



TECHNOLOGY (SCHOOLS AND ADULT)
SCIENCE INVESTIGATION AWARDS & 3D PRINTING
Prize Schedule | Competition Information

2 - 11 September 2016 | theshow.com.au



PRESENTING PARTNER



How the locals like it

TECHNOLOGY (SCHOOLS AND ADULT), SCIENCE INVESTIGATION AWARDS (FORMALLY PICSE) & 3D PRINTING

CLOSING DATE OF ENTRIES FRIDAY, 22 JULY 2016 at 5.00 pm CST

CLOSING DATE OF ENTRIES

The following conditions will strictly apply:

- All entries, whether posted, lodged in person or completed online (if applicable) must be in the Society's possession at its Administration Office by **5.00 pm (CST) on Friday 22 July 2016.**
- When sending entry forms and fees by post, the onus is on the exhibitor to ensure adequate delivery time.
- Entry forms by facsimile or email will not be accepted.
- A late entry option is available under the following conditions:
 - Late entries may only be submitted online and will be accepted for 7 days after the official closing date (by 5.00 pm CST)
 - An additional fee equivalent to three times the standard entry fee is paid.

Absolutely no exception to the above conditions will be made to any exhibitor under any circumstance.

ONLINE ENTRIES

www.theshow.com.au

ACKNOWLEDGEMENT OF ENTRIES

Entries submitted online will be acknowledged via email.

For postal entries, if you require formal acknowledgement that your entry has been received please include a stamped, self-addressed envelope with your entry form.

ENTRY FEES (GST INCLUDED)

Entry fees - \$4 per entry (online), \$5 per entry (paper)

Cheques should be made payable to RA&HS and posted with the completed entry form.

PAYMENT OF FEES

When paying fees by cheque or credit card, exhibitors must ensure that sufficient funds are available at the time of entry. Failure to do so may result in non-acceptance of entries.

REFUNDS

No refund of entry fees will be made after the closing date of entries.

MEMBERSHIP

Exhibitors need not be members of the Royal Agricultural & Horticultural Society of SA Inc (hereafter referred to as RA&HS).

Membership fees: Adults \$156, Juniors \$53 (under 18).

CONTACT US

Post RA&HS - Technology
PO Box 40, GOODWOOD, SA 5034

Email entries@adelaideshowground.com.au

Phone (08) 8210 5211 Between 9.00 am - 5.00 pm Monday to Friday

Secretary Jo Geschmay

Website www.theshow.com.au

YOUR PRIVACY

If you do not want your details to be made available to other parties, please tick the box on the entry form supplied by the RA&HS. Your personal information will then only be used by the RA&HS to maintain contact with you and allow us to manage your entries. The RA&HS reserves the right to inform prize sponsors of the details of recipients to enable distribution of their voucher/product prizes.

GENERAL REGULATIONS

Exhibitors are reminded that the Society's General Regulations apply to all sections of the Show. A copy of the General Regulations can be obtained from the Society's website at www.theshow.com.au or from the Society's Administration Office.

Exhibitors should note that the General Regulations contain a number of provisions relevant to competitions and this Schedule including but not limited to, offences, penalties, prohibited drugs. As those conditions apply in addition to the regulations contained within this schedule, Exhibitors should familiarise themselves with the General Regulations.

SPECIAL REGULATIONS

Exhibitors are reminded that the Special Regulations contained within this Schedule are merely supplementary to and subject to the General Regulations.

The members of the Society's Art, Craft, Cookery & Technology Committee shall have the authority to act on behalf of the Society to take any necessary action under these Special Regulations.

SUBMISSION OF ENTRIES

All exhibits must be current work from July 2015 to August 2016.

The support material accompanying each exhibit should be packaged in a suitable A3 or A4 folder, displaying exhibit and class number.

SCHOOLS TECHNOLOGY –

- a) **Design & Technology – Goyder Pavilion**
b) **Digital Technology – Advanced Technology Centre**

in both forms of technologies, students are encouraged to add a folio or design brief documentation with their project to assist in judging for major prizes. Some classes do not require back up work eg Photography, unless otherwise specified.

