SASTA OLIPHANT
SCIENCE AWARDS

SOUTH AUSTRALIAN SCIENCE TEACHERS ASSOCIATION

2024

ORGANISED BY

SOUTH AUSTRALIAN
SCIENCE TEACHERS
ASSOCIATION

SASTA
South
Australian
Science
Teachers
Association

Entry and registration
details available at:
www.oliphantscienceawards.com.au

KEY DATES 2024

17 May
Student registrations close

7 June - 28 June
Citizen Science, Multimedia, Science
Writing and Scientific Inquiry
projects and Programming, Apps &
Robotics reports submitted online

22 July - 26 July
Models & Inventions and Crystal
Investigation reports submitted
online

27 July
Programming, Apps & Robotics
Judging Day

30 July
Poster, Photography, Models &
Inventions, Games and Crystal
Investigation project delivery

2-4 August
Open Day at Science Alive!

SA'S LARGEST SCIENCE COMPETITION

ENTRY INFORMATION

Information correct as at 16 November 2023

Sir Mark Oliphant

The South Australian Science Teachers Association has been privileged to have had Sir Mark Oliphant as our Patron for the SASTA Oliphant Science Awards since their inception in 1981.

Like many of the recipients of these awards, Sir Mark was born in South Australia and received his primary and secondary education in state schools here. An outstanding student, Sir Mark investigated a number of career pathways and eventually settled on the pursuit of science at the University of Adelaide. Sir Mark showed a love of tinkering and invention from an early age, and it was in the science laboratories in Adelaide that he started to make his own scientific apparatus. He was to become one of the leaders in the design and construction of revolutionary apparatus, including particle accelerators used to investigate the structure and interactions of the nuclei of atoms.

In 1927 a scholarship took Sir Mark to the famous Cavendish Laboratories in Cambridge, UK where he worked with Lord Rutherford, who was a pioneer in atomic physics. Together with other great scientists including Fermi, Lawrence and Oppenheimer, Sir Mark created the brave new world of nuclear physics. His expertise in this area was to lead Sir Mark to the Manhattan Project in America and to his participation in the development of the first atomic bomb. Sir Mark was always a champion of the peaceful uses of atomic energy, and in 1937 accepted his first professorship as head of the Physics Department at Birmingham University where he was to continue to push the boundaries of knowledge of nuclear physics. In this year he was elected as a 'Fellow of the Royal Society'.

In 1955 Sir Mark's reputation as scientist, research director and administrator were well established in the scientific community. This, together with his declared interest in establishing world class educational research facilities in Australia, led Sir Mark back to Australia at the request of the Government. In this year he founded the Research School of Physical Sciences at the newly established Australian National University in Canberra.

A clear demonstration of his ongoing support of science and science education was provided to the science community in our state when Sir Mark agreed, in 1981, to lend his name as patron of the SASTA Oliphant Science Awards. Sir Mark's legacy will live on in many ways, not least through the thousands of students and teachers who participate in these awards annually. Of special significance is that Sir Mark, through his love of tinkering and invention, made the perpetual Oliphant Trophy himself.

Monica Oliphant, AO

Monica Oliphant is the current Patron of the SASTA Oliphant Science Awards. She has had a distinguished career as an energy research scientist and consultant specialising in residential renewable energy and energy efficiency.

Monica worked 18 years for the electricity utility ETSA as a Research Scientist in the areas of renewable energy and energy efficiency and was involved in the South Australian Government's wind resource assessment program in the late 1980s which put South Australia in a prime position for wind energy investment in the State that started about 15 years ago.

Monica is an Adjunct Associate Professor at the University of South Australia and a University Fellow at Charles Darwin University. She also runs her own Consultancy, Monica Oliphant Research Scientist. In presentations she has been unashamedly proud of the status of renewable energy in South Australia and the work being done at the University of South Australia in this area.

She received an AO in the 2015 Queen's Birthday Honours List in recognition of her work in Renewable Energy and was named 2016 Senior South Australian of the Year.

Monica attends the Oliphant Science Awards Presentation Ceremony each year to speak about Sir Mark Oliphant's legacy and to present the Oliphant Trophy.

Introducing the SASTA Oliphant Science Awards

The South Australian Science Teachers Association (SASTA) has conducted the Oliphant Science Awards every year since 1981.

Aim

The SASTA Oliphant Science Awards will stimulate students and enable them to:

- Undertake and report on scientific investigations in real life settings
- Explore their interests, skills, talents and creativity
- Develop their science knowledge and understanding
- Show their work to a broader audience
- Motivate themselves to conceive and complete an independent project
- Involve themselves in scientific and technological discovery and the application of these processes and knowledge to themselves and their world.

The SASTA Oliphant Science Awards

- Raise the profile and understanding of science in schools
- Attract thousands of entries from over one hundred schools each year
- Allow students and teachers to explore how curricular science can be extended as part of the greater scientific enterprise
- Support the implementation of the Australian Curriculum: Science, and its emphasis on science inquiry and the doing of science, and support teachers in assisting their students to achieve these curriculum outcomes
- Support current inquiry based pedagogical initiatives and practices in teaching and learning
- Promote teamwork and communication among entrants and among the many teachers and parents who volunteer their time to encourage their students
- Raise awareness of the many careers made possible by studies in science
- Support the view that science promotes innovation in thinking and acting, and the development of novel questions and solutions
- Encourage students to become involved in science in creative and exciting ways extending their skills and expertise in science
- Support the application of new technologies including ICTs in learning
- Foster a greater awareness and appreciation of the role played by science and technology in our daily lives
- Offer prizes in cash or in kind to a value in excess of $20 000.

The SASTA Oliphant Science Awards enable students to explore science and technology through

- Inquiry and investigation
- Innovation
- New technologies
- Writing
- Art and photography

The wide spread of categories encourages participation by all students, irrespective of gender, culture, socioeconomic group or school location.

The SASTA Oliphant Science Awards are open to primary and secondary students in South Australia.

Information in this booklet was correct at the time of publishing, please check the website regularly for updated information.

General information for teachers and students

The SASTA Oliphant Science Awards are a wonderful opportunity for school students from Reception to Year 12 to develop their interests in science through a range of categories to suit a wide variety of abilities and interests.

Only the SASTA Oliphant Science Awards Coordinator at a school (a teacher or other staff member) can register students for the competition. Only one Coordinator can register for a school, but multi-campus schools can register a Coordinator for each campus.

Students must enter in the appropriate year level but may enter any category (or in multiple categories) as many times as they wish. (Please note that all entries are judged on their individual merits, so students should be advised that two brief projects are not as good a single comprehensive one.)

Year levels
R–2, 3–4, 5–6, 7–8, 9–10, 11–12

Categories
- Citizen Science (sponsored by the University of Adelaide)
- Crystal Investigation
- Games
- Models & Inventions (sponsored by the Australian Institute of Energy)
- Multimedia
- Photography (sponsored by SA Museum)
- Posters
- Programming, Apps & Robotics (sponsored by Defence Science and Technology Group)
- Scientific Inquiry (sponsored by the University of South Australia)
- Science Writing (sponsored by Flinders University)

Individual or group
Only individual students can enter Posters or Science Writing.

Students may enter all other categories as individuals or in groups of 2 or 3 students (maximum).

Only Class / school groups may enter the Citizen Science category.

Registration
By registering, all entrants agree to the conditions of entry (see page 6).

Students must register their entries through their school's SASTA Oliphant Science Awards Coordinator.

The OSA Coordinator will enter the details of the entries from their school on the OSA website: www.oliphantscienceawards.com.au.

Further details on the registration process are on page 33.

All registrations are due by close of business Friday 17 May (Week 3).

Participating schools will be invoiced based on the number of entries that have been registered by 5pm on Wednesday 5 June 2024. This invoice will be emailed directly to the school coordinator to be forwarded onto the school's finance department for prompt payment.

Please be aware that there will be no credit or refund should any of your students fail to submit their project(s). However, should one (or more) student fail to enter, another student / project may be entered in its place.

If you need assistance registering entries, please contact the SASTA office: 8354 0006 or office@sasta.asn.au.

Entry fees

Individual entries: $16.00 per entry
- $3.00 discount per entry for SASTA members
- $5.00 discount per entry for Department for Education schools or Catholic Education schools

Group Entries*: $24.00 per entry
- $5.00 discount per entry for SASTA members
- $5.00 discount per entry for Department for Education schools or Catholic Education schools

no more than 3 students per group

NB: it is possible to qualify for both discounts for individual and group entries. The discounts will be reflected when your school is invoiced.

Citizen Science Entries: $24.00 per class or group entry (no discounts)

All prices listed include GST.

Prizes

- The overall winner receives the Oliphant Trophy, which was made by Sir Mark Oliphant. The trophy is engraved with their name and kept for one year. The trophy is replaced in the following year with the Oliphant Medal, which is the student's to keep.
- Prizes are awarded for 1st, 2nd and 3rd in each year level group for every category. There are also sponsors' prizes for individuals and schools.
- All students who submit a project receive either a Certificate of Participation, a Highly Commended certificate (outstanding entries) or a prize certificate (winners).

