Awards into your classroom through the Australian Curriculum. It provides tips from the judges, facts to share with your class and an activity to provide a starting point for students. Download your copy at: www.oliphantscienceawards.com.au.



New and Country Schools Incentive

Support for new schools and country school's participation:

Schools who have not participated in the past five years and country schools wanting assistance for registration fees are eligible to apply for support.

New and country schools will have the opportunity to enter the Oliphant Science Awards by providing up to \$200.00 towards entry registration fees.

Selected schools will receive support to a maximum amount of \$200.00 each.

Applications close Friday 24 May 2019

Apply now: Please fill out the form online at www.oliphantscienceawards.com.au

2019 Oliphant Key Dates

Term 1

- Look at information on the website, distribute student information, category information and rules to students
- New Coordinators meeting (online) - Date TBC

Term 2

- **Registration forms** - negotiate a date with your students to return their student registration form (before 6 June)
- **Friday 24 May** - Closing date for Rowe Scientific New & Country School Incentive applications
- **Thursday 6 June** - School Coordinator Registration and Project Registrations due.
- **Friday 7 June** - Judges Registrations due.
- **Monday 24 June to Friday 12 July** - Delivery of Games entries to SASTA. Science Writing, Scientific Inquiry and Multimedia **MUST** be submitted online.

Term 3

- **Saturday 10 August** - Computer Programming and Robotics judging interviews
- **Friday 23 August** - Crystal Investigations, Models & Inventions, Photography and Poster entries delivered between 9am - 5pm to Festival Functions.
- **Saturday 24 August** - Crystal Investigations, Models & Inventions, Photography and Poster Judging Day.
- **Sunday 25 August** - Open Day 12:00 noon - 4:00pm.
- **Monday 26 August** - ALL Entries to be collected from Festival Functions.
- **Friday 20 September** - Presentation Ceremony (Invitation Only event).

All details are subject to change, please keep checking the **Oliphant Science Awards Website** (www.oliphantscienceawards.com.au)

To Find Out More or Get Involved:

Visit www.oliphantscienceawards.com.au to download the complete 2019 Information Booklet for all the details on this year's competition. You can also watch our Oliphant Science Awards Video, view past event photos and details of previous winners, register as a judge or volunteer, or simply find out more about the competition!



Like us on Facebook!

www.facebook.com/oliphantscienceawards



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.

To reflect the emerging emphasis on **STEM** skills and dispositions, the workbooks contains **Engineering Design Challenges**. Each challenge asks students to apply their content knowledge and skills to create solutions to real world applications of science using an engineering design process.

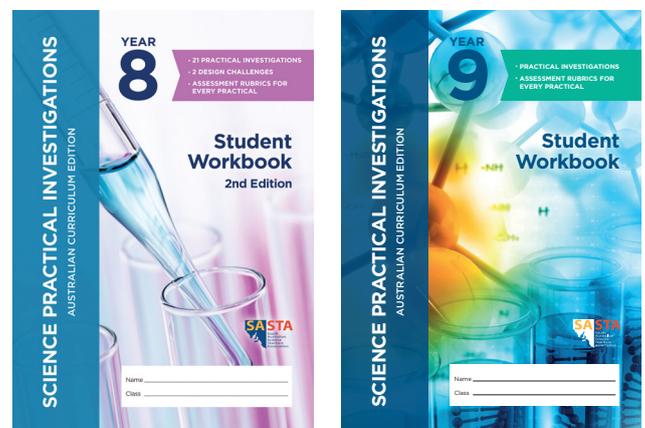
Features:

- 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.
- Consistent, easy to use format.

Cost: \$18.50 (including GST) per book

Minimum order of 20 copies

Sample pages are available at www.sasta.asn.au



SCIENCE INVESTIGATIONS RESOURCE

What if..... we do Science?

Helen Silvester



- Over 50 unique Science investigations!
- Easy to use student worksheets ready to photocopy
- Ideal for use as assessment tasks
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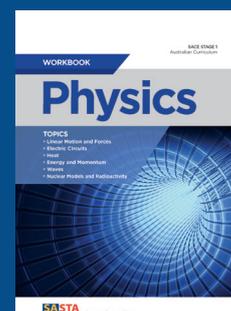
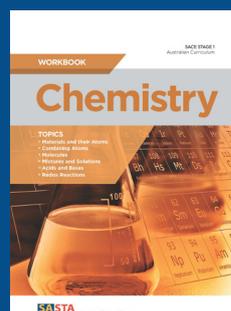
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Biology Levels of Life

Brian LeCornu and Tony Diercks

Biology Levels of Life - Australian Curriculum Edition Textbook

\$61.20

This textbook is from the authors of the popular Biology: Levels of Life materials, used by teachers and students since 2000. It provides detailed coverage of all the content (Science Understanding) of the Biology subject outline to be taught at Stage 2 from 2018. The new content is relevant, up-to-date and addresses **Science as a Human Endeavour**, with many examples throughout. It is attractively presented in full colour with numerous links to videos, animations, and useful resources. The textbook is divided into four topics, with each topic presented in chapters designed to make the material easy to follow, with study questions at the end of each chapter.