Design brief projects require:

- A design brief stated clearly
- Independent planning and research evident
- Some innovation and originality
- Communication using graphics
- Good choice of materials and systems of manufacture
- Quality of project showing attention to detail/performance
- Attention to safety in manufacture
- Clear use of literacy standards in investigation planning and evaluation stages

Project only exhibits require:

- Attention to detail
- Quality choice of materials and processes
- Attention to safety in manufacture
- Quality of project showing attention to detail/performance
- A solution of worth

VET type projects require:

- A drawing with the item to show specifications and tolerances achieved.
- Highly appropriate choice of materials and processes/ systems
- Attention to safety in manufacture
- Attention to detail, performance and finish

Team projects

Team projects may be submitted in some Schools Technology categories ONLY and exhibitors appropriately named.

Prizes will be awarded to named individuals of the teams with prize cards if they are named at entry/ registration time.

Schools Technology Restriction of entries

Exhibitors can enter more than one item for judging.

Exhibitors may not enter one project across 2 classes or categories.

If the number of exhibits exceeds the space available, the Society reserves the right to display prize winning exhibits only.

TRANSFERS

Please ensure exhibits are entered in the correct class at time of entry. No exhibit will be transferred to another class after the closing date of entries.

EXHIBIT CARDS

After entries have closed; exhibit cards will be forwarded to exhibitors and must accompany each entry.

These cards should be securely fastened to entries so that the card is clearly seen when the work is displayed.

Straight pins must not be used to attach exhibit cards.

Every separate article of a set must bear the exhibit number and be attached to the set by mounting.

Exhibits must not have any identification markings or names, other than the exhibit cards supplied by the Society.

WITHDRAWALS

All withdrawals must be made in writing and can be sent via email to

entries@adelaideshowground.com.au or faxed to (08) 8210 5222. Emailed withdrawals must include "Withdrawal" in the subject line and the section (eg Technology), exhibitor name, class number/s, exhibit number (if known) and exhibit name (if applicable). Withdrawals must be made at least 24 hours prior to judging.

PRIZES & AWARDS

Please refer to the relevant area of the Prize Schedule.

SCHOOLS TECHNOLOGY:

Prizes of First \$15, Second \$5 and Third \$3 will be awarded in the following sections (unless otherwise specified)

CATEGORY 6 - PERFORMING ADVANCED TECHNOLOGY & ENTERPRISE STEMSEL EXHIBITS

Please refer to the inside front cover for Closing Date of Entries, Staging, Judging and Collection times.

These entries show the STEMSEL Principles of Science, Technology, Engineering, Mathematics, Social Enterprise and Learning to give life to communities. The aim of this competition in its many forms is to work to UNESCO priorities to improve the quality of life and human condition. All exhibits will be displayed and secured in the **Technology Centre** before Show week.

SPECIAL CONDITIONS

All competitions and judging in Category 6 are performed during pre-Show and during Show Week. Competitors will be notified of times and dates. Failure to do so may eliminate your entry from being judged or displayed. Students will be required to go to the Advanced Technology Centre at the allocated times to complete and display their work. Final projects will be displayed at the end of the competition days in cabinets with prize certificates in the **Advanced Technology Centre**. Some exhibitors may need to compete as a team, if otherwise stated.

CATEGORY 6A - ROBOTICS INNOVATION, INVENTION & ENTERPRISE ADULT COMPETITION

Please refer to the inside front cover for Closing Date of Entries, Staging, Judging and Collection times.

All exhibits will be displayed and secured before Show week.

All exhibits will be displayed and secure before Show week.

This competition is design brief and problem based learning (PBL) requiring back up work and the competitor attending the competition day/s.

Competition days and dates:

Finalists days:

Wednesday 7 September

Thursday 8 September

Prize Award Ceremony - Friday 9 September

This competition is design brief and problem based learning (PBL) requiring back up work and the competitor attending the competition day(s).

There is one competition to select an overall individual prize winner from a choice of 5 topics.

- ENTERTAINMENT AND RECREATION
- ENVIRONMENT ISSUES
- AGRICULTURAL APPLICATIONS
- MANUFACTURING AND INDUSTRIAL APPLICATIONS
- ENERGY AND TRANSPORT

The Design Brief and Folio required

Competitors are required to use control circuits and programming for an invention displaying innovation.

Competitors are required to be creative in this section to demonstrate an idea or model that is marketable as a commercially viable product.

The invention and innovation uses the programming of microcontrollers to perform tasks with ezSystem programs.

The invention must have a strong ethics component to improve the human condition or quality of life.

