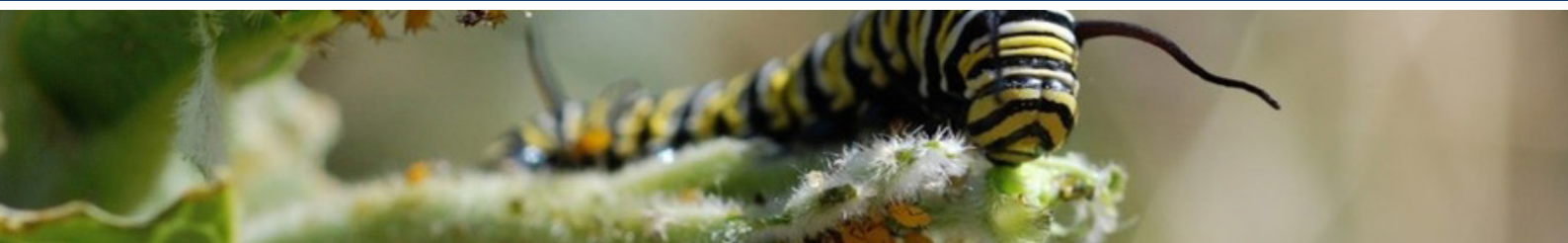




February 2021

Newsletter



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Upcoming Events

SASTA Annual Conference

12-13 April 2021, Pulteney Grammar School

Call for workshops close 7 February. See page 4 for details.

Teachers New to Teaching Stage 2 Science

Friday 12 February 2021

- **Biology** – Kathy Adams (Horizon Christian School)
- **Physics** – Michael Smith (Concordia College)

Friday 19 February 2021

- **Chemistry** – Glen Arthur (SACE Board of SA)
- **Nutrition** – Lisa Cibich (Gleeson College) & Elizabeth Arthur (Nazareth Catholic College)

Monday 1 March 2021

- **Psychology** – Carolyn Pinchbeck (Xavier College) & Jessica Mosca (Thebarton Senior College)
- **Scientific Studies** – Lois Ey (SACE Board of SA)

See page 8 for details.

Purposeful Science (Primary) Workshop - Take a dive into the Department for Education's Science Curriculum resources

Monday 15 March 2021, Education Development Centre

See page 8 for details.



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Supporting Teachers of Science | Advancing Science Education

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Newsletter copy deadlines 2021

(Advertising deadlines one week earlier)

Edition	Deadline
May	16 April
August	16 July
November	15 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.

The cover photo was taken by Summer Winwood, Concordia College as a photography entry in the 2020 Oliphant Science Awards. Summer placed 2nd in Year 7-8 for her entry 'New Life', which focussed on the butterfly life cycle.

From the President



A big welcome to all of you to 2021. I am sure everyone is hoping that many of the difficult issues we faced in 2020 are behind us. So, let's look forward to 2021 with optimism, enthusiasm and positivity.

Through the challenges and set-backs of 2020 there have been some stunning success stories in science.

I am amazed at the news that COVID vaccines are currently being rolled out all over the world. This has been possible partly because processes that used to take five years have been fast-tracked. Another feature is the incredible amount of cooperation seen across the scientific world, where researchers have generously shared their findings in a way that supported the research of others. In addition, the use of mRNA vaccines has sped up the progress.

Researchers have been studying and working with mRNA vaccines for many years. A big advantage is that they can be developed in a laboratory using readily available materials and their standardised processes mean they can be readily scaled up for widespread use.

More traditional vaccines trigger an immune response when a weakened or inactivate pathogen is injected into our bodies. By contrast, the COVID mRNA vaccine contains strands of genetic material called mRNA inside a special coating. The coating protects the mRNA from enzymes in the body that would otherwise break it down. It also helps the mRNA enter the immune cells in the lymph nodes near the vaccination site. These cells are able to use the mRNA to manufacture the spike protein found on the surface of the virus. When this foreign protein stimulates our body to mount an immune response against the virus, our bodies will be primed to protect us against future infection.

At the time of writing, over 40 million people had been vaccinated against COVID. Although some current vaccines have limitations, like the Pfizer mRNA vaccine requiring refrigeration at -70°C, I am confident that our rapidly developing scientific knowledge will ensure a successful vaccination regime. This in turn will lead to a positive and productive future for all of us in Australia.

Good luck to everyone for 2021. I wish you well in both your personal and professional endeavours during the coming year.