Biology Levels of Life - Australian Curriculum Edition Workbook

\$23.95

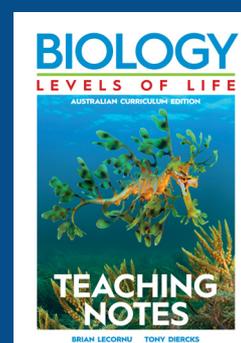
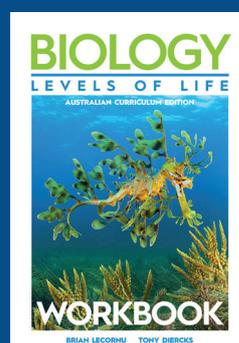
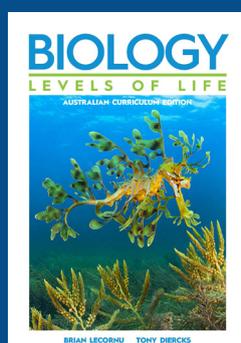
This workbook has been written specifically to complement the textbook. It covers all Science Understandings of the Biology subject outline and can be used in conjunction with the textbook or it can be used effectively on its own as an aid for understanding and revision. By completing answers to the workbook questions, students will develop their knowledge and understanding of biological principles and concepts relevant to the course.

Biology Levels of Life - Teaching Notes

\$120.00

(special introductory price available until the end of February)

Teachers will find the Teaching Notes invaluable in ensuring that all Science Understandings are covered for each of the four topics. The book is designed so that when open on the desk the pages lay flat and the notes can be seen easily at a glance. There is also additional information and there are teaching tips throughout. The Workbook answers will assist teachers in explaining concepts to students. Students should be encouraged to attempt the Workbook questions before being provided with the answers.



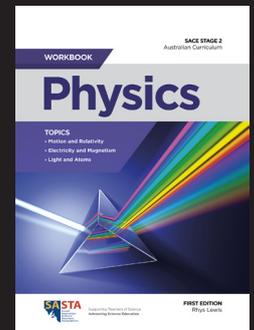
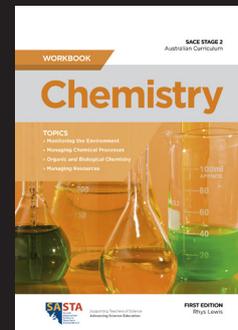
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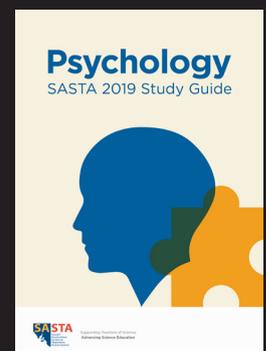
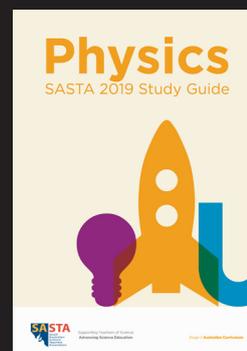
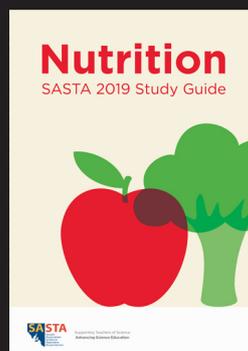
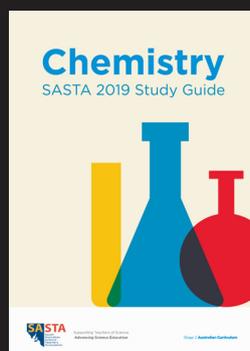
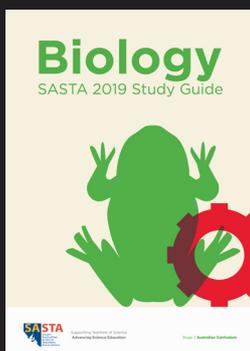
Physics

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

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