The competitor(s) must demonstrate and present an exhibit that-

- (a) demonstrates enterprise and a marketing strategy with a social and ethical emphasis
- (b) contains a folio in the investigation, planning and evaluation stages of the invention
- (c) can demonstrate the working invention to judges with a verbal discussion.

The themes may be applicable in the local, state or global context.

Judging requirements for individual adult competitions -

Competitors will be invited by the Royal Show to attend on judging days to demonstrate and discuss with the judges, their innovative control system.

The individual or a small group (about 6 people representing a team) will be invited by the Royal Show to display the work.

The invention must be working and have a good standard of display and finish to the public.

Both types of competitors must display the invention with a folio as a marketing tool of back up work that shows –

- (a) A title page with the exhibit number, class number and title of the invention
- (b) The design brief
- (c) A description of the technology systems used
- (d) The investigation and analysis of materials (traditional and advanced)
- (e) The investigation and analysis of systems used to manufacture and control the invention
- (f) Graphics showing ideas and final stages of concepts realisation of the innovation
- (g) A Print of the control program with some photos of construction and final working stages.
- (h) An evaluation describing a vision statement and marketing strategy for your invention, with a social and ethical emphasis.

NB - The folio needs to be about 15 A4 pages long and be presented on the day with the invention. The programs need to be in a PC windows format, readable and based on ezSystems from eLabtronics, Adelaide.

INDIVIDUAL PRIZE CATEGORIES

The themes for an individual prize (applicable in the local, state or global context are) -

- Entertainment and Recreation
- Environmental Issues
- Agricultural Applications
- Manufacturing and Industrial Applications
- Energy and Transport Applications

Some topics could include –animatronics, systems reducing CO2 emissions, waste disposal, water, soil and air conservation, improving productivity from the land, improve quality and quantity control of manufacturing processes, an alarm system, a smart street light, a white goods control system, a model of low energy housing construction, heating, cooling, lighting and water saving system, a light house, a seed sower, etc.

ADULT DIGITAL TECHNOLOGIES

Class 704 - Entertainment and Recreation

Class 705 - Environment Issues and Agricultural Applications

Class 706 - Manufacturing and Industrial Applications

Class 707 - Energy and Transport

THE ELABTRONICS PRIZE

for

**BEST EXHIBIT IN INNOVATION, INVENTION
AND ENTERPRISE ROBOTICS COMPETITION
MADE BY AN ADULT**

- Product (value \$450) sponsored by eLabtronics

CATEGORY 8A - STEMSEL MICROCONTROLLERS AND ROBOTICS

Competitors will be advised of any changes to times.

Pre Show Competition Dates for 2016:

Thursday 25 and Friday 26 August

- Egg Incubator, Soccer, Line Following and UAV Quadcopter Competitions
- Smart City and Farms

Finalists will be chosen and nominated by the judges to appear in Show week and are required to demonstrate their programming skills to the judges and public to obtain their ranking of prizes.

Finalists days for individuals and groups during the Show:

Monday 5 September

Tuesday 6 September

Wednesday 7 September

Thursday 8 September

Friday 9 September

Prize Award Ceremony - Friday 9 September

Schools Group Competitions Innovation and Enterprise: Thursday 25 August

STEMSEL COMPETITION 1 - CONTROL CIRCUITS AND PROGRAMMING - THE EGG INCUBATOR

Participants are required to design and construct with eLabtronics, ezSystem kits and microcontrollers an egg incubator for use as an agricultural application. The incubators will be actively running through the show week and require testing of performance before the judging.

Class 728 - Up to and including Year 7

Class 729 - Year 8/9

Class 730 - Year 10

Class 731 - Year 11/12/13/VET

**THE ELABTRONICS PRIZE BEST
for**

**EXHIBIT IN ADVANCED CONTROL
TECHNOLOGIES (EGG INCUBATOR)**

- Product (value \$450) sponsored by **eLabtronics**

Demonstrations and interactive exhibit including Innovation Invention and Enterprise exhibits will occur throughout Show week.

Materials, programs hardware and software

You will need to provide your project with software packages from eLabtronics, Adelaide.

You will need to bring a laptop computer (240V, AC Supplied) a program prepared and the performing, working model.

Description and details will be supplied through – web address for all 3 competitions in this section <http://www.elabtronics.com>

Judges will be looking for quality and originality with the -

- design of circuit
- design of the hardware
- efficiency of control
- manufacture of the “components of the circuit and finish of the product”
- performance
- sensitivity to STEMSEL and UNESCO priorities in the community

STEMSEL COMPETITION 2 - UAV (UNMANNED, AERIAL VEHICLE)

Using control circuits and programming.