Key dates

- **November 2023:** New Schools Incentive applications open
- **November 2023:** Country Schools Bursary applications open
- **November 2023:** Regional Student Travel Fund applications open
- **Monday 15 January:** Coordinator & student registrations open
- **Monday 22 February:** Navigating the Oliphant Science Awards in your School Webinar
- **Sunday 24 March:** New Schools Incentive & Country Schools Bursary applications close
- **Friday 17 May:** Student registrations close
- **Friday 17 May:** Judges registrations close
- **Friday 7 June:** Regional Student Travel Fund applications close
- **Friday 7 June – Friday 28 June:** Citizen Science, Multimedia, Science Writing and Scientific Inquiry entries and Reports for Programming, Apps and Robotics MUST be submitted online.
- **Friday 5 July - Sunday 21 July:** Round 1 judging (Citizen Science, Multimedia, Science Writing and Scientific Inquiry)
- **Monday 22 July – Friday 26 July:** Crystal Investigation and Models & Inventions reports / risk assessments MUST be submitted online. Supporting documents for Games may also be submitted.
- **Saturday 27 July:** Programming, Apps & Robotics Judging Day (by appoinment only)
- **Tuesday 30 July:** Crystal Investigation, Games, Models & Inventions, Photography and Poster entries to be delivered.
- **Wednesday 31 July:** Round 2 judging (Crystal Investigation, Games, Models & Inventions, Photography and Posters)
- **Friday 2 – Sunday 4 August:** Open Day at Science Alive!
- **Monday 5 August:** Project Collection
- **Friday 18 October:** Presentation Ceremony

Conditions of entry

- Appropriate acknowledgment of assistance. It is anticipated that students may receive assistance in planning and developing their projects. Each entry is to clearly identify which aspects of the project were devised and carried out by the student alone and which aspects received assistance. The type and degree of any assistance should also be clearly noted. If the details of such assistance are not clearly stated, then the judges, in judging the entry, will use their discretion and experience of working with students in making judgments.

- It is essential that all entries are suitably packaged for delivery, and that all parts of entries are clearly marked using your registration number (see Identification Label or Cover Sheet), name and School. SASTA cannot accept responsibility for goods damaged due to inadequate packing, or for any damage, loss or theft of goods. Therefore, SASTA discourages the use of valuable materials / equipment as their safety cannot be guaranteed.

- There will be no space to store project packaging at the new Open Day venue. We ask that projects are set up and packaging taken with you after delivery.

- Live animals may be used in Scientific Inquiry to obtain results provided that the experiment meets with the Animal Ethics Committee requirements as they apply to schools. SASTA cannot care for live animals or plants so will not accept these as part of any entry delivered for judging.

- All research activities, individual or group, in the classroom or outside the classroom, must be conducted in an ethical manner. Please refer to SASTA's Ethical Conduct of Research Policy.

- An entry will remain the property of the entrant. SASTA reserves the right, beginning with the submission of the entry and continuing until 31 December five calendar years later, to use all or a portion of the entry or images of an entry, for the publicity or promotion of SASTA or of the SASTA Oliphant Science Awards unless a patent exists or has been applied for. SASTA may also allow a sponsor to use such material for the sponsor's promotional purposes. Where a patent exists or has been applied for, the use of the entry or images of the entry may be negotiated with the entrant.

- By submitting your entry you agree that your entry or a copy of your entry can be used and/or displayed by SASTA to promote the Oliphant Science Awards at events, on SASTA websites and social media along with your name, school and year level, and used in part or full within the SASTA Journal or Newsletter publications.

- Photos taken of winners may be used, without seeking further permission, by the relevant sponsors, but only in their publicity of the event.

- SASTA shall have the right, but no obligation, to take any action it deems appropriate to prevent the misuse of an entry. Entrants and their parents and guardians may take reasonable steps or actions, as they deem appropriate to prevent misuse of a submitted entry.

- Whilst every attempt has been made to ensure the accuracy of the information published, neither SASTA nor the sponsors may be held responsible for any errors or omissions.

- SASTA and the sponsors reserve the right to change any awards, prizes or conditions as may in their opinion, be necessary.

- If entries are not collected, SASTA reserves the right to courier them back to your school at your expense or dispose of them if alternative arrangements are not made. SASTA cannot store uncollected entries.

- If you wish to submit your entry into another competition it is your responsibility to make duplicate copies.

- All information and entry forms are available in PDF format and can be downloaded from www.oliphantscienceawards.com.au

Information for students

How to get started

- Your own inspirations, interests and skills are the best starting point.
- Check out the many different categories in the SASTA Oliphant Science Awards. You may enter different projects into one or more categories.
- Check out previous entries in the Virtual Open Day.
- Choose a category that motivates you and will be the best at showcasing your skills and knowledge. Think about how you could capture the judges' attention in an innovative and original way.
- Look for reliable sources of information. Your school library will have many science books and magazines. There are many science and environmental organisations that have useful websites. Your science teacher may also be able to recommend places, websites or people that you could contact.
- Read the rules and the dot points about successful entries for the category you choose. These are the features that the judges are looking for in your entry. There are also valuable sponsors' prizes that are awarded if the entry meets both the category requirements and the criteria outlined by our sponsors.

How to enter

- Obtain a Registration Form from your School Coordinator, or download the Registration Form from the website.
- Return your completed Registration Form and any necessary fees to your School Coordinator.
- For group entries, only ONE Registration Form is to be completed. All group members must be named on the same Registration Form. (Note: maximum of three students per group entry; group entries are not allowed for Science Writing and Posters).
- Your School Coordinator will need to register students online (in their login area) at www.oliphantscienceawards.com.au by **Friday 17 May**. Entries may only be submitted through your School Coordinator.
- Ask your School Coordinator about the date that they need your completed entry and who will deliver and collect it from the judging location. It is recommended that schools and parents try to organise a whole school delivery and collection method.

When your entry is finished

- **Electronic submissions:** Please be sure to save your project in a recommended format (Word, pdf, ppt, link to a YouTube video) with your ID number and surname. We recommend you include your ID number and surname when saving/naming the file. You will need to include your cover sheet in your submission.
- **Physical projects:** Securely attach your Identification Label (your Coordinator will give you this) in a clearly visable position (**labels must be put on the back of Photography and Poster entries**). Please ensure that all parts are labelled with your ID number and surname.
- Make sure you have followed all the rules and presentation instructions for your category. Please be aware that any entries that do not adhere to the size and/or weight requirements where indicated may not be accepted for judging.
- Give your completed entry to your School Coordinator in time to be delivered for judging (unless your Coordinator has made different arrangements with you).
- Crystal Investigations and Models & Inventions reports / risk assessments **MUST** be submitted online prior to project delivery day.

Open Day

We're excited to partner with Science Alive! for our Open Day event again in 2024! Models & Inventions entries and winning entries from all other categories will be on display from Friday 2 August – Sunday 4 August at the Adelaide Showgrounds. There will also be a range of come and try activities as well as a full program of exhibitions and science shows on offer from Science Alive! You can check out information about Science Alive! here.

All students who enter the Oliphant Science Awards will be eligible for discounted entry tickets. More information will be available closer to the date.

Presentation ceremony

Your School Coordinator will tell you before the Presentation Ceremony if you have won an award. Please speak to your School Coordinator before contacting SASTA for information.

The SASTA Oliphant Science Awards Presentation Ceremony will include all the 1st, 2nd and 3rd placed entrants and the sponsor prize winners. Attendance at this event is by invitation only. Unfortunately, recipients of Highly Commended are not invited to this ceremony.

Citizen Science

Proudly sponsored by the University of Adelaide

What is Citizen Science?

Science needs more eyes, brains, ears and perspectives than any scientist possesses. Many great discoveries are the result of a collaboration between scientists and the community including the discovery of the Wollemi pine, a giant shark tooth, the giant Gippsland earthworm as well as new planets and a lost space craft. Projects that are currently active discover new species of insects and fungi and contribute to our understanding and protection of the environment.

Public participation in research has occurred for hundreds of years but global connectivity and the internet in particular has led to a surge of projects in various areas. Citizen science involves public participation and collaboration in scientific research with the aim to increase and translate scientific knowledge. It's a great way to harness community skills and passion to fuel our ability to understand how the world works and how to protect it.

The Competition

This category is aimed at involving whole classes or school groups in meaningful citizen science projects.

Two prizes of $500 each will be awarded to the winning entry from a Primary (R-6) group and a Secondary (7-12) group.

The project can be one that you have designed yourself or an existing citizen science project that you take part in. Think about not only what type of citizen science project your students would like to try, but also what types of projects are feasible for them to do, based on where the school is located and what you're able to do in your classroom or your school environment, what equipment you will need and researchers you could collaborate with.

Getting started:

- Start with a question linked to a real world problem or issue where having the students collect data / sharing information from their local area would help. It could be a specific local problem or a wider issue that is having a local impact.
- Design a project linked with an existing one or a completely new one. Look into what existing projects you could partner with or build on, what technology is available that could help, would students need to be trained, would they need equipment?
- Think about who is going to use the data. Just your school or is it part of a larger citizen science project? Is there an expert or agency that might be interested in it? How are they going to use the data? How will you connect with them? (There is a list of projects and experts available.)
- With the limited timeframe you may wish to only run a small scale project (pilot study) just to generate enough data for the students to examine and evaluate how it went.

