



Latest events >>

For the latest events and conference information go to STAV's website:
www.stav.org.au

For information about science activities & competitions go to:
www.stav.org.au

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Conferences/Events

The STAV event calendar which includes all PD/conferences and science activities for the year is available on the STAV website: www.stav.org.au

Physics Workshops 2011

Popular small-group workshop scheduled for 11 November 2011 at STAV House. Opportunities are also available for schools, including regional areas, to conduct the workshops in-house. Refer to our website for more information <http://www.sciencevictoria.com.au/otherPD.html>

Science Talent Search

Exhibition day Wednesday 2 November. More information on pages 4 and 5, and on the STS website www.sciencevictoria.com.au/sts

STAVCON: *Building Knowledge*

The program is on the Science Victoria website.
<http://www.sciencevictoria.com.au/STAVCON.html>

Energising Science and Mathematics Education in Victoria

<http://www.education.vic.gov.au/about/directions/mathsciencestrategy.htm>

Another FREE offer for readers of eContact only

STAV has a limited number of free copies of The Universe Season 5 DVD. This offer is for readers of eContact only. See page 12 for more information. Contact Ellen at STAV projects@stav.vic.edu.au if you receive eContact as an Individual Member or Subscriber.



STAV is on Facebook
go to www.stav.org.au



Join STAV on Twitter
www.stav.org.au



STAV Contacts

STAV Council

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Beginning Science Teachers' Network

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Science Victoria

Science Victoria hosts professional development activities on behalf of the Science Teachers' Association of Victoria Inc. (STAV)

Life Members

David Cohen	Gretta Wilkinson
Rod Fawns	Don Lugg
Dick Gunstone	Mark Learmonth
Jim Stevenson	

Contact enquiries

? For enquiries about **Contact newsletter** including advertising opportunities please contact the STAV Publications Officer phone: (03) 9385 3903 or email: publications@stav.vic.edu.au

Contact newsletter is also accessible in an electronic version via email as a PDF. The electronic version is available up to 1 week earlier than the distribution of the printed copies of Contact.

If you prefer to receive Contact newsletter by email rather than the printed version please email STAV: stav@stav.vic.edu.au

President's Report



I would like to acknowledge and thank all who attending the 2011 STAV AGM and the members who sent through proxies on the 20th October. All motions were carried.

STAV Council took on the feedback from last year's AGM requesting that we explore communicating with members in 'real time' and consequently we have been one of the first Science Teachers' Associations in the country to utilise social networking with our tweeter and Facebook accounts.

You can catch the latest news or post messages on either tweeter or Facebook via @STAVscience and Science Teachers' Association of Victoria Inc (STAV) respectively.

November also began with the celebration of our 60th Science Talent Search, with this year's theme 'React to Chemistry'. Our STS celebrates science in all its facets which is illustrated through the variety of categories, ensuring all students have an opportunity to engage and connect with science. Some of the categories include Experimental Research, Creative Writing, Games, Computer Programs - Games & Simulations, Science Photography and Inventions! Well done to all participating students, their families and a big thank you to their teachers and schools. I would also like to acknowledge all involved with the STS Committee, the wonderful sponsors and Professor Brian McGaw and the Faculty of Science, Technology and Engineering at La Trobe University who together ensure that this continues to be a very successful event.

Australian Curriculum F-10 Update:

The final Australian Curriculum content and achievement standards for F-10 Science was endorsed on 14 October 2011. Implementation of the new achievement standards commences in 2013.

The following VCAA site provides three links:

<http://www.vcaa.vic.edu.au/foundation10/f10index.html>

The first is an overview of the Australian Curriculum, the structure in Victoria, AusVELS and a set of planning and implementation resources.

The second is a link to the current VELS curriculum that will continue to be the curriculum for the Victorian Government and Catholic schools in 2011-2012.

The third is a link to the new AusVELS curriculum that will be the single mandated curriculum for Victorian

Government and Catholic schools from 2013 onwards. AusVELS will also be available to all Independent schools as a model and resource for the effective implementation of the Australian Curriculum.

