

November 2019 **SASTA**

Newsletter of the South Australian Science Teachers Association Inc.



Latest events

For the latest events and conference information go to:
www.sasta.asn.au

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

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Conferences & Events

STEM Conference

Friday 29 November 2019, Botanic High School
Last chance to register! See page 6 for details.

Psychology Teachers Summer Conference 2020

Friday 17 January 2020, Education Development Centre
See page 7 for details.

Teachers new to teaching Stage 2 Science

- Biology – Friday 14 February 2020
 - Physics – Friday 14 February 2020
 - Chemistry – Friday 21 February 2020
 - Nutrition – Friday 21 February 2020
 - Psychology – Monday 2 March 2020
 - Scientific Studies – Monday 2 March 2020
- See page 5 for more details.

Designing lab lessons with a STEM focus (secondary)

Friday 28 February 2020
See page 5.

Lets really do Science Inquiry (primary)

Friday 13 March 2020
See page 5.

SASTA Annual Conference – Call for presenters

23–24 April 2020, Pulteney Grammar School
See page 8.



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South Australian Science Teachers Association Inc.

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Association member of the Australian Science Teachers Association (ASTA)

Supporting Teachers of Science | Advancing Science Education





249 Henley Beach Road
Torrensville SA 5031
P: 08 8354 0006
F: 08 8354 0008
E: office@sasta.asn.au
W: www.sasta.asn.au

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Newsletter copy deadlines 2020

(Advertising deadlines one week earlier)

Edition	Deadline
February	10 January
May	10 April
August	10 July
November	9 October

Advertising

Advertising rates & booking form available online at 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



Welcome back to a very busy final school term for the year! Finalising assessment grades, writing student reports and planning next year's curriculum delivery is moving into full swing for science teachers. It is good to remember from this year's SASTA Annual Conference Professor Allan Duffy's encouragement for teachers to make contact with scientists and involve them in your science classroom. The CSIRO provides an excellent "STEM Professionals in Schools" program through which this can be arranged, and many teachers are grateful to the CSIRO for supporting this invaluable stimulus to student curiosity and learning. Volunteer scientists coming into my classroom in their own time to work with students has been very rewarding for all people involved, and enhanced students' scientific understanding.

SASTA and South Australian science teachers certainly had something to celebrate in October when the winners of the Prime Minister's Prize for Science Education were announced in Canberra on Wednesday 16 October. Both the Primary Teacher and Secondary Teacher winners this year are SASTA colleagues. Hearty congratulations to them both – the awards were thoroughly well-deserved.

Sarah Finney from Stirling East Primary School is the Primary Science Educator's Prime Minister's Prize winner, and Sam Moyle from Brighton Secondary School is the Secondary Science Educator's Prime Minister's Prize winner. Both Sarah and Sam have been strong supporters of the Oliphant Science Awards, and both had also recently become SASTA winners of our Oliphant Science Award nominations to the national BHP Foundation Science and Engineering Teacher Awards. At the SA Science Excellence Awards in August this year, Sarah Finney had also been nominated as a finalist for the "STEM Educator of the Year – School Teaching". This category, however, was deservedly won by our esteemed SASTA Board member, Anthea Ponte, teaching at Hawthorndene Primary School, whom we heartily congratulate and wish her every success in her STEM teaching career.

The World Teachers Day Celebration held by Educators SA on 25 October was highlighted by SASTA's 2019 SASTA Medal winner, Ian McMahon, being recognised at this event as being the recipient of SASTA's highest award for science teaching in 2019. Ian has long been a dedicated science teacher as well as an involved SASTA member over many decades, and SASTA's recognition of this has been thoroughly well-deserved by him.

A Strategic Planning Workshop for the SASTA Board is being held on Monday 2 December, and SASTA is very grateful that Rod Nancarrow, the Executive Officer of Educators SA, will be involved in assisting to focus that planning on strategic objectives for SASTA as we move forward into the twenty-first century. Science teachers are well aware of the increasingly rapid pace of change in the way science is taught in schools and keeping up with those changes to ensure SASTA's continued relevance to science teachers throughout South Australia is of paramount importance.