- Plan how you will present your findings to the participants, the data-users and other people who can take action? For older students there might be some other publicly available data that could be incorporated as well.
- As an optional exercise for older students, you could plan how you could engage the wider community in data collection to expand the project's reach.

Want to find out about current citizen science projects running in South Australia?

Browse the Citizen Science [Project Finder.](#)

You can also search for projects in your local council area using this [interactive widget](#) as featured by Guardian Australia. As well as the following platforms:

- [iNaturalist Australia](#)
- [BioBlitz](#)

Here are some links to Citizen Science projects happening in South Australia:

- [Echidna CSI](#)
- [FrogWatch SA](#)
- [FungiMap](#)
- [Wild Orchid Watch](#)
- [Sea lion Spotter!](#)
- [Insect Investigators](#)
- [Waterwatch](#)

Experts available for help:

- [Dr Erinn Fagan-Jeffries](#), The University of Adelaide
- [Dr Sylvia Clarke](#), Landscape SA Board
- [Dr Frank Grutzner](#), The University of Adelaide

Why choose a citizen science project?

A Citizen Science Project can inspire students to learn about a topic you are already planning to teach. It should be part of a purposeful plan to develop an aspect of the Nature of Science that also connects strongly to the science concepts being taught. Participation in a citizen science project will guide your students through the full scientific inquiry process and enable them to experience the thrill and importance but also challenges of the scientific endeavour.

A Citizen Science Project enables teachers to:

- focus on developing science inquiry skills in context– gathering, interpreting or categorising data or critiquing evidence
- highlight the relevance and value of the science learning, with students contributing to a real-world science project
- create opportunities for working with real and relevant datasets that often have been co-created
- support students to take ownership and learn about how science works – considering how to collect and use data and the importance of data quality, making sense of data and exploring what it means to behave scientifically
- help students 'take action' by contributing data or analysis that informs a science-related issue.

A successful SASTA Oliphant Science Awards Citizen Science entry:

- Will effectively communicate the process of citizen science project design to gather data on a real world problem.
- Will run a small scale project (pilot study) or participate in a defined way in an existing project
- Provide a report of the findings and demonstrate how and by whom the data could be used to help solve the problem. If the timeframe isn't long enough to gather enough data, a plan of how it would be reported is sufficient.

Key Dates:
- **Friday 7 June – 28 June:** entry submitted online

Cost per entry: $24 (no discounts apply)

Criteria for Entry:

The entry must include a project journal.

The journal should include:

- Background information on the citizen science project, including what questions are being asked and why you thought citizen science could help answer the question.
- Why you chose that particular project.
- What steps you followed to participate in the project. For example, did you contact any science professionals to help?
- What type(s) of data you were collecting and how they will help answer the research questions being asked. (Include data summary)
- Anything interesting you saw in the data you were collecting
- Your findings/conclusions from participating in a citizen science project
- Discuss relevance and impact of the results or project (e.g. for existing policy).
- Future directions and potential of this area of research?

In presenting your Citizen Science entry (online submission ONLY):

The following documents will need to be uploaded for your project:

- Cover sheet with your Project ID details (your Coordinator will give you this)
- Electronic copy of your Citizen Science journal entry.
- Entries will be accepted as PDF or Word documents only. We cannot guarantee judges will be able to access any other file types.

For full details on electronic submission, see: https://bit.ly/OSAOnlineSubmission

Citizen Science Project Checklist

Group project only

Elements of your project

☐ Project journal including:

☐ · Background information on the project

☐ · Why you chose that particular project

☐ · What steps you followed to participate in the project

☐ · What types(s) of data you were collecting

☐ · Your findings/conclusions

☐ · Relevance and impact of the results

☐ · Future directions

Online submission only

☐ Cover sheet (given to you by your coordinator)

☐ Electronic copy of your journal (PDF or Word document)

Project submitted online: between Friday 7 June – 28 June
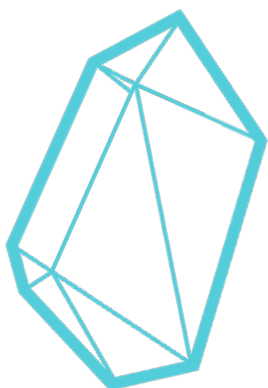
Crystal Investigation

The beautiful symmetry of crystals has charmed and delighted people for centuries. Here is your chance to investigate how beautiful crystals are formed.

A successful SASTA Oliphant Science Awards Crystal Investigation entry:

- Will answer an investigation question or investigate a hypothesis (prediction).
- Will include at least one crystal that shows sharpness of edges, smoothness of faces and has good clarity (transparency).

Rules for Crystal Investigation:

- A group of up to 3 students can complete a Crystal Investigation entry. The highest year level in the group will determine the year category of the entry.
- Growing the crystals must be the student's own work.
- The crystals must be made from potash alum (common alum, potassium aluminium sulphate).
- **You must keep a journal or logbook of your investigation, which will include details of:**
  - The investigation question or hypothesis.
  - Details of equipment and method used, including the quantities of alum and water used.
  - Dates and times of carrying out procedures.
  - Observations each time the crystals are inspected. This should include a written description as well as drawings or photographs of the crystals.
  - A discussion of any problems encountered and how you overcame them. Evaluate your method and make suggestions for improvements that could be made to it.
  - A summary of your findings including an answer to your investigation question or a statement stating if the hypothesis was supported or not supported by the results.

In presenting your Crystal Investigation entry:

- **An electronic copy of your logbook MUST be uploaded to the Oliphant Science Awards website between 22 - 26 July.** Details can be found here: https://bit.ly/OSAOnlineSubmission
- You must package your best crystal in a labelled, separate, small press-seal bag. This bag should then be placed into a padded Post Pak envelope for protection Be sure to also label the small press-seal bag with your ID Number (listed on your Identification Label).
- You must securely attach your Identification Label (your Coordinator will give you this label) to the front of your padded Post Pak envelope
- **A hard copy of your logbook should also be submitted with your crystal entry.**

Important information:

- You need at least 10 weeks to grow a good crystal.
- The following information can be found on the Crystal Investigation page on the Oliphant Science Awards website:
  - Information and advice on growing crystals
  - Logbook checklist (pdf)
  - Material Safety Data Sheet (MSDS) for alum (potassium aluminium sulfate).

A good source of alum is needed to grow a clear crystal. Ask your teacher or head to the RACI website to find out where to obtain alum.

Alum obtained from hardware stores or garden centres is likely to contain impurities and is not suitable without extensive extra preparation.

Prize winners and highly commended entries from Crystal Investigation will be automatically entered into the National Crystal Growing Competition. Check out the website for information and dates. Entries will be posted back to schools after the judging process.

Key Dates:

- **Monday 22 July – Friday 26 July:** journal / logbook submitted online
- **Tuesday 30 July:** project delivered onsite

Crystal Investigation Project Checklist

Elements of your project

☐ At least one crystal that shows sharpness of edges, smoothness of faces and has good clarity (transparency).

☐ Journal or logbook including:

☐ · The investigation question or hypothesis

☐ · Details of equipment and method used

☐ · Dates and times of carrying out the procedures

☐ · Observations each time the crystals are inspected

☐ · A discussion of any problems encountered

☐ · A summary of your findings

Online submission

☐ Cover sheet (given to you by your coordinator)

☐ Logbook/Journal (PDF or Word document)

Project submitted online: between Monday 22 July – Friday 26 July

Onsite delivery

☐ Attach your Identification Label to the front of your padded Post Pak envelope containing your crystal(s) (given to you by your coordinator)

☐ Ensure the the press-seal bag / container with your crystal is labelled with your ID number

☐ Hard copy of your logbook

Project delivered onsite: Tuesday 30 July

Games

Games are fun to play and fun to make, but they can have a serious point too. Create some fun and tell the world about science by making an award-winning game.

ONLY Board games will be accepted in this category this year

If you have an electronic game, please enter it in the Programming, Apps & Robotics category.

A successful SASTA Oliphant Science Awards Games entry:

- Is original, visually appealing, interesting and fun to play.
- Will have accurate scientific content.
- Will involve players in learning about the scientific content, not just winning by chance or good luck.

Rules for Games:

- A group of up to 3 students can complete a Games entry. The highest year level in the group will determine the year category of the entry.
- The game must be the student's own work.
- The rules of the game must be clear and easy to follow.
- You must identify the age group the game is intended for.
- Your board game must be no larger than 60cm x 40cm x 20cm high (this includes any packaging) and must weigh less than 8kg, including the box.