The AusVELS website is available from Monday 14th November 2011; it will be an online publication with no hard copies published.

A reminder that registration to participate in the VCAA 2012 trialling of these achievement standards closes 11 November 2011. Confirmation will be provided to schools by Friday 2nd of December 2011.

For more information on participating in the trialling please visit the following link:

<http://www.vcaa.vic.edu.au/natcurric/trialschools.html>

Soula Bennett
STAV President

Project Officer's Report



STAV Publishing will have a table in the foyer at STAVCON and all STAV Publishing products will be on display. A small number of items will be available for purchase on the day, some with discounts.

The Semester 1 2012 Trial Exam order form will be posted on the Science Victoria and STAV Publishing websites during November (www.sciencevictoria.com). You can order your 2012 papers as soon as the form is available. Prices are unchanged.

You can find out more about STAV Publishing products from our primary and secondary catalogues which are available in hardcopy and are also on the STAV Publishing website. Go to the Science Victoria site www.sciencevictoria.com and follow the STAV Publishing links.

Ellen Finlay
Project Officer, STAV Publishing
Phone: 9385 3999
Fax: 9386 6722
Email: projects@stav.vic.edu.au

Science Talent Search Report



Exhibition and Presentation Day was held on Wednesday 2nd November at La Trobe University. Hundreds of proud students, teachers and parents attended, exhibited entries and participated in presentation ceremonies. We extend our thanks to sponsors, presenters and announcers, and of course to all STS committee members and other volunteers for their tireless efforts in running a very successful day.

This year we had 2644 students enter STS from 143 schools. We awarded a total number of 554 bursaries from a sponsorship pool of \$30,672.

Science Talent Search is a particularly rewarding experience for both students and teachers. It requires commitment and hard work from all parties; and almost inevitably it leads to great rewards at the end.

This year, again, all Major Bursary winning entries from Experimental Research are eligible to enter the National BHP Billiton Science Awards providing an additional opportunity for our Science Talent Search students to develop their science skills and win significant cash awards. Winning entrants get a trip to the USA Science Fair.

Cheques for students unable to attend the Presentations are mailed to schools during November.

Uncollected country projects will only be returned to your school if you request it. Otherwise, all uncollected entries are disposed of.

As always, the STS committee requires new members for 2012 to replace those who are retiring. If you are interested in contributing to the running of STS please contact Ellen Finlay at STAV by phone or email (9385 3999; projects@stav.vic.gov.au). The competition relies almost solely on volunteers to operate.

Leonie Lang
STS Co-Director

Science Drama Awards Report



Recent winners of the secondary school section of the Science Drama Awards will introduce you to another way of engaging students in the classroom. To find out more, sign up for session D7 (abstract below) on Tuesday November 29 at 10-45am.

STAVCON 2011

Session: D7

Session title: Science on Stage

Presenters: Helene Hiotis & Naomi Murdoch

Canterbury Girls' Secondary College

Imagine working with a class to perform a play on stage. Schools across Victoria have explored this notion and in this workshop, we show you how easy it is to prepare and present a ten minute performance using song and dance. A range of songs will be used to develop scripts such as 'You can tell it is a cell', 'Bernoulli, He's My Guy', 'Get Your Molecules Movin' and 'Matter is Everywhere'. Come prepared for an engaging and exciting workshop that will leave you convinced that science on stage is a component of every science class!

Suitable for: Years P – 10, Topics: General, Limit: 40, Not repeated

Jan Campione
Director
Science Drama Awards

Receive *Contact* as an eNewsletter

All STAV members and subscribers can choose to receive *Contact* monthly by email.

How do you arrange to get *Contact* as an eNewsletter?

Email STAV stav@stav.vic.edu.au and request that we add you to the eNewsletter distribution list. Make sure you specify the email address you wish to use. You'll automatically receive the next edition by email. You will no longer receive a hardcopy version.

Science Talent Search 2011



2011 Theme: React to Chemistry

Exhibition and Presentation Day:

Wednesday 2 November 2011.

Check the Science Talent Search website for information about the competition www.sciencevictoria.com.au/sts



The Department of Education and Early Childhood Development is proud to be the major sponsor for the Science Talent Search.