Jane Wright

Have you renewed your membership for 2021?

Thank you to those who have recently joined SASTA or renewed their membership for 2021. Professional learning events are already under way, so if you wish to register for events at members' rates then renew your membership quickly if you haven't done so! You can only join or renew your membership via the SASTA website, so whether you're joining as an individual or corporate member, you will first need to create a website user account if you haven't already done so.

Individual members

Complete the online form and pay (credit card or EFT)! It's that simple. There are many benefits to being an individual member – greater discounts, voting rights, and the chance to be on the SASTA Board among others! See the website for more information.

Corporate members

Corporate membership must be renewed by your school's primary contact person. Select "Payment by bank transfer" to be emailed a tax invoice which you can forward to your school's finance department for payment. If you're not the primary contact person, you will need that person to make sure that your SASTA website account is listed under your school's corporate membership in order to take advantage of any discounts. **Please note membership only takes effect once the invoice has been paid.**

If you have any questions, see the Membership FAQ on the website or contact the SASTA office.



Join primary and secondary teachers and other members of the science education community at SASTA's 2021 Annual Conference, 12-13 April at Pulteney Grammar School in Adelaide.

The theme of the conference is 'Science: Saving the Planet' and aims to inform and inspire delegates with current research and practices in the fields of science, as well as in the classroom.

As usual, the program is shaping up well with a broad program of seminars, discussions and professional learning workshops, and hands-on activities.

Keynote speakers

Monday's keynote presentation will be from **Prof. Chris Daniels, the Director of Cleland Wildlife Park and CEO of the International Koala Centre of Excellence**. Chris wholeheartedly agrees with a quote by French explorer and conservationist Jacques Cousteau who famously said, "You can't save what you don't love, and you can't love what you don't know." Chris will talk about how zoos and wildlife parks need to engage and educate the public about the necessity and practice of conservation, especially in the face of growing 'anti-zoo' sentiment. Chris will talk about how this challenge is leading to many new and exciting methods for delivering educational outcomes in environmental science and conservation.

Tuesday's keynote presentation will be from **Dr Hannah Brown**, who is an Adelaide born and educated, internationally trained, researcher-turned-leader and communicator who leads **Science Strategy and Operations at the Victorian Heart Institute**. Having trained and worked as an academic, she now sits at the interface between science and the public,

helping to turn ideas into impact through storytelling. Hannah's talk will focus on how in a world where it is increasingly difficult to identify 'fake news', communicating and telling stories with impact is key and how using the science of communication and marketing to share science messages and tell science stories can make people want to save the planet.

Cutting Edge speakers

Cutting Edge speakers include:

- **Dr Danny Wilson** who is researching Malaria biology and parasitology at the University of Adelaide
- **Dr Marnie Winter** who is researching biomedical engineering at the University of South Australia

They will be joined by other Cutting Edge speakers.

Concurrent workshops

The call for workshop presentations closes on Sunday 7 February. The complete program of concurrent sessions will be made available on the conference website once compiled.

Trade display

And there will be the usual trade display so that you can check out the latest books, resources and other materials for your classroom or school.

So, come along in April to network with others and see what you can learn in order to teach and inspire your students! Registration will open soon!

Program

Monday 12 April	
9.00 am	Welcome & SASTA Medal Presentation
9.30 am	Keynote by Prof. Chris Daniels
10.35 am	Morning Tea & Exhibition
11.10 am	Workshop Session 1
12.15 pm	Workshop Session 2
1.15 pm	Lunch & Exhibition
2.05 pm	Panel Discussion
3.25 pm	Workshop Session 3
4.30 pm	Happy Hour
7.00 pm	Conference Dinner

Tuesday 13 April	
8.45 am	Welcome & Awards Presentation
9.10 am	Keynote by Dr Hannah Brown
10.10 am	SASTA AGM
10.40 am	Morning Tea & Exhibition
11.15 am	Cutting Edge Session A
12.20 pm	Cutting Edge Session B
1.20 pm	Lunch & Exhibition
2.10 pm	Workshop Session 4
3.15 pm	Workshop Session 5
4.15 pm	Happy Hour