In presenting your Games entry:

- You must package your game in a strong box, making sure to strictly adhere to the dimensions previously listed.
- You must clearly label all the parts of your game, because parts may become separated when the judges play your game or during transport.
- You must securely attach your Identification Label (your Coordinator will give you this label) to the outside of the box. **Do not put your label on the bottom of the box.**
- Students are asked to consider recording a short video of their game being played to support their submission. This must be uploaded as an unlisted video on YouTube and shared via URL or QR code on your instructions.
- Supporting videos may be **uploaded to the Oliphant Science Awards website between 22 - 26 July.** Details can be found here: https://bit.ly/OSAOnlineSubmission

Key Dates:
- **Monday 22 July – Friday 26 July:** supporting documents for Games can be submitted online
- **Tuesday 30 July:** project delivered onsite
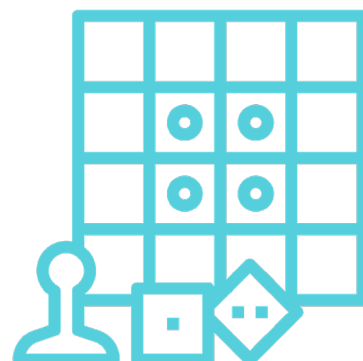
Games Project Checklist

Elements of your project

☐ Your board game is no larger than 60cm x 40cm x 20cm high, and less than 8kg

☐ The game involves learning about science content

☐ The intended age group is identified

☐ Rules of the game are clear and easy to follow

☐ Game includes accurate scientific content and is not a game of chance or luck

Online submission

☐ **(OPTIONAL)** A short video of the game being played – must be uploaded as an unlisted video on YouTube and shared via URL or QR code on your rules

Project submitted online: between Monday 22 July – Friday 26 July

Onsite delivery

☐ Game is packaged in a strong box adhering to dimensions listed above

☐ All parts of the game are clearly labelled

☐ Your Identification Label is **attached to the outside of the box, but not on the bottom!** (given to you by your coordinator)

Project delivered onsite: Tuesday 30 July

Models & Inventions

Proudly sponsored by the Australian Institute of Energy

If a picture paints a thousand words a good model must be worth a million.
Necessity is the mother of invention; look around - what do we need?

A successful SASTA Oliphant Science Awards Models & Inventions entry:

- Has accurate science content.
- Will be interactive allowing the viewer to manipulate it in some way.
- Will communicate ideas clearly.
- Will show creativity and originality.
- Will show skill in construction and design.

Rules for Models & Inventions:

- A group of up to 3 students can complete a Models & Inventions entry. The highest year level in the group will determine the year category of the entry.
- The Risk Assessment for Models & Inventions form must be completed and **signed by a teacher** before you start your entry.
- The ideas demonstrated in the model or invention must be your own work.
- Your model or invention must be no larger than 1 m in height × 1 m in width × 1m in length.
- Your model or invention must not weigh more than 8 kg.
- Your model or invention cannot be built from a kit without additional original input.
- Your model or invention must not include live animals or plants.
- **Your model must not include liquids or require the use of mains power.**
- Your model or invention must not include any items of value – SASTA cannot accept responsibility for any loss or theft of goods.
- All parts must be clearly labelled with your ID number (see Identification Label), because parts may become separated during judging or transport.

Key Dates:

- **Monday 22 July – Friday 26 July:** report & risk assessment submitted online
- **Tuesday 30 July:** project delivered onsite

- A short written report must include:
  - The completed and signed Risk Assessment for Models & Inventions form.
  - The scientific principle demonstrated by your model or used in your invention.
  - How the entry was made, including any adult help needed in its construction.
  - Any problems that occurred and how you overcame the problems.
  - How to operate your model or invention. The report length depends on your year level:
    - Year R–2: less than 100 words;
    - Year 3–4 and 5–6: approximately 250 words;
    - Year 7–8, 9–10, 11–12: do not exceed 500 words.

If there is any special reason for someone other than the entrants to edit or type the report this must be acknowledged in the report. You must also acknowledge any other assistance that you receive (see earlier Conditions of Entry).

In presenting your Models & Inventions entry:

- **An electronic copy of your report and risk assessment MUST be uploaded to the Oliphant Science Awards website between 22 - 26 July. Please include a photo of your model in your report.** Details can be found here: https://bit.ly/OSAOnlineSubmission
- **Attach a hard copy Report and Risk Assessment when delivering your project**
- You must attach your Identification Details as sent to you from your School Coordinator (ID Label or Electronic Cover Sheet)
- Students are asked to consider recording a short video of their project to support their submission. This could be uploaded as an unlisted video on YouTube and shared via URL or QR code on your report!
- **Special consideration for country schools:** Because of the difficulty and possible damage to models and inventions, students may send in a video of their entry working instead of their actual entry. Details can be found here: https://bit.ly/OSAOnlineSubmission

Models & Inventions Project Checklist

Elements of your project

- ☐ **Completed and signed Risk Assessment form**

- ☐ Model or invention is no larger than 1m x 1m x 1m and does not weigh more than 8kg

- ☐ Must not include liquids, require the use of mains power or include live animals or plants

- ☐ Short written report including:

- ☐ · The scientific principle demonstrated by your model or used in your invention

- ☐ · How the entry was made

- ☐ · Any problems that occurred and how you overcame the problems

- ☐ · How to operate your model or invention

- ☐ · Adheres to the report length requirements
  - · Year R–2: less than 100 words
  - · Year 3–4 and 5–6: approximately 250 words;
  - · Year 7–8, 9–10, 11–12: do not exceed 500 words.

- ☐ · Acknowledgment of assistance received.

Online submission

- ☐ Electronic copy of your report (PDF or Word document)

- ☐ Electronic copy of your risk assessment (must be signed by your science teacher or Oliphant coordinator)

- ☐ Cover sheet (given to you by your coordinator)

- ☐ **(OPTIONAL)** A short video of your project – uploaded as an unlisted video on YouTube and shared via URL or QR code on your report

Project submitted online: between Monday 22 July – Friday 26 July

Onsite delivery

- ☐ Identification Label attached to your entry (given to you by your coordinator)

- ☐ Hard copy of your report

- ☐ Hard copy of your risk assessment (must be signed by your science teacher or Oliphant coordinator)

- ☐ All loose parts labelled.

- ☐ No valuables attached.

Project delivered onsite: Tuesday 30 July

Multimedia

The information super highway includes video, computer interactives and web pages.

A successful SASTA Oliphant Science Awards Multimedia entry:

- Has accurate science content.
- Has an impact on viewers and communicates ideas clearly.
- Will show creativity, originality and resourcefulness.
- Demonstrates good technique and quality of production.

Rules for Multimedia:

- A group of up to 3 students can complete a Multimedia entry. The highest year level in the group will determine the year category of the entry.
- The multimedia production must be the student's own work.
- **A written report must include (dependant on which type of entry you have):**
    - The URL for the website. Please do not make any changes to your pages between submitting your entry and the Presentation Ceremony.
    - A list of any software you used to create your video, interactive or web page
    - A bibliography that contains all the sources of information you researched in creating your multimedia project. This includes all the books, websites, magazines and any people you have interviewed. If you quote directly from a source, you must use quotation marks and include a reference to the source of the quote.
    - A discussion of any problems you had and how you overcame the problems.
    - Acknowledgment of any assistance you had with editing, graphics, design or technical help with equipment or software used. (Students may get help with filming their video, but the core of the creation of the video must be the student's own work.)
    - The report length depends on your year level:
        - Year R–2: less than 100 words;
        - Year 3–4 and 5–6: approximately 250 words;
        - Year 7–8, 9–10, 11–12: do not exceed 500 words.

- Technical specifications:
    - A video must be uploaded to YouTube as an unlisted video – link provided on a word document and submitted via the online submission process.
    - Videos should run for no longer than 3 minutes.
    - Web pages must be readable by current web browsers available on PC and Mac and include NO plug-ins other than those normally distributed with the browser.
    - Web pages must be online – link provided on a word document and submitted online.
    - PowerPoint and interactives must be submitted via the online submission process.

In presenting your Multimedia entry (online submission ONLY):

- Cover sheet with your Student ID details (your Coordinator will give you this)
- Multimedia Formats: video **(via a URL to an unlisted YouTube video)** or PowerPoint (ppt)**.**
    - **mp4 video files will NOT be accepted** (due to the size and difficulty uploading to the website)
    - Videos uploaded to YouTube must be set to unlisted or public otherwise judges are unable to view them.
- Electronic copy of your written report (pdf or Word)

For full details on electronic submission, see https://bit.ly/OSAOnlineSubmission

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Key Dates:
- **Friday 7 June – Friday 28 June:** Multimedia entry submitted online

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Multimedia Project Checklist

Elements of your project

☐ Written report including:

☐ · URL to website or YouTube video

☐ · A list of any software used

☐ · A bibliography

☐ · A discussion of any problems you had and how you overcame them

☐ · Adheres to the report length requirements
   · Year R–2: less than 100 words
   · Year 3–4 and 5–6: approximately 250 words;
   · Year 7–8, 9–10, 11–12: do not exceed 500 words.

☐ · Acknowledgment of assistance received.

☐ Video is **no longer than 3 minutes**.

