



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

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Conferences / Events

Designing and Implementing STEM Challenges

- Primary - Monday 3 June 2019
- Secondary - Friday 14 June 2019

See page 5 for more details.

Innovating Through Science

- Primary - Friday 21 June 2019

See page 5 for more details.

SASTA Member Events - FREE for members

Cleland Wildlife Park Teacher Excursion

- Saturday 25 May 2019

Escape Mr Johnson's Science Class

- Tuesday 28 May 2019

See page 8 for more details or visit www.sasta.asn.au.

Oliphant Science Awards

Has your school registered a coordinator yet?

- Project Registrations close on Thursday 6 June 2019
- Judges Registrations close on Friday 7 June 2019

Please see page 9 for details or visit the website:

www.oliphantscienceawards.com.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

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Vice President: Jane Wright
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Peter Beveridge
Marianne Nicholas
Anthea Ponte
Anita Trenwith
Peter Turnbull
Yvonne Zeegers

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Awards

Yvonne Zeegers (Convenor)
Anthony Armstrong

Membership

Vanessa Fay (Convenor)
Anthea Ponte
Yvonne Zeegers

Oliphant Science Awards

Anita Trenwith
Yvonne Zeegers

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Newsletter copy deadlines 2019

(Advertising deadlines
one week earlier)

Edition	Deadline
August	11 July
November	10 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 term 2! I hope your holidays were refreshing and invigorating.

The highly successful two-day SASTA Annual Conference was held in the first Monday and Tuesday of the school holidays at Pulteney Grammar School, and utilised their impressive new Middle School building.

Professor Alan Duffy's keynote address "Classroom Science – Real World Research – Where the two meet" encourages science teachers and students to embrace lifelong learning. Alan encourages his Ph.D. students to take an additional subject outside the STEM areas, possibly in humanities or theatre (which has proven to be excellent when preparing them for public speaking.) Since the future for our students will be a very

demanding one, teachers need to be teaching students how to teach themselves. One way of doing that is to connect students with academics and researchers at universities to take up research projects and topics that matter to them, and will benefit humanity. Students gain enormous benefits from being involved in pursuing something that is bigger than themselves, but which matters to humankind. Since students involved in real world research will be exposed to uncertainty and ambiguity in research in ways that enable them to develop tolerance for working through these states, and consequently give themselves 'permission to fail' during these projects, their capacity to explain why things worked out differently to what was expected also develops. Students appreciate that there is no such thing as a silly question; inquiry is a rewarding pursuit. This in turn equips students to be able to work through even more uncertain problems in the future and achieve further beneficial outcomes for humanity. Being able to devote sufficient time and resources for educational institutions to achieve these valuable benefits in scientific study and learning for students presents a challenge for educators, but it is a worthwhile one to embrace. Professor Duffy gave some helpful guidelines about planning your science collaboration with researchers in schools for science students, being mindful of the fact that students are far more motivated if they can see the outcome emerging.

"A Panel of Dangerous Ideas" was warmly appreciated by the conference attendees, and featured Martin Westwell, Chief Executive at the SACE Board, Kristin Alford, Director of MOD at UniSA, and Brenton Willson, Leadership Development SA, Department for Education. Each speaker had the opportunity to present thought-provoking and unexpected ideas, followed by questions from the audience. Exploring the purpose of learning and how to make meaning of things, measuring the transition into different modes of learning and being better able to identify 'horizontal learning processes', and the idea that formal learning for life should be mandatory were explored.

Professor Sandra Orgeig from UniSA gave some insights into "Understanding the role of science in the post-truth era", where objective facts and evidence are less influential than appeals to subjective emotional beliefs, and where concepts such as 'I think, therefore I am' have given way to 'I believe therefore I'm right', or pseudoscience becoming preferred to real science.

South Australia's new Chief Scientist, Professor Caroline McMillen, who is also the patron of SASTA, declared that education was the key to transforming our state into a place where best frontier technology is harvested and implemented, especially in the space sector, where a collaboration of scientific and industry leaders shape the stage with creative and collective energy for future progress.

With many of these dangerous ideas to inspire us, the future prospect appears enticing, and encourages us to be a part of it in some way.

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 look forward to working with you in 2019!

BHP Foundation Science & Engineering Teacher Awards



Kathleen Best SA Teacher Finalist

In week 2 of Term 1, I had the opportunity to attend the BHP Foundation Science & Engineering Teacher Awards in Melbourne. It was a two day experience which involved meeting inspiring science and engineering teachers from other states and sharing our

pedagogies for enhancing student learning. During this time we presented what we do well at our sites, asked questions of each other, ate some brilliant food, and attended the BHP Foundation Science & Engineering Awards ceremony where the secondary student finalists presented their projects.