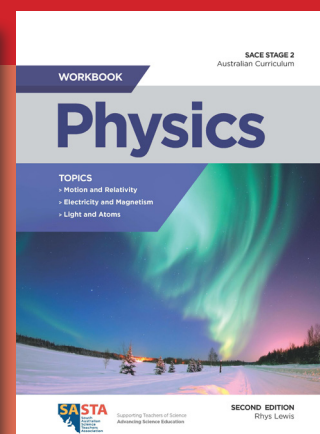
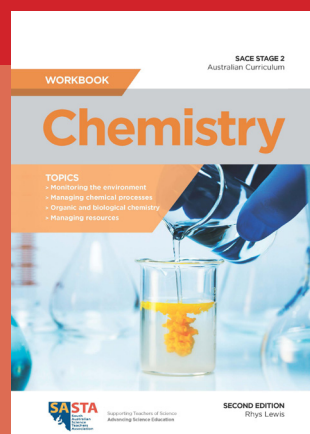
See the website for program and registration information:
<http://bit.ly/SASTAConf2021>

SACE Stage 2

ALL NEW

Second Edition
 Biology, Physics
 & Chemistry
 available now

\$59.00 each



SASTA is pleased to announce the arrival of the Second Editions of our workbooks for Stage 2 Chemistry and Physics.

Some of the features of the second edition workbooks include:

1. The content has been updated to match the most recent subject outline
2. Design and layout have been updated extensively for a neater and more consistent look throughout the book
3. Hundreds of new questions have been added that were not featured in the first edition
4. The book now features questions that assess Science as a Human Endeavour (SHE)
5. All explanations have been made more concise to minimise the time taken to grasp the concepts
6. All formulae have been explored using useful examples that incorporate real-world applications
7. Solutions have been reviewed and simplified in some areas
8. The number of questions supplied for each concept has doubled and, in some sections, tripled and quadrupled to reinforce student understanding
9. Solutions have been written more concisely for simpler absorption by students
10. Many more higher order thinking questions added to stretch high achieving students
11. Enough questions have been provided for each concept that a teacher can set 30-60 minutes worth of questions each lesson for students to complete.

View sample pages and order online at <https://www.sasta.asn.au/resources>

2021 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, 12-13 April 2021.

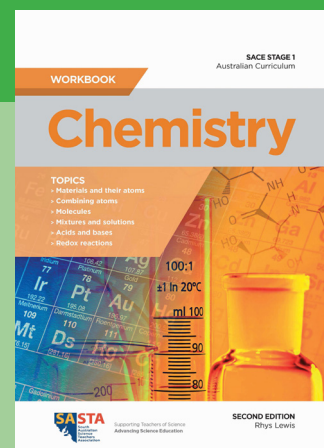
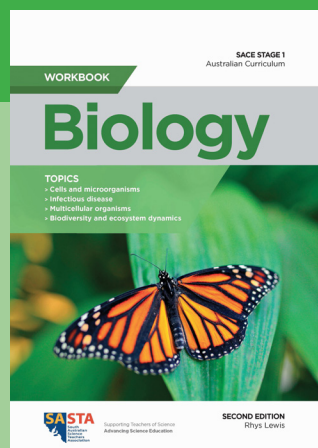
Nominations close Friday 5 March 2021 at 4.00pm. Online nominations can be completed at www.sasta.asn.au/about_us/awards

Notice of Annual General Meeting

Notice is given that the 2021 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 13 April, commencing at 10.10 am for the purpose of transacting the items of business listed below.

Agenda

1. Welcome and Apologies
2. Minutes of the 2020 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



SASTA Stage 1 Workbooks (second edition)

These workbooks cover all topics outlined in the SACE curriculum in an easy to read format with colour illustrations and diagrams throughout.

Call for SASTA Board nominations 2021

South Australian Science Teachers Association
ABN 22 938 317 192

Closing date: 5.00 pm 15 March 2021

Call for nominations

All members of SASTA are hereby notified of a call for nominations for four (4) positions on the Board.

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.

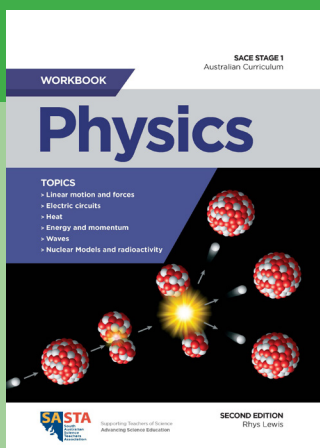
Position description and nomination form

A Board Member position description and nomination form is available on the SASTA website in the 'Members Area'.

NOTE: 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 or email kate@sasta.asn.au if they require further information.



- Over 300 full colour illustrations and diagrams
- Over 250 problems with worked solutions
- All questions are mapped to the new performance standards
- Topic test for each chapter.