Science Drama Awards 2011

Performance Night winners

The Archimedes Award - Nanneella Estate Primary School with Comm. Quest!

The Aristotle Award - St Leonard's College with How Science Ruined My Childhood



Walter+Eliza Hall
Institute of Medical Research

Scientific discoveries explained through 3D animation

WEHI.TV creates engaging, powerful and scientifically accurate animations. They are a useful teaching resource, and can be provided on DVD.

The animations are relevant to science curriculums, covering topics such as:

DNA ♦ Malaria ♦ Fighting infection

To request copies of **WEHI.TV** animations, contact Alice Robinson via alicer@wehi.edu.au or 03 9345 2929. For more information, visit www.wehi.tv

New Members

Welcome to the following new individual members of STAV

James Alexander

Anthony Argentaro

Claire Armstrong

Dr Mark Carroll

Mai Dang

Katherine Hastings

George Nykoluk

STAV Membership 2011

STAV Individual Membership fees:

Individual Primary	\$125
Individual Secondary	\$140
Individual both Primary/Secondary	\$175
Laboratory Technicians	\$105

The subscription of a member ceases to be effective if payment is not received prior to or on the date of renewal, as a result, membership and all rights pertaining thereto will lapse. Upon payment of all arrears, membership will resume from the date of payment.

How to join STAV

Download a form from our website www.stav.org.au/html/membership.html

You can also join online from this site.

Alternatively, contact the STAV office for more information: 03 9385 3999

Labtech list

The Labtech list has been set up by STAV as a discussion forum where Laboratory Technicians can exchange information, share ideas and seek advice.

We ask science co-ordinators to encourage their Laboratory Technicians to become a member of Labtech and participate in the discussion group.

It is free to join. Go to the Science Victoria website for more information:

www.sciencevictoria.com.au/labtech.html

Upcoming Conferences – dates & rates

For all conference/PD information including programs and online registration check the Science Victoria website approximately 6 - 8 weeks prior to each conference:

www.sciencevictoria.com.au/conferences.html



These programs can also be found on the VIT Pdi search engine – all listed programs reference the standards of professional practice for renewal of VIT registration www.vit.pdi.vic.edu.au

Physics Workshops

These workshops are intended for teachers of years 5-10 science who wish to develop their own conceptual understanding; the concepts are presented at the level of year 9 – 11 students.

Electricity – 11 November 2011

More information and registration details at www.sciencevictoria.com.au/otherPD.html

In-House Professional Learning Sessions

- ICT in Science
- Science Talent Search
- Physics (Electricity and Laws of Motion)

Contact STAV for details or visit Science Victoria's website.

STAVCON 2011 – Monday 28 and Tuesday 29 November 2011 at La Trobe University.

Theme: *Building Knowledge*

The program is now available

Register online.

www.sciencevictoria.com.au/STAVCON.html

Conference rates

STAV Individual members

one day\$210
two days.....\$300

STAV school subscribers/non-members

one day\$320
two days.....\$450

STAV school subscribers (more than 3 teachers)

If you send more than 3 teachers from your school

Special rate for 4th & subsequent teachers:

one day\$235
two days\$335

Primary teachers (Tuesday only)

STAV Individual members\$145
STAV school subscribers/non-members\$185

Student / Retired teachers

one day \$75
two days \$150

VCE Conference Series 2012

Physics – Friday 17 February, 2012 at Monash University

Biology and Environmental Science – Monday 20 February, 2012 at La Trobe University

Chemistry – Friday 24 February, 2012 at La Trobe University

Call for sessions is open.

Contact the STAV business centre: Phone: 9385 3999 or email: stav@stav.vic.edu.au

Semester One 2012 @ Scienceworks

Bookings open 1 Dec 2011

New Exhibitions

Our Water

18 February – 15 April
Suitable for Years 3 - 10

Our Water features exciting hands-on activities that challenge you to make smart water decisions and examine the consequences of wasting water in Australia. The exhibition looks at how water is used in the home and explores innovative technologies used for water saving from urban, agricultural, industrial and environmental perspectives.