Vanessa Fay

Vale Mr Robert Morton AM

Sad news to us is of the recent passing of Bob Morton, who was a past President of both SASTA and ASTA, and an Honorary Life Member of both associations. Bob was not only a great leader and mentor within SASTA and OSA circles, but also on the national scene. Apart from his leadership with SASTA, he was the ASTA President in the period around 1987–89, the time that saw ASTA emerge from a rather loose affiliation of the state science teacher associations into a fully national federation that developed the ASTA office and secretariat in Canberra, and the capacity to undertake national science education projects. Bob was awarded his ASTA Life Membership at CONASTA in Launceston in July 2009. Also, in 2009 Bob was made a Member of the Order of Australia for service to science education, particularly chemistry through curriculum development, as a teacher and mentor through contributions to educational and scientific organisations.

2020 SASTA Awards

There are many great teachers out there that SASTA would like to acknowledge, but often they do not get nominated for Awards because teaching is a very busy job and people do not 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

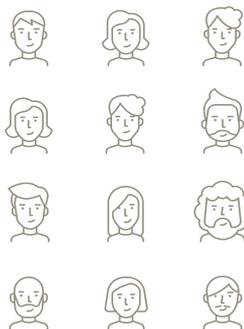
This scholarship is in memory of Helen Castle, a dedicated and enthusiastic science teacher who tragically died during the Eyre Peninsula bush fires in 2005. The scholarship is designed to assist country science teachers attend the SASTA Annual Conference and gain professional development to assist themselves 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, 23-24 April 2020.

Nominations close Friday 6 March 2019 at 4.00 pm. Nomination forms are available at www.sasta.asn.au.

Why should you support the credit union that supports SA's educators?



We help more than **10,000** educators with their banking



Dedicated mobile team supporting the **banking needs of the education community**



Teachers of SA Facebook community



Awarding SA's quality teachers through our 18 annual awards



Primary sponsor of CEASA World Teachers' Day Awards



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Sponsoring over **180** education professional development events

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Established by South Australian teachers over 60 years ago



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creditunionsa.com.au/supporting-education

Professional Learning for Term 1 2020

Teachers new to teaching Stage 2 Science

Education Development Centre, Hindmarsh
9.00 am – 3.00 pm

Some of the key topics covered in these workshops include: an overview of the course, planning and assessment, sample tasks and discussion and moderation.

Participants will be given the opportunity to share and discuss ideas, tasks and other resources for teaching the new course.

Biology

Friday 14 February
Presented by Brian LeCornu & Tony Diercks

Physics

Friday 14 February
Presented by Michael Smith (Concordia College)

Chemistry

Friday 21 February
Presented by Glen Arthur (University Senior College)

Nutrition

Friday 21 February
Presented by Lisa Cibich (Gleeson College)
& Angela Leopold (Kangaroo Inn Area School)

Psychology

Monday 2 March
Presented by Carolyn Pinchbeck (Xavier College)
& Irena Atherton (Pulteney Grammar School)

Scientific Studies

Monday 2 March
Presenter TBA

Designing lab lessons with a STEM focus (secondary)

Friday 28 February
Underdale High School, 9.00 am – 3.00 pm
Presented by Kate Dilger

This workshop examines how we can make the laboratory experience more meaningful for students and reflect the emerging emphasis on STEM. Through hands-on engagement, teachers will be guided through how to design practical investigations that ask students to apply their content knowledge and skills to create solutions to a real world application of science. Copies of the practical activities explored will be supplied to all participants. The workshop is aimed at resourcing teachers of Years 7–10 science.

Lets really do Science Inquiry (primary)

Friday 13 March
Education Development Centre, 9.00 am – 3.00 pm
Presented by Kate Dilger

The Australian Curriculum: Science emphasises inquiry-based teaching and learning. Scientific inquiry promotes critical and creative thinking by encouraging flexibility and open-mindedness as students speculate about their observations of the world. In an inquiry classroom, students are able to challenge themselves to identify questions and draw evidence-based conclusions using scientific methods.