☐ A video must be uploaded to YouTube as an unlisted video (.mp4 files will not be accepted)

☐ Web pages are readable by current web browser available on PC and Mac and includes NO plug-ins other than those normally distributed with the browser

☐ Web pages must be online

Online submission only

☐ Electronic copy of your written report (PDF or Word document)

☐ PowerPoint or interactive (if applicable)

☐ Website URL link provide on a word document (if applicable)

☐ Cover sheet (given to you by your coordinator)

Project submitted online: between Friday 7 June – 28 June

Photography

Proudly sponsored by the South Australian Museum

Government of South Australia

SAM SOUTH AUSTRALIAN MUSEUM

Capture the moment forever. Tell your story through photography.

2024 Photography titles:

- **Our Impact** – *the images must depict human impact on nature, be it terrestrial (e.g., mining, re or deforestation), marine (fishing, sanctuaries, pollution) or atmospheric (e.g., air pollution). This impact may be negative or positive.*
- **Animals in Nature** – *the subject(s) must be photographed in a natural environment. This can be a portrait or behaviour shot. The animal(s) depicted may be either native or feral but must be depicted in nature with minimal evidence of human activity. Captive species are not allowed.*
- **Macro** – *intended to examine small elements of nature up close, with the subject to be presented larger than life size. Subject matter includes fauna, flora or natural formation. Note: this category does not include photographs taken through a microscope.*
- **Looking up -** clouds, buildings, stars
- **Wind or Water Doing Work**
- **Timelapse and Food Chemistry –** decay, baking, yeast, pickling
- **The World in Colour**
- **Plants with multiple functions**
- **Order from chaos**

A successful SASTA Oliphant Science Awards Photography entry:

- Has accurate science content.
- Will communicate ideas clearly, each photograph expressing a single idea within the topic chosen.
- Will contain good quality photographs.
- Will have the photographs displayed effectively
- Will show creativity and originality.

Rules for Photography:

- The photographs must be on one of the titles listed above.
- A group of up to 3 students can complete a Photography entry. The highest year level in the group will determine the year category of the entry.
- The photography and ideas expressed must be the student's own work.
- The photography can be either black and white or colour.
- A maximum of six photographs / images can be used per entry.

- Each photograph must be no larger than 25 cm × 20 cm.
- The photographs must be mounted on a single sheet of lightweight card no larger than 51 cm × 65 cm. **No corflute, glass, wood or other heavy frame or backing is permitted.**
- The entry must be flat. (No three-dimensional material attached).
- Each photograph must have a caption or short statement, linking it to the title.
- All production work must be done by the student including any special effects or manipulation (Commercial developing may be used).
- Any type of camera may be used.
- You must include a written statement of no more than 100 words which includes:

   ◦ The make and model of the camera used.
   ◦ The developing / printing process used.
   ◦ Any special effects or manipulations used.
   ◦ Acknowledgment of any help.

Rules for photographing animals:

◦ When photographing in a natural setting, ensure that you eliminate any impact that your presence has on the subject and its surrounding environment.
◦ You must not do anything to injure or distress an animal or damage its habitat in an attempt to secure an image.

In presenting your photography entry:

- You must attach your written statement about the camera and processing **to the back of the entry.**
- You must securely attach your Identification Label (your Coordinator will give you this label) **to the back of your entry.**

Winning entries may be eligible to enter the South Australian Museum Nature Photographer of the Year competition. More details to come!

Key Dates:

- **Tuesday 30 July:** Photography entry delivered onsite

Photography Project Checklist

Elements of your project

☐   Project has used one of the topic titles listed – **clearly identified**

☐   No more than six photographs / images included

☐   Each photography is no larger than 25cm x 20cm

☐   The photographs are mounted on a single sheet of lightweight card no larger than 51cm x 65cm. **No corflute, glass, wood or other heavy frame or backing is permitted.**

☐   Each photograph has a caption or short statement, linking it to the title

Written statement attached to the back of the entry, of no more than 100 words which includes:

☐
- The make and model of the camera used.
- The developing / printing process used.
- Any special effects or manipulations used.
- Acknowledgment of any help.

Onsite delivery only

☐   Identification label stuck to the **back of your entry** (given to you by your coordinator)

Project delivered onsite: Tuesday 30 July

Posters

A picture tells a thousand words, so have your say.

2024 Poster titles:

- **Natural History Illustration** (hand drawn only)
- **Microplastics**
- **Aquaculture**
- **Women in Science**
- **The World of Pollinators**
- **Data as art**
- **Chemical Changes**
- **Species Survival**

A successful SASTA Oliphant Science Awards Poster entry:

- Has a strong science message and accurate science content.
- Communicates a single idea clearly.
- Shows good quality artistic skills and imagination, giving the poster visual appeal.
- Uses minimal words (try using fewer than 25 words). The judges will favour entries that give a visual message without the use of a lot of text.
- Can be easily read from a distance.

Rules for Posters:

- The poster must be on one of the titles listed above. Please ensure this title is clearly identified on your entry.
- The poster must be the work of one person (No group entries or unacknowledged assistance by an adult).
- The poster must be the student's own work.
- The poster must be original.
- The poster must be on lightweight card no larger than 51cm x 65cm. **No corflute, glass, wood or other heavy frame or backing permitted.**
- The poster must not weigh more than 200g.
- The poster may be a collage of other pictures or made using computer assisted graphics. **All images and graphics need to be attributed.**
- The poster must be flat. (No three-dimensional material attached).

In presenting your poster entry:

- You must securely attach your Identification Label (your Coordinator will give you this label) **to the back of your entry.**

Key Dates:

- **Tuesday 30 July:** Poster entry delivered onsite

AI may be used for ages 13 and above with parental permission. Prompts must be identified and included on the back of the poster.

Posters Project Checklist

Individual project only

Elements of your project

☐ Project has used one of the topic titles listed and that topic is **clearly identified** on your poster.

☐ Is on a lightweight card no larger than 51cm x 65cm and weighs no more than 200g. **No corflute, glass, wood or other heavy frame or backing permitted.**

☐ If AI is used, prompts are identified and included on the back

Onsite delivery only

☐ Identification label stuck to the **back of your entry** (given to you by your coordinator)

Project delivered onsite: Tuesday 30 July

Programming, Apps & Robotics

Proudly sponsored by Defence Science & Technology Group

Write the instructions; be in control.

Australian Government

Department of Defence

A successful SASTA Oliphant Science Awards Programming, Apps & Robotics entry:

- Has accurate science content, and uses scientific principles to get results.
- Serves a scientific purpose.
- Is engaging and interesting to use.
- Is user friendly and almost impossible to crash.

Computers are programmed to help scientists with their work. Programs can:

- *Simulate behaviour using scientific understanding of interactions*
  Predicting the effects from a change is often difficult. Scientists might write mathematical equations of the many parts involved. They can then enter a virtual world where they can change some parts and the computer will work out the effect. The computer will also show the results in tables or graphs. Simulations are used instead of very long, difficult or dangerous experiments.

- *Control robots*
  Robots use sensors to get information and then respond to a change. For example a robot could sense the temperature in a glasshouse and open or close vents to suit the growing plants. Some robots move around and can sense their surroundings. They might change their behaviour depending on what they sense. Robots could be used in search and rescue situations to locate people and send a signal of where they are.

- *Model or help to demonstrate a scientific idea or principle*
  Programs can be written to show scientific concepts, or to model or simulate real life situations that are difficult to measure directly. Also, seeing interactive graphics can often make things easier to understand.

- A successful entry must do more than just follow a fixed sequence of steps. It should be innovative, and should show how the application could be applied to a practical application, or help solve a problem.

Rules for Programming, Apps & Robotics:

- Entries for all year levels may program either a robot, a computer program, app or electronic game.
- A group of up to three students can complete a Programming, Apps & Robotics entry. (The highest year level in the group will determine the year category of the entry)

- All entries will be judged on the elements that are the students' own work, and not on the robot itself, or the computer language that has been applied. The judges will place high value on the originality of the entry and the potential wider practical applications that it may address.
- Robotics entries may use recognised formats such as Lego Mindstorm, eLabtronics, Microbric or similar programs. Robots can be built from a kit, bought ready-made, or individually constructed.
- Programming and Apps entries may use recognised programming languages such as Java, C++, Fortran, or Visual Basic.
- Your entry must include a written report that includes the following:
  - The aim of the entry, and its scientific purpose and potential applications
  - The type of robot or computer/device required to run the program
  - Clear instructions on loading or using the entry
  - A hard copy of the program and an explanation of what the sections of the program do
  - Acknowledgment of any external support provided to the entry
  - A bibliography that acknowledges relevant sources of information.

In presenting your Programming, Apps & Robotics entry:

- **An electronic copy of your report / programming details MUST be uploaded to the Oliphant Science Awards website between 7 - 28 June.** Details can be found here: https://bit.ly/OSAOnlineSubmission
  - Please be sure to include any links to your program / app or videos / photos of your robot in your report for judges to review. Students are asked to include an email address where they can be contacted directly by the judges should they require any further information.
- You will need to book an appointment time online for **Saturday 27 July** (booking available in June)
- **You are required to bring your own entry with you for judging - this includes your own device / laptop and WiFi** to demonstrate your entry to the judges and discuss its features and uses.
- *If you're unable to attend judging day, there is no other opportunity for your project to be judged.*

Key Dates:
- **Friday 7 - 28 June:** report submitted online
- **Saturday 27 July:** judging day

Programming, Apps & Robotics Project Checklist

Elements of your project

☐ Written report including:

☐ · The aim of the entry, and its scientific purpose and potential applications

☐ · The type of robot or computer/device required to run the program

☐ · Clear instructions on loading or using the entry

☐ · A hard copy of the program and an explanation of what the sections of the program do

☐ · Acknowledgment of any external support provided to the entry

☐ · A bibliography that acknowledges relevant sources of information.