Developed by Questacon – The National Science and Technology Centre, Canberra and proudly sponsored by the National Water Commission.

**Book 8.30am to 4.30pm weekdays
on 9392 4819**

Playing With Light

24 April – November
Suitable for Years 3 – 8

Playing with Light combines basic physics principles, innovative interactive experiences and a sense of fun to explore how we use light in our everyday lives. The exhibition explores refraction, reflection and colours. It looks at how the scientific field of optics has led to the development of lasers, holograms, fibre optics and more; and how light is now used in applications such as medicine, communications and security.

Developed by Scitech, Perth

New planetarium show

Tilt, the reasons for the seasons

Suitable for Years 3 – 8

Join Annie, Max and their robot friend as they fly into space to discover how the seasons work. Examining the path of the Sun and the tilt of the Earth, they find out about day and night. They also explore why the seasons are opposite in the Northern and Southern Hemispheres.

Maths Programs

Our popular hands-on workshops Measurement and Technology – using Data Loggers and Problem Solving will be available for Term One. These can be booked in conjunction with the Sporty Maths self-guided program to make a valuable maths excursion for your students

See our website for our full range of programs and other suggested excursion itineraries.
museumvictoria.com.au/education

**2 Booker Street Spotswood
museumvictoria.com.au/education**



SCIENCEWORKS



Science Coordinators' Handbook

This handbook contains ideas, strategies and information relevant to leading and managing your science faculty. Suitable for inexperienced, experienced and aspiring coordinators. Includes a CD-Rom containing useful templates, samples and other tools.



Cost

\$33 Members
\$44 Subscribers/non-members

For further information contact

STAV Publishing
Ph: (03) 9385 3999 or
Email: projects@stav.vic.edu.au



VCE Trial exam papers

STAV Publishing produces VCE trial exams for:

Unit 2

Physics
Chemistry
Biology
Psychology

Unit 4

Physics
Chemistry
Biology
Psychology

Costs

Papers \$4.00; Solutions \$2.00

Past Trial Exams are also available.

How to order

Download an order form from:

www.sciencevictoria.com.au/stavpublishing/index.html

or

Contact Ellen Finlay
STAV Publishing
Ph: 03 9385 3999
Fax: 03 9386 6722
Email: projects@stav.vic.edu.au



Brain Box Electronics kit for Primary and Lower Secondary

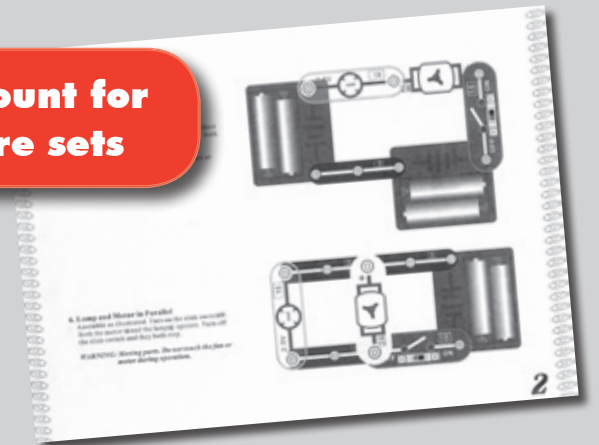
This kit includes 188 ideas for constructing different circuits on a base board. These circuit boards can be activated by magnet, water, light, touch or sound and produce different kinds of reactions such as flashing bulbs, motorized fans, flying discs and various sound effects. Examples include a water activated doorbell, sound activated doorbell, magnetically activated motors, and electric fan. All components have snap fasteners which make assembly very easy and quick. All components are coded so that young children (and adults!) can easily follow construction diagrams.

Members/subscribers \$38 (incl GST)
Non-members \$45 (incl GST)
 Postage and handling additional.

10% Discount for 5 or more sets

Need spare parts?

Have you lost some pieces? Would you like to extend the capability of your current set? Spare parts for all components of the Brainbox are available. For a price list contact STAV Publishing, or check the website.