In this workshop teachers will investigate the process and practicalities of inquiry learning in the Science classroom. They will engage in hands-on activities that will inform their understanding of the types of inquiry and how to implement them in their teaching program.

The workshop is aimed at resourcing teachers of Years R–6 science.

Registration fees

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

Morning tea and lunch provided.

For more information and to register, go to sasta.asn.au/professional_learning



STEM Conference 2019

29 November 2019

Adelaide Botanic High School

- For educators of Years 6-11 mathematics, science, ICT, design & technology, as well as education leaders
- Share and explore teaching methods, tools, resources, and activities
- Opportunity to network and exchange ideas about STEM teaching and learning
- Some workshops will address the critical importance of connecting different areas of STEM by considering ways of interrelating science and/or mathematics, while others will address activities to support teaching and learning of specific topics.

Timetable

8:30 am	Registration
9:00 am	Welcome
9:15 am	Keynote presentation
10:25 am	Morning tea
10:55 am	Workshop session 1
12:00 pm	Workshop session 2
1:00 pm	Lunch
1:50 pm	Workshop session 3
2:55 pm	Workshop session 4
4:00 pm	Happy Hour



Keynote presentation

Gender Equity – It's Not Rocket Science

Professor Lisa Harvey-Smith

Australian Government Women in STEM Ambassador

Professor of Practice in Science Communication, UNSW

In this talk, astrophysicist and Australia's Women in STEM Ambassador Professor Lisa Harvey-Smith will discuss some of the ways in which educators can support student engagement in STEM and encourage more girls to pursue these disciplines in further and higher education.

Full program and register at sasta.asn.au

Psychology Teachers Summer Conference 2020

Friday 17 January 2020, Education Development Centre, Hindmarsh

PROGRAM

9:00 am	Welcome	Carolyn Pinchbeck
9:15 am	<p>Keynote: Psychology and Its Place in the Future of Work This presentation will get people thinking about how new movements within psychology apply to a wide range of careers (with a focus on psychology teaching in an educational setting, providing useful examples to psychology teachers). Dr Woodyatt will introduce some of the changes we are seeing in university psychology accreditation (to a skills focus rather than a content focus) and what this means in terms of preparing our students for psychology pathways beyond high school.</p>	Dr Lydia Woodyatt, Flinders University Dr Lydia Woodyatt researches at the intersection of social, clinical, and organisational psychology. She uses psychological science to increase engagement and motivation, positive relationships, and also to help people work through difficult emotions following failure and transgressions.
10:15 am	Morning Tea	
10:30 am	SACE Examination and Moderation Review	SACE Psychology Examination & Moderation Supervisors Team
12:00 pm	Concurrent Workshops Session 1	
	1.1 Help – Where Do I Start?! (back by popular demand!)	Jane Hoffman & Morgan Brookes, Cornerstone College
	1.2 Social Psychology Post 2011: Radical Shifts that Should Change How We Teach the ‘Classics’	Dr Lydia Woodyatt, Flinders University
	1.3 Writing a Client Case Study, Incorporating the DSM-5 and Applying Rogerian Skills	Michael Larner & Lisa Emes, Xavier College
1:00 pm	Lunch	
1:30 pm	Concurrent Workshops Session 2	
	2.1 Creative Task Design for Stage 1 and 2 Psychology	Emma Beukema, St Marys College
	2.2 Social Psychology Post 2011: Radical Shifts that Should Change How We Teach the ‘Classics’	Dr Lydia Woodyatt, Flinders University
	2.3 Help – Where do I start?!	Jane Hoffman & Morgan Brookes, Cornerstone College
2:30 pm	Concurrent Workshops Session 3	
	3.1 Creative Task Design for Stage 1 and 2 Psychology	Emma Beukema, St Marys College
	3.2 Writing a Client Case Study, incorporating the DSM-5 and Applying Rogerian Skills	Michael Larner & Lisa Emes, Xavier College
	3.3 Tests and Exams – Going Electronic!	TBA
3:30 pm	Conference Plenary	Carolyn Pinchbeck

More information and register at sasta.asn.au



Call for workshop presenters

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 focus

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 ideas around the theme

- Civics and citizenship connecting with science
- Exploring climate change solutions
- Why is plant health so important?
- Learning from our first nations people
- Water security
- Aquaponics for your school
- Science and sustainability

Submit a proposal for the SASTA Annual Conference at www.sasta.asn.au by Friday 31 January 2020.