Online submission (required)

☐ Electronic copy of your report / programming details (PDF, Word document or .jpeg) – including links to your program/app or videos/photos of your robot in action

☐ Cover sheet (given to you by your coordinator)

Project submitted online: between Friday 7 - 28 June

Appointment (required)

☐ Book an appointment for judging online when they open from 7 June - 24 July

☐ At the appointment **you are required to bring your own entry with you for judging** – this includes your own device / laptop to demonstrate your project and you need to ensure you have internet access if needed – *WIFI access will not be provided for you.*

Judging day: Saturday 27 July

Science Writing

Proudly sponsored by Flinders University

Budding journalists and science writers, here is your chance to inspire, impress and inform your readers.

2024 Science Writing titles:

- El Nino
- **Avoiding Sporting Injuries -** concussion, muscle injuries
- **Species Survival**
- **Green Hydrogen**
- **Impacts of Eutrophication**
- **Space Junk**
- **The World in Colour -** changes in seasons, indicators, spectroscopy
- **First Nation science -** *The Science in Traditional Indigenous objects (e.g. the physics behind weapon designs like the Boomerang, paint colours, medicine)*
- **Science as a Human Endeavour** (YEAR 11–12 LEVEL ONLY)

A successful SASTA Oliphant Science Awards Science Writing entry:

- Is well researched and has accurate science content.
- Will communicate ideas clearly.
- Will be original, innovative and your own work.
- Will have accurate punctuation and spelling.
- Will have a References section that acknowledges all sources of information (for students in Years 7–8, 9–10 and 11–12, this will include in-text referencing).

Rules for Science Writing Entries:

- You must write on one of the titles listed above. Please ensure the title is clearly identified on your entry.
- The Science Writing entry must be the work of one person (no group entries).
- You must include a reference list that contains all the sources of information that you used. This includes all books, websites, magazines, and any people you have interviewed.
- Appropriate "in-text" referencing is expected for students in Years 7–8, 9–10 and 11–12.
- If you quote directly from a source, you must use quotation marks and include a reference to the source of the quote.
- ***AI Tools are not permitted for any aspect of science writing.***

- Science Writing can be in a number of different genres:
  - Recount
  - Narrative
  - Explanation
  - Discussion
  - Response
  - Information Report
  - Procedure
  - Persuasion/Exposition
  - Description
  - Comic (graphic writing)
  - Infographic
- You may include pictures and graphic illustrations. However, if illustrations or pictures are copied you must include a reference next to the illustration or picture.
- Write or word-process your entry yourself. If there are special reasons for using help in typing or editing, then this help must be acknowledged after your reference list.
- The length of your Science Writing entry depends on your year level:
  - Year R–2: do not exceed 200 words;
  - Year 3–4 and 5–6: do not exceed 800 words;
  - Year 7–8, 9–10, 11–12: do not exceed 1500 words.
  - **A word count must be included on your entry** (please note: titles, labels and referencing are not included in the word count). *There can be up to 10% tolerance of the word limit*

In presenting your Science Writing entry (online submission ONLY):

The following documents will need to be uploaded for your project:

- Cover sheet with your Student ID details (your Coordinator will give you this)
- Electronic copy of your science writing entry.
- Entries will be accepted as PDF or Word documents only. We cannot guarantee judges will be able to access any other file types.

For full details on electronic submission, see: https://bit.ly/OSAOnlineSubmission

Key Dates:
- **Friday 7 June – 28 June:** entry submitted online

Science Writing Project Checklist

Individual project only

Elements of your project

- ☐ Project has been written on one of the topic titles listed

- ☐ Reference list is included

- ☐ Appropriate "in-text" referencing (Years 7-12)

- ☐ If there are special reasons for using help in typing or editing, they are acknowledged after your reference list

- ☐ Word count **must** be included

  Adheres to length requirements
- ☐
  - · Year R–2: do not exceed 200 words
  - · Year 3–4 and 5–6: do not exceed 800 words;
  - · Year 7–8, 9–10, 11–12: do not exceed 1500 words.

Online submission only

- ☐ Cover sheet (given to you by your coordinator)

- ☐ Electronic copy of your science writing entry (PDF or Word document)

Project submitted online: between Friday 7 June - 28 June

Scientific Inquiry

Proudly sponsored by the University of South Australia

Scientific inquiries build our understanding of how the world works, and how science makes a difference to our everyday lives. Wow – your inquiry could change the world!

University of South Australia

A successful SASTA Oliphant Science Awards Scientific Inquiry entry:

- Will follow a scientific method of investigation.
- Will communicate ideas clearly.
- Will be an original inquiry.
- Will include evidence of reading on the topic.
- Scientific Inquiries that show a hypothesis is not supported are just as likely to win as Scientific Inquiries that show a hypothesis is supported. (You will not know the answer until you do the work!).

Rules for SASTA Oliphant Science Awards Scientific Inquiry:

- A group of up to 3 students can complete a Scientific Inquiry entry. The highest year level in the group will determine the year category of the entry.
- The inquiry must be your own work.
- If you plan to use animals in your inquiry, then you must comply with animal ethics requirements. Check with your science teacher before you start.
- You must keep a science journal or logbook containing dates for your on-going ideas, raw data, notes and a **completed** Risk Assessment for Scientific Inquiry Form (remember your science teacher needs to sign this form).
- **Your scientific report should include the following sections:**
  - Questioning and predicting: What is the question that you are investigating? What do you predict will happen?
  - Planning and conducting: Explain why you chose the particular method for your investigation. What are the possible variables in your investigation? Which variable will you change? Which variable will you measure? Is your investigation a 'fair test'? Describe all the steps of your investigation so that someone else could do it again exactly as you did it.
  - Equipment and materials: List all the equipment and materials that you used in your investigation. List any possible risks that may result from the investigation, and describe how they were controlled.
  - Processing and analysing data and information: Present the measurements or observations from your investigation in suitable ways. Depending on the year level, these may include tables, graphs and photographs or sketches. Analyse your results. What patterns and relationships can be seen in the data? What conclusions can be made? Do your results support your predictions?

  - Evaluating: How could your investigation be improved? How could your findings be useful to others? What other related questions could be further investigated?
  - Communicating: Present your science investigation using scientific terms where this is appropriate. Represent your findings in a number of ways. These may include various texts, charts, graphs, tables, and may include the use of digital technologies. Relate your investigation to any research that you have done from other sources. Your report must include a References section containing all the sources of information you researched (all the books, websites, magazines and any people you have talked to). If you quote directly from a source, you must use quotation marks and include a reference to the source of the quote.
- The expected detail in addressing the above criteria depends on your year level.
- ***AI Tools are not permitted for any aspect of scientific inquiry.***
- A word count must be included on your report (please note: headings, titles, figure captions, tables, references and logbook / journal are not included in the word count).
  - Year R–6: do not exceed 1000 words;
  - Year 7-12: do not exceed 2000 words.
  There can be up to 10% tolerance of the word limit

In presenting your Scientific Inquiry entry (online submission ONLY):

The following documents will need to be uploaded for your project:

- Cover sheet with your Student ID details (your Coordinator will give you this)
- Electronic copy of your scientific report in either A4 'scientific article' style, or maximum size A2 'scientific poster' style
  - Entries will be accepted as PDF, Word documents or an image (.jpg or .png) only. We cannot guarantee judges will be able to access any other file types.
- **Completed & signed** risk assessment form
- Electronic copy of your journal / logbook

For full details on electronic submission, see https://bit.ly/OSAOnlineSubmission

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Key Dates:
- **Friday 7 June - 28 June:** entry submitted online

Scientific Inquiry Project Checklist

Elements of your project

- ☐ Scientific report including the following sections:

- ☐ · Questioning and predicting

- ☐ · Planning and conducting

- ☐ · Equipment and materials

- ☐ · Processing and analysing data and information

- ☐ · Evaluating

- ☐ · Communicating using scientific terms and methods

- ☐ · Word count included

- · Adheres to length requirements
- ☐ · Year R–6: do not exceed 1000 words
  - · Year 7-12: do not exceed 2000 words

- ☐ Journal / Logbook

- ☐ · dates for your on-going ideas

- ☐ · raw data

- ☐ · notes

- ☐ · completed risk assessment (signed by your science teacher or Oliphant coordinator)

Online submission only

- ☐ Cover sheet (given to you by your coordinator)

- ☐ Electronic copy of your scientific report in either A4 'scientific article' style, or maximum size A2 'scientific poster' style (PDF, Word document or image (.jpeg or .png))

- ☐ Risk Assessment (must be signed by your science teacher or Oliphant coordinator)

- ☐ Journal/Logbook (PDF or Word document)

Project submitted online: between Friday 7 June – 28 June

Sponsor Prizes

Platinum Sponsor Prizes (more details on pages 30-32)

Department for Education South Australian Young Scientist Awards (R–4, 5–8, 9–12)

Rowe Scientific Emerging Talent Awards

Rowe Scientific Regional Science & Engineering Awards

Defence Science and Technology Group Secondary School Prizes (7–12)

Category Naming Rights Sponsor Prizes

Australian Institute of Energy Prizes (R–6, 7–12)
For the best entry at each year level with a sustainable generation and uses of energy theme.