Aviation and avionics with assistance from the RAAF and STEMSEL circuitry.

Special Conditions

This competition will be held before Show week and those chosen to be of a suitable standard will perform their exhibits also during Show week. For information on further specifications and judging requirements email Miro miro@elabtronics.com or the website www.elabtronics.com

Class 732 - Up to and including Year 7

Class 733 - Year 8/9

Class 734 - Year 10

Class 735 - Year 11/12/13/VET

**THE ELABTRONICS PRIZE
for
BEST EXHIBIT IN CONTROL TECHNOLOGIES
(UNMANNED AERIAL VEHICLE)**

- Product (value \$450) sponsored by **eLabtronics**

STEMSEL COMPETITION 3 - ROBOTICS (LINE FOLLOWING)

Judging requirements

Robots designed with software and hardware from eLabtronics, are to compete with each other to follow a line on a field. The race track is a black paper sheet mat with a white line twisting and turning from start to finish. The track has simple and more complex turns. The robots should sense the line and the program be adjusted by the competitor in the Show week. Times are taken for efficiency of the program. Judges will be looking for originality of design of hardware and efficiency of system of control

Class 736 - Up to and including Year 4

Class 737 - Year 5/6/7

Class 738 - Year 8/9

Class 739 - Year 10

Class 740 - Year 11/12/13/VET

THE ELABTRONICS PRIZE for

BEST EXHIBIT IN CONTROL TECHNOLOGIES (ROBOTICS FOCUS LINE FOLLOWING)

- Product (value \$450) sponsored by **eLabtronics**

STEMSEL COMPETITION 4 - ROBOTICS (SOCCER VIA REMOTE CONTROL)

Judging Requirements

Robots designed with software and hardware to compete with each other and to place a ball in a goal, using a remote control such as a Playstation 2 (PS2) controller device. Another competitor may be on the field (if time permits) to be a defender and the other an attacking robot. The robots may sense the other robot, sense the position in the field and be able to be controlled with a program, such as eLabtronics (ezSystem).

Class 741 - Up to and including Year 4

Class 742 - Year 5/6/7

Class 743 - Year 8/9

Class 744 - Year 10

Class 745 - Year 11/12/13/VET

THE ELABTRONICS PRIZE for

BEST EXHIBIT IN ADVANCED CONTROL TECHNOLOGIES (ROBOTICS FOCUS SOCCER)

- Product (value \$450) sponsored by **eLabtronics**

SCHOOLS STEMSEL TECHNOLOGY - INNOVATION, INVENTION AND ENTERPRISE (PART 1)

Please refer to the inside front cover for Closing Date of Entries, Staging, Judging and Collection times.

This competition is design brief and problem based learning (PBL) requiring back up work and the competitor attending the competition day(s). There are 2 competitions:

1. The individual prize winner – a choice of 5 topics
2. The group or team prize winner – a choice of 2 topics

The Design Brief

Competitors are required to use control circuits and programming for an invention displaying innovation.

Competitors are required to be creative in this section to demonstrate an idea or model that is marketable as a commercially viable and sensitive product to STEMSEL and UNESCO priorities.

The invention and innovation uses the programming of microcontrollers to perform tasks with ezSystem programs.

The invention must have a strong ethics component to improve the human condition or quality of life.

The competitor(s) must demonstrate and present an exhibit that –

- (a) demonstrates enterprise and a marketing strategy
- (b) contains a folio in the investigation, planning and evaluation stages of the invention
- (c) can demonstrate the working invention to judges with a verbal discussion

The themes may be applicable in the local, state or global context.

Judging requirements for both individual and team competitions –

Competitors will be invited by the Royal Show to attend on judging days to demonstrate and discuss with the judges, their innovative control system.

The individual or a small group (about 6 people representing a team) will be invited by the Royal Show to display the work.

The invention must be working and have a good standard of display and finish to the public. Both types of competitors must display the invention with a folio as a marketing tool of back up work that shows –

- A title page with the exhibit number, class number and title of the invention
- The design brief
- A description of the technology systems used
- The investigation and analysis of materials (traditional and advanced)
- The investigation and analysis of systems used to manufacture and control the invention
- Graphics showing ideas and final stages of concepts realisation of the innovation
- A Print of the control program with some photos of construction and final working stages.
- An evaluation describing a vision statement and marketing strategy for your invention and sensitivity to STEMSEL and UNESCO priorities, with accounting/enterprise and innovation strategies.