The secondary school finalists had created posters to support their projects and were selected from the winning entries of their state's Science Teacher Association competition. These projects were amazing and it was truly inspiring to see what students from our schools can do at a national level. Entries included a student who had created body armour to protect people undergoing radiation therapy, a student who had created a fast inflating life belt to combat drowning on our beaches, and another project where students had tested vegetable production with different soil additives.



The teachers panel was excellent and the winner, Allan Alipio from Western Australia, was a true inspiration to meet. At the start of each year he asks his students "How will your science project change the world?" and this has encouraged many of his Indigenous students to put together entries which are truly world changing. The teaching group shared emails so that we can further exchange resources and information with each other as we discover new things that work in our classes.

This is an excellent event to be a part of and I was very grateful to be given the opportunity to attend. If you get the chance to attend, go for it and enjoy the trip!

Kathleen Best

2018 Outstanding Preservice Science Educator

As many of you may know, SASTA runs a variety of activities that support teachers in different phases of their careers. One very important group are preservice teachers, who are just about to start their journey as new teachers of Science.

Last month, I had the pleasure of attending the Prizes and Awards ceremony for the Division of Education, Arts and Social Sciences at UniSA to announce the winners of the 2018 SASTA prize for Outstanding Preservice Science Educator.

The awardees were:

- Simone Phelan Bachelor of Education (Primary)
- Isabel Wilson Bachelor of Education (Primary and Middle)
- Emily Playford Master of Teaching (Secondary) (*unable to attend*)

I was thoroughly impressed by their commitment to and enthusiasm for their chosen profession. As well as the prestige of winning one of these awards, the prize also includes complementary membership of SASTA for 2019 and free registration at this year's SASTA Early Career Teachers Conference in October.

Jane Wright, SASTA Vice-President



Term 2 Professional Learning

Designing and Implementing STEM Challenges

Primary

Date: Monday 3 June

Time: 9.00am - 3.00pm

Venue: Education Development Centre

Secondary

Date: Friday 14 June

Time: 9.00am - 3.00pm

Venue: Education Development Centre

What does STEM look like in the classroom?

The goal of the workshop is to provide teachers with a simple, practical process for designing and implementing meaningful STEM challenges in the classroom. Teachers will be guided through exemplar lessons that incorporate engineering practices and design processes. They will gain an understanding of how to design lessons and tasks that allow students to apply or demonstrate their knowledge in some meaningful and relevant fashion.

This structured approach will provide teachers with a clear process and a wealth of resources for designing an effective STEM teaching and learning program.

(Although this is a stand-alone presentation, this workshop would provide an excellent follow-up for those that attended the 'Putting the E in STEM' workshops in Term 1.)

Innovating Through Science (Primary)

Friday 21 June

Time: 9.00am - 3.00pm

Venue: Underdale High School

Presenters: Melanie O'Leary & Kate Dilger

How can we use Science to engage students to be innovators?

Through this workshop Science will be the springboard for driving student innovation. We will explore ways of providing students with the opportunity to wonder, find and define problems, engage in authentic experiences and seek creative solutions.

The goal of the workshop is to provide teachers with an understanding of innovation education and ways to support students to turn their ideas into action with a Science focus. Teachers will unpack practices in unleashing student's ability to be innovators and engage in hands on experiences in understanding these concepts. The opportunity to design lessons and tasks, which allow students to transfer their knowledge and develop their capability skills, will be explored.

About Melanie O'Leary

Melanie is a Leading Learning Consultant for Catholic Education South Australia with a focus on STEM, Entrepreneurial Education and Mathematics. She has a passion and interest in trans-disciplinary learning, which fosters student voice and agency.

Melanie has enjoyed being a primary and middle years classroom teacher for over 15 years and working in leadership guiding whole school pedagogical change with a strong focus on numeracy and inquiry learning.

Registration Fees

- **Personal Member** **\$145**
- **Corporate Member** **\$185**
(SA School)
- **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

15 - 16 April 2019

Pulteney Grammar School



The 2019 SASTA Annual Conference was held on Monday 15 and Tuesday 16 of April at Pulteney Grammar School in their new Middle School Building.