Flinders Environment Prize (7–12)
For the most inspiring entry covering an environmental issue in South Australia.

Flinders University Science Prize (7–12)
For the most outstanding research-based entry in science.

Flinders University - Regional Student Prize (7–12)
For the most outstanding entry from a student in a regional area.

SA Museum Photography Prizes (R-6, 7-12)
For the best Photography entry including natural fauna, flora or natural land/sky formations and must have been taken in the Australia/New Zealand bioregion.

University of South Australia – Sustainable Future Prizes (R-6, 7-12)
For the most inspiring entry highlighting the value of Information Technology, Engineering and Environmental Science to a Sustainable Future.

Gold Sponsor Prizes

Wine Australia Prizes (R-4, 5-8 & 9-12)

For the most outstanding entries in Models and Inventions or Scientific Inquiry that highlight food chemistry

Silver Sponsor Prizes

Catholic Education SA Primary Schools Prize
Awarded to two primary schools that have the highest number of winning entries.

University of Adelaide Faculty of Science, Engineering and Technology: Sciences Prize (7–12)
For the most outstanding entry highlighting the benefits of scientific research to the community.

University of Adelaide Faculty of Science, Engineering and Technology: Engineering, Mathematical and Computer Sciences Prize (7–12)
For the most outstanding entry with an engineering, mathematical or computing theme.

Bronze Sponsor Prizes

Australian Society of Biochemistry & Molecular Biology Prize (R–12)
For the best student project with a biochemistry or molecular biology theme.

Australian Institute of Physics Prize (R–12)
For the best student project with a physics theme.

Royal Australian Chemical Institute (RACI) Prize (R–12)
For the most outstanding entry with a chemistry theme.

Tall Poppy Award for Scientific Inquiry (7-12)
For a scientific inquiry project where clear and engaging communication features.

All Sponsor Prizes listed are correct at time of publishing but may be subject to change.

**Government
of South Australia**

Department for Education

Department for Education

proudly sponsor

South Australian Young Scientist Awards R–4, 5–8 and 9–12

1st prize	$500 cash
2nd prize	$250 cash
3rd prize	$100 cash
4th prize	$50 cash

The Department for Education has been a sponsor of the SASTA Oliphant Science Awards since their inception in 1981, and is delighted to continue this arrangement as a Platinum Sponsor in 2024.

The SASTA Oliphant Science Awards exemplify the inquiry based approach to the teaching and learning of Science that is so important in engaging our students, and in supporting the development of their scientific understanding and processes that leads to improved scientific literacy.

For many young people their experience of science at school sets a pattern that lasts throughout life. The Department for Education is strongly committed to each and every student having the opportunity to experience the joy of scientific discovery, and to apply their natural curiosity to their world. All students are supported in developing the scientific knowledge, understandings and skills to make informed decisions about local, national, global issues, and to participate, if they so wish, in science related careers.

The Department for Education has a major role in the South Australian Government Science, Technology, Engineering and Mathematics (STEM) Skills strategy. Through our own Department for Education STEM Strategy we are ensuring all educators connect with the latest in teaching practices and the wide range of programs available to support their work.

The Department for Education acknowledges the role that SASTA, through its many volunteers, plays in engaging so many students in Science inquiry and in the promotion of scientific literacy, and is proud to sponsor and support this important project.

All Sponsor Prizes listed are correct at time of publishing but may be subject to change.

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Rowe Scientific

Rowe Scientific are proud sponsors of the Oliphant Science Awards and are keen to promote greater interest by students in all aspects of science, with a view to that interest influencing students' future career choices. **The Rowe Scientific Regional Science & Engineering Awards are a new initiative and further information and criteria can be found below.**

Rowe Scientific Emerging Talent Awards

Awarded to the two best Primary and two best Secondary entries from regional or disadvantaged schools*. Each recipient will be awarded $500 cash.

Rowe Scientific Regional Science & Engineering Awards

- **Entry is open to students in remote and regional schools** (students from metro disadvantaged schools* may also enter)
- **Entry in Models & Inventions and Scientific Inquiry categories only**
  - Entries will be judged in both the overall competition and the Regional Science & Engineering Awards.
- **Entries must be submitted electronically** (see Models & Inventions and Scientific Inquiry category pages for more information about rules and electronic submission)
- **Please ensure you include a photo of your Models & Inventions entry in your report**

Category 1 & 2 schools (Index of Educational Disadvantage by school) or ICSEA less than 1000 (Index of Community Socio-educational Advantage - search school name for ICSEA value)

All Sponsor Prizes listed are correct at time of publishing but may be subject to change.

Australian Government
Department of Defence

Defence Science and Technology Group

proudly sponsor

DSTG Secondary School Prize

A Defence Science and Technology Group (DSTG) School Prize of $500 will be awarded to the school with the highest aggregate score in each of the following school categories; Junior Secondary (7–8, 9–10) and Senior Secondary (11–12). The second school in each category will receive a DSTG School Prize of $250.

Selection criteria:

For each prize-winner in every category and year level the following points will be accumulated.

1st prize	4 points
2nd prize	3 points
3rd prize	2 points
Highly Commended	1 point

The DSTG offers a rewarding career with the chance to work with many of Australia's leading scientists and engineers, access to some of the most advanced technology and facilities currently available, links with other national and international organisations, excellent career development opportunities, and travel.

In undertaking its research, the impact of DSTG, particularly on the electronics industry in South Australia, has been huge. As the largest scientific facility in Australia, DSTG Edinburgh is a major employer and innovator of electronics in Australia.

DSTG Edinburgh, north of Adelaide, can offer careers in computer science, information technology, electrical or electronic engineering, mathematics, behavioural or cognitive science and psychology.

DSTG is part of the Department of Defence. Its role is to ensure the expert, impartial and innovative application of science and technology to the defence of Australia and its national interests.

All Sponsor Prizes listed are correct at time of publishing but may be subject to change.

Important Registration Information for School Coordinators

- Distribute the relevant information to students; Registration Form, Student Information, Conditions of Entry, Project Checklists, Category Information & Rules and Risk Assessment Forms if submitting Scientific Inquiries or Models & Inventions.
- Set a date for Registration Forms to be completed and returned to you (**prior to Friday 17 May**).
- Completed Registration Forms can be submitted:
  - Online; Registration Forms can be submitted online using your email and unique login password in your members section at www.oliphantscienceawards.com.au For further information or login details please contact SASTA on 8354 0006 prior to the closing date, Friday 17 May. Please ensure that you have registered / re-registered as a coordinator prior to trying to enter your registrations.

- **Please note:** by submitting each student entry, the student(s) agree that a copy of their entry can be displayed at Open Day, on the SASTA websites or social media, or used in SASTA publications (see conditions of entry).
- Schools will be invoiced based on the number of entries that have been registered by 5pm on Wednesday 5 June using the fee schedule listed on Page 5. There will be no credit or refund should any of your students fail to submit their projects. However, should one (or more) student / project fail to enter, another student / project can be entered in its place.
- Cover sheets or identification labels must be securely attached to each entry (see Category Information for label positions). Ensure all parts are labelled clearly and include the Registration ID # (found on the Identification Label). Please contact SASTA before making any amendments to the label.
- Make note of the Key Dates for Registration, Delivery and Collection of entries.
- Schools who are registering more than 10 entries are asked to allocate one or more judges for one or multiple categories.

New Schools Incentive

Schools who have not participated in the past five years needing assistance for participation in the Oliphant Science Awards are eligible to apply for support.

Recipients of the New School Incentive will have the opportunity to enter the Oliphant Science Awards with the provision of up to $200.00 allocated towards entry project registration fees (this amount will be deducted directly from your school's project registrations and is not a cash prize, therefore any remaining funds will be forfeited). Both primary and secondary schools are eligible to apply for support.

If you meet the above criteria and have students interested in getting involved in SA's largest Science Competition in 2024, applications for the 2024 New Schools Incentive are now open.

Go to www.oliphantscienceawards.com.au to register by 24 March.

SASTA
South
Australian
Science
Teachers
Association

Country Schools Bursary

Country and regional schools needing assistance for participation in the Oliphant Science Awards are eligible to apply for the Country Schools Bursary.

To be eligible to apply for the Country Schools Bursary the school's postcode must fall within the Regional South Australia Definition. Please see the list of postcodes here.

Country Schools can apply for a bursary of up to $500 per school to support the cost of

· Student registration fees
· Courier / Transport costs for the delivery and pick up of projects
· Project materials

The bursary will be administered as a lump sum granted to the school to be spent at the OSA Coordinators discretion in support of student participation in the 2024 Oliphant Science Awards competition.