NB - The folio needs to be up to 15 A4 pages long and be presented on the day with the invention.

The programs need to be in a PC windows format, readable and based on ezSystems from eLabtronics, Adelaide.

INDIVIDUAL PRIZE CATEGORIES

The themes for an individual prize (applicable in the local, state or global context are) - Entertainment and Recreation

Environmental Issues & Agricultural Applications

Manufacturing and Industrial Applications

Energy and Transport Applications

Some topics could include –animatronics, systems reducing CO2 emissions, waste disposal, water, soil and air conservation, improving productivity from the land, improve quality and quantity control of manufacturing processes, an alarm system, a smart street light, a white goods control system, a model of low energy housing construction, heating, cooling, lighting and water saving system, a light house, a seed sower, etc.

SCHOOLS STEMSEL - INNOVATION, INVENTION & ENTERPRISE: ENTERTAINMENT & RECREATION

Class 746 - Up to and including Year 8

Class 747 - Year 9/10

Class 748 - Year 11/12/13

SCHOOLS STEMSEL - INNOVATION, INVENTION & ENTERPRISE: ENVIRONMENT ISSUES & AGRICULTURAL APPLICATIONS

Class 749 - Up to and including Year 8

Class 750 - Year 9/10

Class 751 - Year 11/12/13

BEST EXHIBIT IN SCHOOLS STEMSEL - INNOVATION, INVENTION & ENTERPRISE: ENVIRONMENT ISSUES & AGRICULTURAL APPLICATIONS

SCHOOLS STEMSEL - INNOVATION, INVENTION & ENTERPRISE: MANUFACTURING & INDUSTRIAL APPLICATIONS

Class 752 - Up to and including Year 8

Class 753 - Year 9/10

Class 754 - Year 11/12/13

SCHOOLS STEMSEL - INNOVATION, INVENTION & ENTERPRISE: ENERGY & TRANSPORT

Class 755 - Year 8/9/10

Class 756 - Year 11/12/13

THE RA & HS EDUCATION FOUNDATION OF SA INC PRIZE

for

BEST EXHIBIT IN INNOVATION, INVENTION AND ENTERPRISE AWARD IN ROBOTICS COMPETITION IN 2016

The individual winner will receive 2 return economy tickets for the winner and an adult to travel to an overseas destination (TBA) to compete in a STEM Competition.

- Voucher (value \$3,000) sponsored by

Royal Agricultural and Horticultural Education Foundation of South Australia Inc.

STEMSEL TEAM COMPETITION

The Design Brief

Competitors are required to use control circuits and programming for an invention displaying innovation.

With an idea or model of a sustainable system for either a -

1. Smart City or a
2. Smart Farm

The innovation, invention and enterprise competition models use the programming of microcontrollers to perform tasks with ezSystem programs.

The invention must be active and can be used by the public as an interactive display. The invention/ display must be eye catching. The team will be required at times to discuss their invention with the public and observed by the judges.

The display can be no larger than 1800mm x 1200mm.

The invention may have a solution to some of these problems. Examples could include traffic control, waste disposal and sanitation, improving productivity, transport and energy, lighting, cooling and heating, power generation, communication systems, fresh water and storage, soil erosion etc

Judges' Special Comment

The judges will be looking for an innovative approach with strong ethics and "green approach" to the problem to be solved.

The Team Competition entries may be selected and displayed at the Royal Show at different times due to limited space. Teams will be advised by The Royal Show and eLabtronics, Adelaide.

STEMSEL TEAM COMPETITION: SMART FARM

Class 757 - Up to and including Year 8/9/10

Class 758 - Year 11/12/13

STEMSEL TEAM COMPETITION: SMART CITY

Class 759 - Up to and including Year 8/9/10

Class 760 - Year 11/12/13

THE ELABTRONICS PRIZE

for

BEST EXHIBIT IN INNOVATION, INVENTION AND ENTERPRISE ROBOTICS COMPETITION MADE BY A SCHOOL GROUP

- Voucher (value \$3,000) sponsored by **eLabtronics**



ROYAL AGRICULTURAL &
HORTICULTURAL SOCIETY OF
SOUTH AUSTRALIA INCORPORATED