Associate Professor Alan Duffy opened the Conference with an interesting keynote presentation on 'Classroom Science - Real World Research - where the two meet'. Professor Sandra Orgeig from the University of South Australia delivered a thought provoking keynote presentation on Tuesday morning discussing 'Understanding the role of science in the post-truth era'.

A wide variety of workshops were available to attendees with over forty workshops to choose from. The program included the opportunity to engage in hands-on science activities as well as those focussed on STEM planning and application. There were also six Cutting Edge Workshops where delegates were able to learn from engaging presenters about current research in their field including renewable energy, the quantum information revolution, biomedical advances and environmental health.

SASTA Annual General Meeting Results

SASTA's Annual General Meeting was held on Tuesday 16 April at Pulteney Grammar School in conjunction with the Annual Conference. At the AGM it was announced that Peter Beveridge and Peter Turnbull had been elected to the board for a three-year term of office.

SASTA Medal

At the opening address Hon John Gardner MP presented **Ian McMahon** with the SASTA Medal. Ian's teaching career spans 39 years and 4 different schools, where he taught a number of senior level science subjects as well as general science, VET resources and Infrastructure. However, Ian's involvement in science education has always extended beyond the classroom with a significant contribution to SASTA including conference presentations, resources, journal articles and committee involvement as well as the establishment of the crystal growing category as part of the Oliphant Science Awards.



Helen Castle Memorial Scholarship

The 2019 recipient of the Helen Castle Memorial Scholarship was **Hannah Fryar from Grant High School (Mount Gambier)**. The scholarship is designed to assist country science teachers access professional development and supports the recipients attendance at the Annual Conference. Hannah has developed a wide variety of methodologies in order to engage and connect students and she uses their context as students in a regional area to make the learning relevant. Her lessons are informative, interesting and creative as she is always looking for that special something to "hook" the students in, in order to improve their love of both Science and learning.



Outstanding Teacher Awards

Peter Dinan from Credit Union SA, presented the SASTA / Credit Union SA Outstanding Contribution to the Teaching of Science Awards at the SASTA Celebration & Awards Ceremony.

- **Carly Tate**, Junior Primary (R-2) from The Grove Education Centre
- **Abby MacPherson**, Primary (3-6) from Burnside Primary School
- **Alexandra Fowler**, Middle Years (7-10) from Woomera Area School

Carly Tate is a teacher of R-2 at The Grove Education Centre where she focuses on creating and maintaining a positive, inclusive and connected school culture. She has a strong belief that all children and young people can achieve success. Carly's understanding of differentiating practice to support students with complex needs and her desire to provide an inclusive science curriculum have been paramount in her success. Carly continues to model best practice and inspire her colleagues and The Grove Education Centre has become the place to visit for other special schools to view how to engage with STEM in a special education setting.

Abby MacPherson is the Science Curriculum Coordinator and STEM Leader for Burnside Primary School. Abby inspires her students to see the importance of science in their lives and build connections between the classroom and the real world. She raises awareness among both staff and students about the use and influence of science in their lives and has successfully partnered with many organisations to facilitate progressive initiatives for Burnside Primary School students. Abby's passion for science is infectious and she generously shares this enthusiasm and expertise with her students, the school and the science community.

Alexandra Fowler currently teaches at Woomera Area School and endeavours to engage with as much professional learning as possible. She is very active in the wider education community, connecting with science educators through Twitter and Facebook and has worked to develop external partnerships that encourage and share innovative teaching practices. Alexandra describes her own science and STEM classes as "a place where my students are encouraged to develop ideas, innovate and be curious." She is inspiring a generation of thinkers and believers - students who think their way through a process and have the self-belief and confidence to come up with a solution.



CONASTA
DARWIN 2019

68

UNCHARTED
TERRITORY
Innovation in Science Education



Every year, science educators from across Australia attend CONASTA to learn about the newest developments in science education, to network with colleagues, and to discover new tools, resources and teaching practices.

In 2019 CONASTA 68 will be held at Darwin High School in tropical Darwin from 7-10 July.

CONASTA is the annual national science education conference of the Australian Science Teachers Association (ASTA) and is convened in a different state each year. In 2019 the Science Teachers Association of the Northern Territory (STANT) will proudly host CONASTA 68.

The CONASTA 68 theme of 'Uncharted Territory' has been chosen to inspire all educators to focus on Innovation in Science Education. This unique theme will be carried through into a number of keynote presentations including a presentation titled 'Love, Hate and Crocodiles; Alternatives to being dinner'; 'Yuwalk Dhawu – Language – the voice of science'; and 'Serious learning serious fun – integrating science, sustainability and cross curriculum priorities'.