Prime Minister's Prizes for Science

The Prime Minister's Prizes for Science recognise the achievements and success of Australian scientists and innovators to both Australia and internationally, as well as the critical role science educators play in inspiring and encouraging students to take an interest in science and consider a career in the field. This year, both of the Prime Minister's Prizes for Excellence in Science Teaching were awarded to SASTA members. Below are the summaries of their citations:

The Prime Minister's Prize for Excellence in Science Teaching in Primary Schools was



awarded to Sarah Finney (Stirling East Primary School) for introducing hundreds of children to the joys of studying science. Sarah has combined life in the classroom with involvement in

teaching associations, conferences and speaking engagements, to expand her network and knowledge in the field of science.

The Prime Minister's Prize for Excellence in Science Teaching in Secondary Schools was

awarded to Samantha Moyle (Brighton Secondary School) for transforming interactive learning beyond the classroom. Sam hosts a Facebook page to promote science and learning. Her YouTube channel shows kids how to write science reports, calculate statistics, choose the best iPad app and learn more about science.

For the full citations of all recipients in 2019, go to www.industry.gov.au/data-and-publications/prime-ministers-prizes-for-science-2019.



Photo credits: The Prime Minister's Prizes for Science, Australian Government Department of Industry, Innovation and Science

Biology: Levels of Life

Brian LeCornu and Tony Diercks

Biology: Levels of Life – Australian Curriculum Edition Textbook **\$61.20**

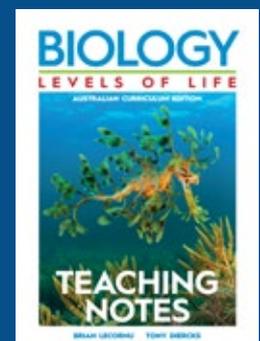
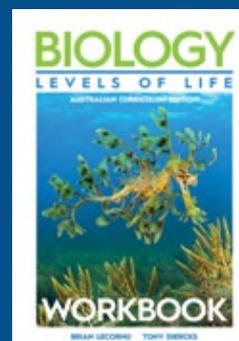
This textbook provides detailed coverage of all the content (Science Understanding) of the SACE Stage 2 Biology subject. The new content is relevant, up-to-date and addresses Science as a Human Endeavour, with many examples throughout. It is attractively presented in full colour with numerous links to 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**

Written specifically to complement the textbook, this workbook covers all Science Understandings of the Biology subject outline. It can be used in conjunction with the textbook or 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.

Biology: Levels of Life – Teaching Notes **\$120.00**

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 easily be seen at a glance. There are teaching tips throughout as well as additional information. Answers to questions in the Workbook will assist teachers in explaining concepts to students.



Reprinted with updates to match minor changes in the subject outline for 2020



Oliphant Science Awards

Congratulations to all prize winners in this year's Oliphant Science Awards. A complete list of winning entries is available at oliphantscienceawards.com.au. Thank you to all entrants, coordinators and teachers, and also the judges (who all agree that the standard of entries improves every year), volunteers and SASTA staff who all help to make the Oliphant Science Awards the amazing event that it is – with more than 2000 entries from over 100 schools throughout South Australia.

This year, the Oliphant Trophy was won by Phoebe Wood of Upper Sturt Primary School for her model of *Anchiornis Huxleyi* (above). This is the first time in the history of the competition that the Oliphant Trophy has been won by a primary school student!



Above: SASTA Vice President Jane Wright, Oliphant Trophy winner Phoebe Wood and Monica Oliphant at the Oliphant Science Awards Presentation Ceremony.

Below: R-7 prizewinners.