If you meet the above criteria and have students interested in getting involved in SA's largest Science Competition in 2024, applications for the 2024 Country Schools Bursary are now open!

Go to www.oliphantscienceawards.com.au to register by 24 March.

Regional Student Travel Fund

To assist the participation of country and regional students in the 2024 OSA Open Days and Presentation Ceremony, OSA Coordinators can apply for funding through the Regional Student Travel Fund.

To be eligible to apply for the Regional Student Travel Fund, the school's postcode must fall within the Regional South Australia Definition. Please see the list of postcodes here.

OSA Coordinators from regional or country schools can apply for up to $300 per school to support the cost of student entrants" travel to and from the OSA Open Days and the OSA Presentation Ceremony (where applicable).

The allocated funding will be administered as a lump sum granted to the school to be spent at the OSA Coordinators discretion in support of student travel only (The funding is not to be used to purchase Open Day tickets as these will already be discounted for OSA families).

If you meet the above criteria and have students interested in getting involved in SA's largest Science Competition in 2024, applications for the 2024 Regional Student Travel Fund are now open!

Go to www.oliphantscienceawards.com.au to register by 7 June.

OSA PROJECT REGISTRATION FORM

COMPLETE ONE FORM FOR EACH ENTRY. PLEASE ENSURE ALL FIELDS ARE COMPLETED.

Entry Fee $ _____   Date Paid ___ / ___ / 2024

School: _____ School ID #: _____

First name: _____ Surname: _____ ☐ M ☐ F ☐ X

Are you of Aboriginal or Torres Strait Islander origin? ☐ Yes ☐ No ☐ Do not want to disclose

Is this a Group Entry? ☐ Yes ☐ No (If yes, add names below; maximum of 3 students per group)

First name: _____ Surname: _____ ☐ M ☐ F ☐ X

First name: _____ Surname: _____ ☐ M ☐ F ☐ X

Title of Project: _____

School OSA Coordinator's Name: _____

Year Level: ☐ R–2   ☐ 3–4   ☐ 5–6   ☐ 7–8   ☐ 9–10   ☐ 11–12

Category: ☐ Crystal Investigation   ☐ Games   ☐ Models & Inventions
☐ Multimedia   ☐ Photography   ☐ Posters
☐ Programming, Apps & Robotics   ☐ Scientific Inquiry   ☐ Science Writing

☐ Tick (✓) if you intend seeking a **patent** and do not want your entry publicly displayed.

Terms & Conditions

1. Information on how to enter, conditions of entry, category information and rules form part of these Terms and Conditions. Participation in this competition is deemed acceptance of these Terms and Conditions, as listed herein or at www.oliphantscienceawards.com.au.
2. SASTA reserves the right, at any time, to verify the validity of entries and entrants in its sole discretion and to disqualify any entrant who submits an entry that is not in accordance with these Terms and Conditions or who tampers with the entry process.
3. Entry is open only to South Australian School children in years Reception to 12.
4. By entering this competition, eligible entrants and their teachers acknowledge that they have received parental / guardian consent for the eligible entrant's name, school and photograph to be displayed on the SASTA Website and published in other nominated forms of print and media.
5. SASTA's decision is final and no correspondence will be entered into.
6. Prizes, or any unused portion of a prize, are not transferable or exchangeable and cannot be taken as cash.
7. On issuing prizes SASTA and associated sponsors take no responsibility for prizes damaged, delayed, lost or stolen.
8. All entries unless otherwise stated must be collected as advised. Unclaimed entries will be destroyed following final advice of collection dates.
9. Except for any liability that cannot be excluded by law, SASTA (including its officers, employees and volunteers) excludes all liability (including negligence), for any personal injury; or any loss or damage (including loss of opportunity); whether direct, indirect, special or consequential, arising in any way out of the Competition, including, but not limited to, where arising out of the following: (a) any technical difficulties or equipment malfunction (whether or not under SASTA's control); (b) any theft, unauthorised access or third party interference; (c) any entry or prize claim that is late, lost, altered, damaged or misdirected (whether or not after their receipt by SASTA) due to any reason beyond the reasonable control of SASTA; (d) any variation in prize value to that stated in these Terms and Conditions; (e) any tax liability incurred by a winner or entrant; or (f) use of a prize including attendance at events included as part of the prize.
10. By submitting this entry you agree that your entry or a copy of your entry can be used and / or displayed by SASTA to promote the Oliphant Science Awards at events, on SASTA websites and social media, and used in part of full within the SASTA Journal or Newsletter publications.
11. SASTA is the South Australian Science Teachers Association incorporating the SASTA Oliphant Science Awards Convenors, Committee and Volunteers.

☐ I / We certify that I / we have read and agree to the Terms & Conditions outlined for entry into the SASTA Oliphant Science Awards Competition. I / we also certify that the completed entry is my / our own work except where appropriate acknowledgment is made in a note attached to the entry.

Signed (Student 1) _____ Signed (Parent / Guardian 1) _____

Signed (Student 2) _____ Signed (Parent / Guardian 2) _____

Signed (Student 3) _____ Signed (Parent / Guardian 3) _____

OSA PROJECT REGISTRATION FORM
CITIZEN SCIENCE

COMPLETE ONE FORM FOR EACH ENTRY. PLEASE ENSURE ALL FIELDS ARE COMPLETED.

GROUP / CLASS ENTRY ONLY

Entry Fee | $ 24.00 | Date Paid | / / 2024

School: _____ School ID #: _____

Title of Project: _____

School OSA Coordinator's Name: _____

Year Level: ☐ Primary ☐ Secondary

☐ Tick (✓) if you intend seeking a **patent** and <u>do not want</u> your entry publicly displayed.

Terms & Conditions

1. Information on how to enter, conditions of entry, category information and rules form part of these Terms and Conditions. Participation in this competition is deemed acceptance of these Terms and Conditions, as listed herein or at www.oliphantscienceawards.com.au.
2. SASTA reserves the right, at any time, to verify the validity of entries and entrants in its sole discretion and to disqualify any entrant who submits an entry that is not in accordance with these Terms and Conditions or who tampers with the entry process.
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7. On issuing prizes SASTA and associated sponsors take no responsibility for prizes damaged, delayed, lost or stolen.
8. All entries unless otherwise stated must be collected as advised. Unclaimed entries will be destroyed following final advice of collection dates.
9. Except for any liability that cannot be excluded by law, SASTA (including its officers, employees and volunteers) excludes all liability (including negligence), for any personal injury; or any loss or damage (including loss of opportunity); whether direct, indirect, special or consequential, arising in any way out of the Competition, including, but not limited to, where arising out of the following: (a) any technical difficulties or equipment malfunction (whether or not under SASTA's control); (b) any theft, unauthorised access or third party interference; (c) any entry or prize claim that is late, lost, altered, damaged or misdirected (whether or not after their receipt by SASTA) due to any reason beyond the reasonable control of SASTA; (d) any variation in prize value to that stated in these Terms and Conditions; (e) any tax liability incurred by a winner or entrant; or (f) use of a prize including attendance at events included as part of the prize.
10. By submitting this entry you agree that your entry or a copy of your entry can be used and / or displayed by SASTA to promote the Oliphant Science Awards at events, on SASTA websites and social media, and used in part of full within the SASTA Journal or Newsletter publications.
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☐ I / We certify that I / we have read and agree to the Terms & Conditions outlined for entry into the SASTA Oliphant Science Awards Competition. I / we also certify that the completed entry is my / our own work except where appropriate acknowledgment is made in a note attached to the entry.

Signed (Project Coordinator) _____

OSA RISK ASSESSMENT FORM

for all entries in (✓) ☐ Models & Inventions and ☐ Scientific Inquiry

This must be included with your report, logbook or entry. One form per entry.

STUDENT(S) NAME: _____ ID:_____

SCHOOL:_____

Activity: Give a brief outline of what you are planning to do.

_____

_____

_____

_____

_____

Are there possible risks? Consider the following:

· Chemical risks: Are you using chemicals? If so, check with your teacher that any chemicals to be used are on the approved list for schools. Check the safety requirements for their use, such as eye protection and eyewash facilities, availability of running water, use of gloves, a well-ventilated area or fume cupboard.

· Thermal risks: Are you heating things? Could you be burnt?

· Biological risks: Are you working with micro-organisms such as mould and bacteria?

· Sharps risks: Are you cutting things, and is there a risk of injury from sharp objects?

· Electrical risks: Are you using mains (240 volt) electricity? How will you make sure that this is safe? Could you use a battery instead? *Only batteries can be used for Models & Inventions entries*

· Radiation risks: Does your entry use potentially harmful radiation such as UV or lasers?

· Other hazards.

Also, if you are using other people as subjects in an investigation you must get them to sign a note consenting to be part of your experiment.

Risks	How I will control / manage the risk

(Attach another sheet if needed.)

Risk Assessment indicates that this activity can be safely carried out

RISK ASSESSMENT COMPLETED BY (student name(s)): _____

_____

SIGNATURE(S): _____

☐ By ticking this box, I/we state that my/our project adheres to the listed criteria for this Category.

TEACHER'S NAME: _____

SIGNATURE: _____ DATE: _____