CONASTA 68 will celebrate the successes of science, particularly Australian science, and will explore the vital role of science in our future through a selection of over 120 hands-on workshops presented by teachers, researchers and science professionals and keynote presentations by eminent Australian scientists and researchers.

Escape the winter and join your fellow educators including primary teachers, secondary teachers, pre-service teachers and laboratory technicians as they come together in a spirit of learning, discovery and camaraderie.

Register online now: www.conasta.edu.au

SASTA Member Events

Cleland Wildlife Park Teacher Excursion (FREE)

Saturday 25 May

Time: 10.00am - 12.00pm

Venue: Cleland Wildlife Park, 365 Mount Lofty Summit Road, Crafers

Cleland Wildlife Park in collaboration with SASTA is proud to offer a guided and hands-on teacher excursion to the park. **Teachers that book into this event through SASTA will have free admission on the day and a guided 2-hour wildlife experience.** The aim is to introduce Cleland Wildlife Park to you and showcase the park as a science education centre and excellent choice for an excursion venue for your students.

The program will start with an overview of the learning experiences available to teachers and students that come to the park. You will meet wildlife from the teaching collection and experience some of the interactive and engaging educational opportunities available for students. You will be expertly guided through the park by Cleland's Education Officer to **explore and interact with wildlife as you learn about Cleland's core business of conservation, biodiversity and sustainability** and have the opportunity to ask any questions you may have about the education programs.

You will be given a teacher pack with all the information you need to book your excursion. This information includes the facilities available, curriculum links, available exhibits and interactive hands-on sessions. Cleland Wildlife Park is an ideal learning environment for students as they connect with animals in their natural environment.

We encourage you to make a day of it and bring the family. Each family member will receive a discount on the admission price with adults @ \$21 and children @ \$11. There is also a lovely café if you wish to have lunch or coffee at the end of your visit.



Escape Mr Johnson's Science Class (FREE)

Tuesday 28 May

Time: 5.00pm - 6.00pm

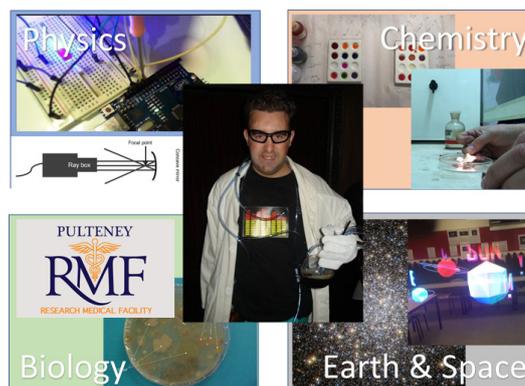
Venue: Pulteney Grammar School, Science Labs

Come to Pulteney Grammar School and use your Middle School Science knowledge and understanding and the clues provided to progress through a series of science labs and solve the final puzzle to escape from Mr Johnson's Science Class.

The 'Escape Game' will take place on **Tuesday 28 May at Pulteney Grammar Science Labs starting at 5:00pm and expected to be solved by 6:00pm.** You will progress through a series of challenging rooms focussing on Physics (Arduino, Makey-Makey and Light boxes), Biology (Body Systems and Doctor for a Day), Earth and Space (Astronomy and Space Quest), and Chemistry (Acids, Bases and Indicators), with a final puzzle to link them all together.

You are encouraged to bring a device to enter answers to a Google form, but the whole solution can be solved with just your brain and the clues available. This works best in teams and it is best if you can bring along a buddy to help you (on the day and when trying to set it up, back at school), but you can team up with other participants on the day.

Upon completion of the game, you will be provided with a pack of resources that could allow you to set up your own game in your school. Although we will have hands on approaches to all the experiments, the resource packs can be completed without equipment, or augmented with the apparatus available at your school.



Limited places available! Bookings essential - www.sasta.asn.au

Oliphant Science Awards

Great opportunities for learning through science

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)

New and Country Schools Incentive

Support for new schools and country schools' participation:

Schools who have not participated in the past five years and country schools seeking assistance for registration fees are eligible to apply. Applicants have the opportunity to enter the Oliphant Science Awards by applying for a grant of up to \$200.00 towards student registration fees.

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

Applications close Friday 24 May 2019

Apply online at www.oliphantscienceawards.com.au

2019 Oliphant Key Dates

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 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 12:00pm - 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.