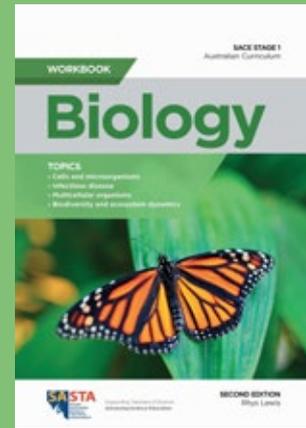
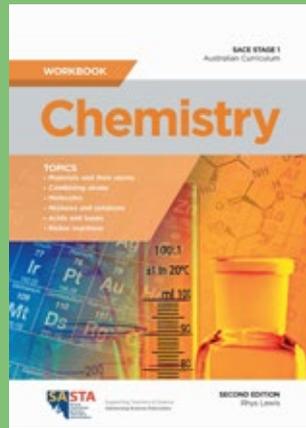
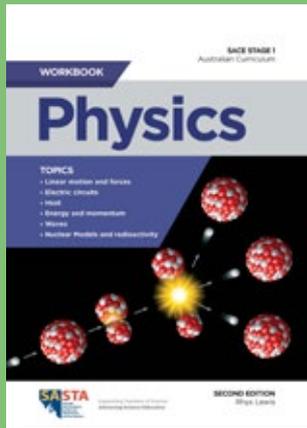
Prizewinners were presented with their awards at a ceremony at Brighton Secondary School on Friday 20 September, following a well-attended Open Day on 25 August when all winning entries were on public display. Besides viewing entries, visitors to the Open Day were treated to a range of live science presentations by Warrawong Wildlife Sanctuary, Mobile Science Education, the Nature Education Centre, the University of Adelaide, and the charismatic host 'Professor Flint' from Heaps Good Productions, along with many other hands-on activities and displays.

**Register your interest for 2020
at oliphantscienceawards.com.au**

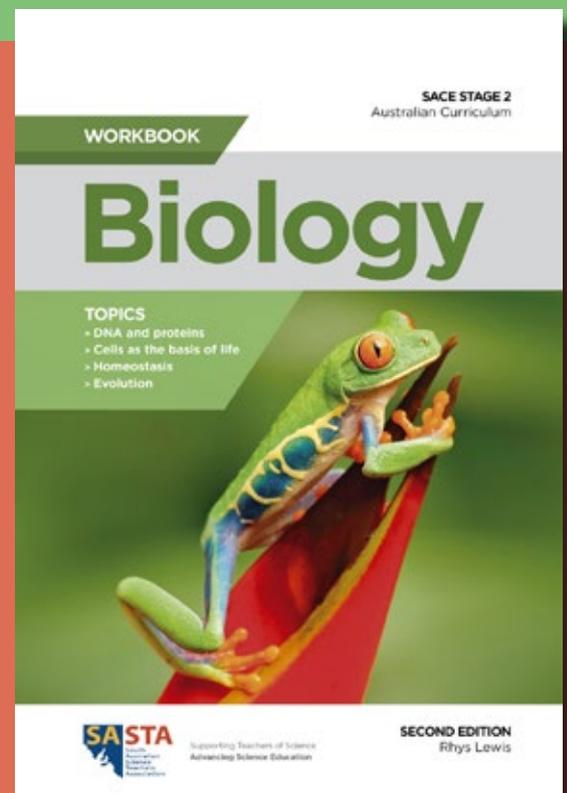
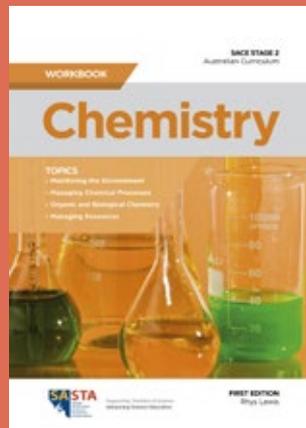
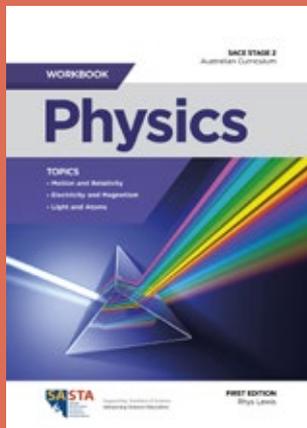