SACE Stage 1 Resources

Stage 1 Trial Exams

Mid-year and end-of-year exams are now available for Biology, Chemistry & Physics

2021 trial exams have been rewritten to include:

- A range of questions that cover nearly every statement on the subject outline.
- A blending of questions that incorporate concepts from different sections of the course to demonstrate connections between different areas of the course.
- Science as a human endeavour (SHE) questions that allow students to develop their knowledge and understanding and explore the connections between science and society.
- Fully editable documents designed for use as formative or summative tasks.
- Fully worked solutions for each question including a lengthy response to the SHE questions

Professional Learning for Term 1 2021

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 12 February

Presented by Kathy Adams
(Horizon Christian School)

Physics

Friday 12 February

Presented by Michael Smith
(Concordia College)

Chemistry

Friday 19 February

Presented by Glen Arthur
(SACE Board of SA)

Nutrition

Friday 19 February

Presented by Lisa Cibich (Gleeson College)
& Elizabeth Arthur (Nazareth Catholic College)

Psychology

Monday 1 March

Presented by Carolyn Pinchbeck (Xavier College) & Jessica Mosca (Thebarton Senior College)

Scientific Studies

Monday 1 March

Presented by Lois Ey (SACE Board of SA)

Purposeful Science - Take a dive into the Department for Education's Science Curriculum resources

Monday 15 March

Education Development Centre, Hindmarsh
9.00 am – 3.00 pm

Presented by Meegan Ballantyne (Department for Education) and Kate Dilger (SASTA)

This workshop will unpack an example unit from Year 5, looking at the Why? How? & What? of the unit of work, with the aim of teachers being able to implement the units in their classrooms as they are released.

Teachers will be engaged in purposeful activities that build pedagogical tools as well as an understanding of how to connect classroom learning to the Australian Curriculum.

The workshop will also take teachers through the development of the Scope and sequence documents. These set out what students are expected to learn and when, supporting teachers to appropriately sequence their classroom content in alignment with the Australian curriculum.

Professional learning calendar

Start planning your professional learning for 2021! You can download the SASTA Professional Learning Calendar as a PDF on the website.

Go to www.sasta.asn.au/professional_learning

Registration fees

Personal Member	\$145
SASTA Student Member	\$50
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

2020 SASTA Honour Award

Congratulations to Yvonne Zeegers, the 2020 SASTA Honour Award Recipient!

Honour Awards are designed to recognise a SASTA member's contribution to SASTA. Yvonne's long and distinguished contribution to SASTA relates to the functions of both the Board and the Awards subcommittee. Yvonne has both promoted and supported the teaching of science in schools and has fostered the professional development of science teachers throughout her career.

A few words from Yvonne:

I would like to sincerely thank the SA Science Teachers Association (SASTA) for this award. It is indeed an honour, and yes, it was a genuine surprise!

Throughout my career, I have been a teacher, and SASTA has been a big part of this.

I have been a classroom teacher, President of the former SA Primary Science Teachers Association, a state curriculum adviser in primary Science and Technology, a pre-service advisor for AusAID, an initial teacher educator (ITE) and importantly, since my fourth year of classroom teaching, as an early career teacher, a member of SASTA.

Subject associations such as SASTA connect the teaching profession. Not only has SASTA offered me professional learning opportunities, resources and a range of teaching related opportunities, but significantly it has provided me with a forum for networking with like-minded colleagues - something essential for our early career teachers. At a time when virtually everything we could want to assist our teaching is accessible online in some form, SASTA has provided me the human element. Over the years I am proud to have been both a contributor to, and a receiver of SASTA's range of offerings at different times through their conferences, Professional Learning workshops, and Board membership. Each of these has incorporated sharing, critiquing, debating, collegiality, and an opportunity to develop lifelong friendships.

My thanks to SASTA for continuing to provide each of us with such enriching opportunities.



Biology: Levels of Life

Brian LeCornu and Tony Diercks

Biology: Levels of Life – Australian Curriculum Edition Textbook

\$63.40

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. Updated to match minor changes in the subject outline for 2020.