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 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



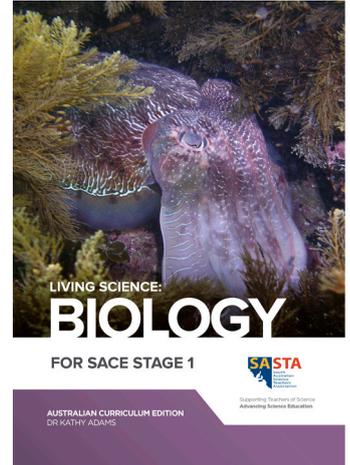
Living Science: Biology

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!

EMPOWERING TOMORROW'S SCIENCE LEADERS



**APPLICATIONS CLOSE 31 MAY 2019
EQUITY SCHOLARSHIPS AVAILABLE**

NYSF 2020 YEAR 12 PROGRAM

Lab Visits ♦ Workshops ♦ Lectures ♦ Social Events ♦ Cutting Edge Science ♦ Networking

CELEBRATING 36 YEARS IN 2019



Applications are currently open for 2020 program
Students currently studying in Year 11 are eligible to apply for the 2020 Year 12 Program held in January for additional information go to www.nysf.edu.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 new 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**

- 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 for Stage 1 & 2; and
- Topic test for each chapter

Order online at www.sasta.asn.au

Second Edition - \$54 each



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

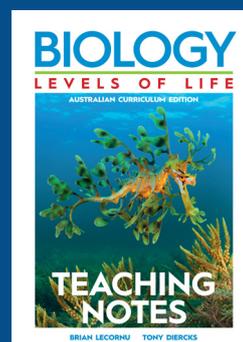
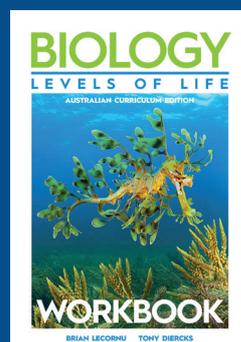
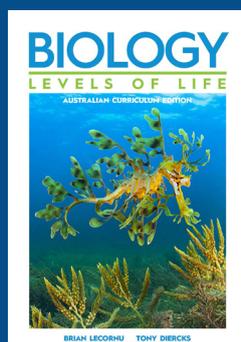
\$23.95

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

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.



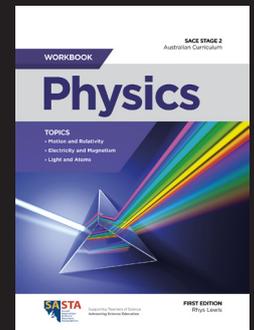
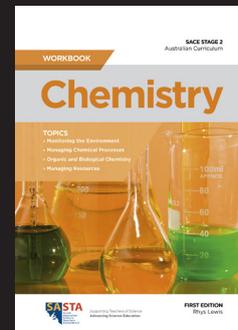
Stage 2 Science Workbooks

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**

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

2019 SASTA Study Guides

All SASTA Study Guides are \$29 each, available June 2019

Biology

Chemistry

Nutrition

Physics

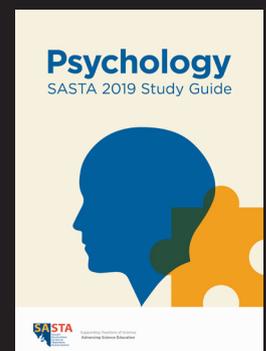
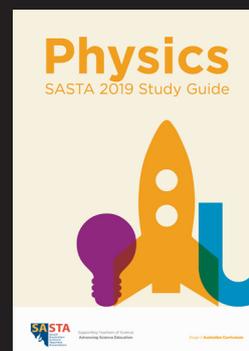
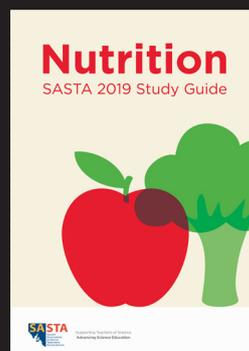
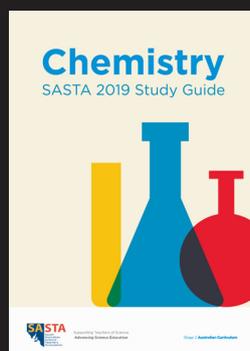
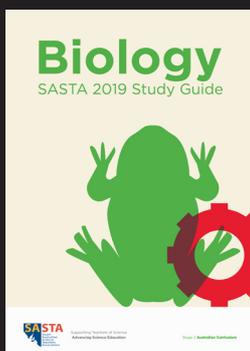
Psychology

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