Student workbooks

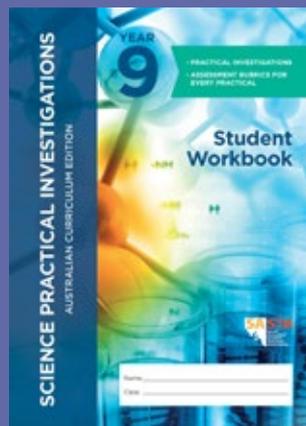
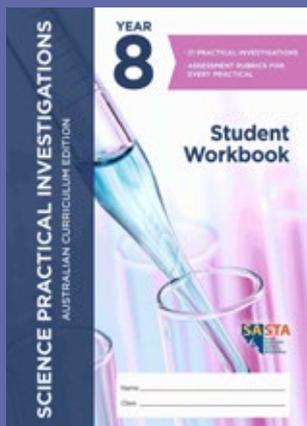
SACE Stage 1



SACE Stage 2



Year 8 & 9



See the website for information about all titles and to order

sasta.asn.au

ALL NEW Stage 2 Biology Workbook 2nd Edition

This workbook follows the revised SACE subject outline for Stage 2 Biology with statements from the Science Understanding section beginning each chapter.

The Second Edition includes revised chapters, extended explanations, new diagrams, and best of all, hundreds of new questions! The review tests have been revised to include questions that address criteria relevant to the strands of science inquiry skills and science as a human endeavour.

See the website for more information.

Discounted First Edition still available!

LIVING SCIENCE: BIOLOGY FOR SACE STAGE 2

This text was written to complement both the current SACE Stage 2 Biology subject content and the book *Living Science: Biology for SACE Stage 1* (published in 2018).

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 2 course.

Students will find it a great resource to complement lessons and will develop a broader knowledge of Biology across many different contexts.

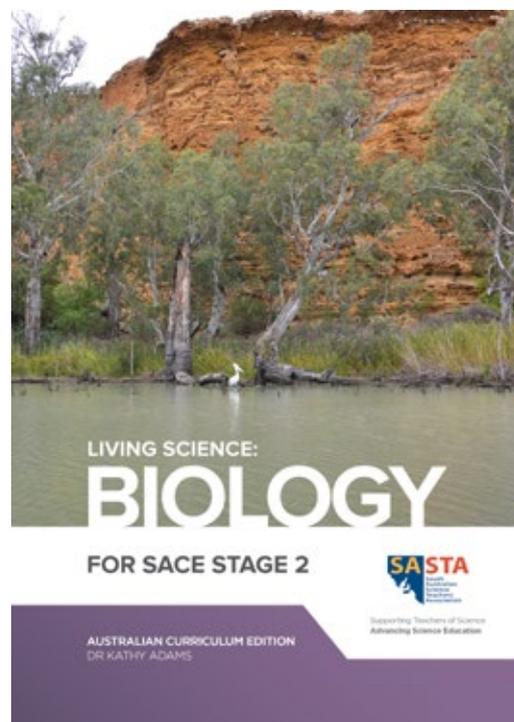
'Did you know?' breakout boxes throughout the text include related stories, concepts, perspectives and facts to help engage students in deeper learning.

'SHE Alert' boxes are connected to the four SHE Key concepts: Communication and Collaboration, Development, Influence, and Application and Limitation. These sections give students and teachers opportunities to consider how science and society interact to find solutions and overcome problems.

There are **Review questions** throughout the book and at the end of each chapter.

ISBN 9780975684528

\$54.00



RESEARCH PROJECT WORKBOOK & GUIDE FOR SACE STAGE 2

This step-by-step workbook guides students through the three parts of the Research Project:

- the Folio
- the Research Outcome
- the Evaluation/Review.

Students are guided through activities and supported with information to enable them to:

- generate an idea
- develop a research question
- plan, conduct and analyse research, and then
- structure a research outcome and an evaluation or review with a focus on achievement of the performance standards (at a high level).

Along with activities and information, the workbook also includes sections that enable students to organise and store hard copy project material.

ISBN 9780975684535

\$39.00