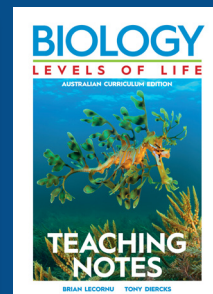
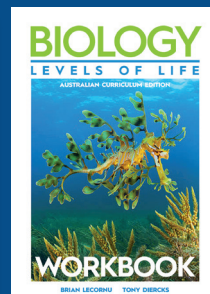
Biology: Levels of Life – Australian Curriculum Edition Workbook

\$24.40

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. There are teaching tips throughout as well as additional information. Answers to questions in the Workbook will assist teachers in explaining concepts to students.





It's time once again for School Coordinators to register and download the information booklet from the SASTA Oliphant Science Awards website:

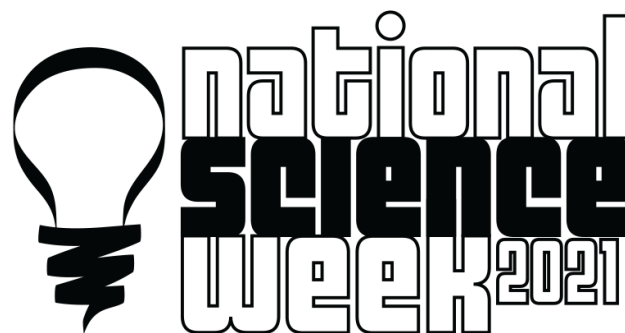
www.oliphantscienceawards.com.au.

The website and booklet have everything you need to know about this year's competition, including registration fees, deadlines, rules, forms, and titles (where relevant).

Please note that each school (or school campus) can only have ONE registered Coordinator.

Key dates

- **Thursday 3 June:** Student registrations close
- **Friday 4 June:** Judges registrations close
- **Thursday 1 July – Wednesday 21 July:** Multimedia, Science Writing, Scientific Inquiry entries and Reports for Programming, Apps and Robotics to be submitted online
- **Saturday 7 August:** Programming, Apps & Robotics Judging Day
- **Thursday 19 August:** Crystal Investigation, Models & Inventions, Photography, Games & Poster entries to be delivered. Submission details provided closer to the date.
- **Saturday 21 August:** Final Judging Day
- **Friday 17 September:** Presentation Ceremony (subject to change)



This year, National Science Week is 14–22 August with the theme **Food: Different by Design**.

This theme will honour the United Nations International Year of Fruits and Vegetables and the International Year of Creative Economy for Sustainable Development. Food: Different by Design will cover a broad range of areas in food production and sustainable agriculture, enabling students to explore topics such as biosecurity, food technology and laboratory-developed foods. Scientific development will be at the core to the theme, with other hands-on projects for students to explore.

School grants from ASTA

Grants of up to \$500 will be awarded to help support National Science Week activities in schools. The annual grant round is for all schools (pre-schools to senior secondary) to help them conduct a STEM related activity in Science Week.

No dates for the applications have been announced as yet, but usually open around mid February and close in April. Please keep an eye on the National Science Week website: scienceweek.net.au/schools/ and the ASTA website: asta.edu.au/programs/natscienceweek for more information

Resource Book

The 2021 Resource Book of Ideas for National Science Week will offer teachers and students the opportunity to investigate a diverse range of topics about food and agriculture within a sustainability framework. Keep an eye out on the ASTA website for further details.

asta.edu.au/programs/natscienceweek

Living Science: Biology

Teachers will find these textbooks an invaluable resource for planning and developing student knowledge as it has comprehensive coverage of the science understandings of the Stage 1 & 2 courses. 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.

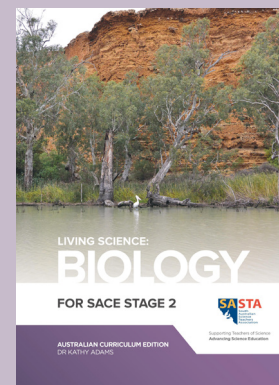
'SHE Alert' boxes are connected to the four SHE Key concepts: Communication and Collaboration, Development, Influence, and Application and Limitation.

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 books and at the end of each chapter. The Stage 1 textbook also has a list of possible Deconstruct and Design ideas at the end of each chapter, which could be used by the teacher to develop tasks. **Solutions now available for all the questions in the Stage 1 textbook.**



\$49.00 each



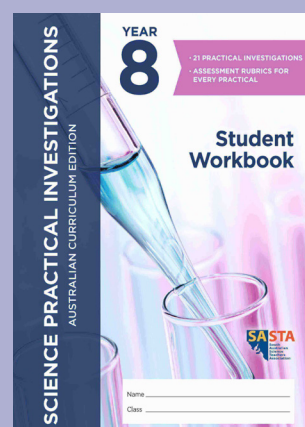
\$54.00 each

STUDENT WORKBOOKS



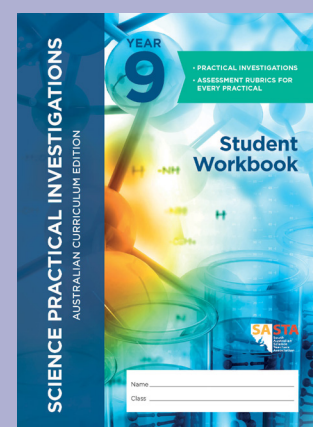
These write-in workbooks guide students through practical investigations, encouraging them to practice and enhance their inquiry skills, design procedures and answer questions about their learning.

- Explores 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
- Emphasis on science inquiry skills
- Assessment rubrics for each practical
- These workbooks reflect the current emphasis on STEM skills through the inclusion of Engineering Design Challenges



\$18.50 each

minimum order 20 copies



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, and 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.



\$39.00 each

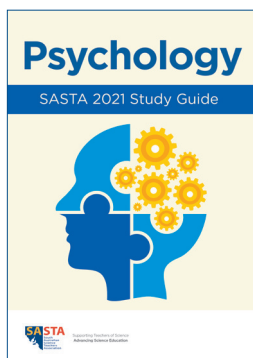
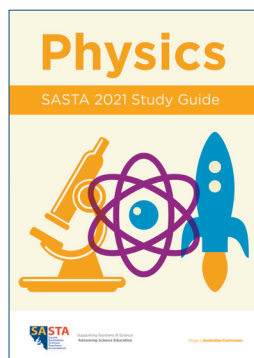
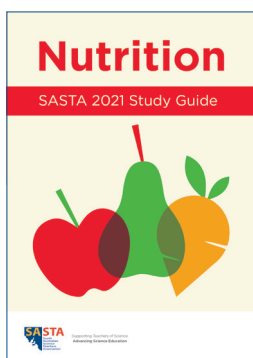
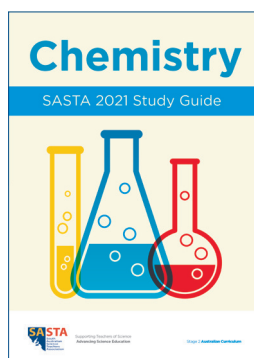
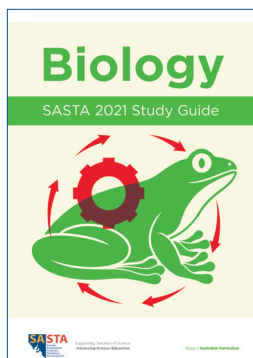
Available from sasta.asn.au

2021 STUDY GUIDES

Pre-order your copies now to ensure you don't miss out!

SASTA Study Guides are the complete resource for students preparing for Stage 2 SACE exams. These guides include questions with worked solutions covering each topic of the Subject Outline and address all sections of the exam.

\$29 each
+ delivery
or collect
orders from the
SASTA office



All new for 2021:

- Suggested solutions to the 2020 exams.

Biology

- All sections reviewed and any parts to questions beyond the scope of the course have been removed or modified.
- New questions have been added to all sections.
- New SHE questions added.

Chemistry

- All sections reviewed and any parts to questions beyond the scope of the course have been removed or modified.
- New questions in most sections.
- Codes to indicate all SIS and SHE parts to questions.
- Any parts of questions that are from Stage 1 have been identified (Stage 1 Science Understanding).
- SHE section with 5 new questions and extensive potential responses.

Nutrition

- The Study Guide reflects the New Course for Stage 2 Nutrition to be taught in 2021.
- All sections reviewed and any parts to questions beyond the scope of the course have been removed or modified. New questions added to support the new course outline.
- Chapters have been adjusted to be more user friendly and reflect the new topics.
- Science as a Human Endeavor (SHE) has been added with explanations and guidelines as well as some practice questions.
- Preparation for Investigations and Exams has been reviewed and updated to reflect the advice from SACE Lead Practitioners.

Physics

- Revision questions updated and new questions added.
- Suggested solutions to the 2020 examination.
- Solutions to questions updated to align with course requirements and expectations.
- Updated formatting of questions and solutions.
- All sections reviewed to align with the 2021 Subject Outline.

Psychology

- All sections reviewed.
- Additional test questions provided for all topics.

Available to pre-order at sasta.asn.au