STAV Publishing

PO Box 109, Coburg Vic 3058 • Fax: 03 9386 6722 • Ph: 03 9385 3999

Email: projects@stav.vic.edu.au • Web: www.sciencevictoria.com.au/stavpublishing/index.html

ImmuKNOW

Teaching resource for Unit 3 Biology immunology concepts

Are your students confusing APCs, B-cells and T-cells?

ImmuKNOW is your solution!

ImmuKNOW is an easy to use visual teaching resource with movable immune cell representations for use on whiteboards. Each component has a magnetic strip which allows it to be attached to magnetic whiteboards or any other flat steel surface.

ImmuKNOW is colourful, engaging and clearly visible. It allows easy visualization of receptor/cell interactions such as T-cell receptors and MHCs. It can be used by both teachers and students.

ImmuKNOW consists of 3 separate kits:

- Kit 1 Immunity to infection
- Kit 2 Allergy and allergic reactions
- Kit 3 Humoral immunity

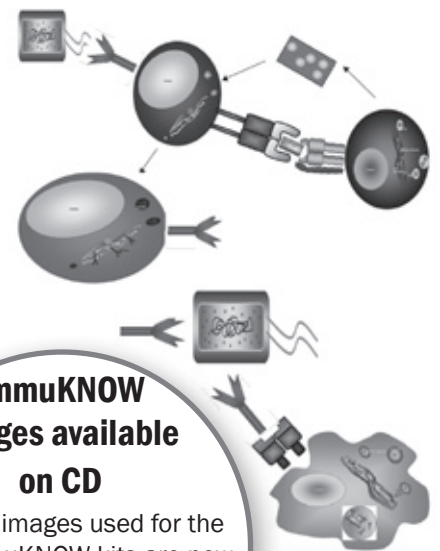
Each kit is accompanied by an instruction booklet.

Price per kit

Member \$90 (includes GST); postage & handling \$8
 Non member \$95 (includes GST); postage & handling \$8

How to order

Fax, post or email purchase order to: STAV Publishing
 Fax: 9386 6722 PO Box 109, Coburg VIC 3058
 Email: projects@stav.vic.edu.au
 Enquiries: 03 9385 3999



ImmuKNOW images available on CD

All of the images used for the three ImmuKNOW kits are now available for purchase on CD. Go to www.sciencevictoria.com.au/stavpublishing/immuknow.html



ImmuKNOW kits were developed and previously distributed by SYNERGYA Young Achievement Australia program.



Green Car Loan
9.19% p.a.
 Comparison Rate
9.32%¹ p.a.

Green Personal Loan
10.15% p.a.
 Comparison Rate
10.77%² p.a.

green your world

Bring your eco-friendly ambitions to fruition. Our Green Loan range has been designed to help our environment and your hip pocket with:

- A reduced interest rate.
- No monthly fees.
- Flexible repayment options.
- Free redraw (minimum \$500).

For further information including eligibility criteria, or to apply, call **1300 654 822** or visit www.victeach.com.au.



1. Comparison rate calculated on a secured loan amount of \$30,000 for a term of five years. 2. Comparison rate is calculated on an unsecured amount of \$10,000 for a term of three years. WARNING: The comparison rates are true only for the examples given and may not include all fees and charges. Different terms, fees and other loan amounts might result in a different comparison rate. A comparison rate schedule is available on request from our branches. Terms and Conditions upon request.

Professional learning and support programs

• ICT in science • Science Talent Search • Physics

Would your school benefit from flexible, in-house instruction or mentoring for ICT, Physics (laws of motion, electricity) or Science Talent Search?

STAV is offering opportunities for schools to participate in small group sessions of customised learning in one or all of these areas. You can form a small group of teachers within your own school or in partnership with a neighbouring school. You can participate in a short one or two hour session, a series of three or four sessions or have a mentor visit your classroom to assist you to apply new skills or ideas.

After expressing your interest, STAV will negotiate your requirement, try to source an appropriate educator to suit your needs and develop an appropriate professional learning program.

A small but affordable fee will apply and will be determined according to your requirement.

Our aim is to assist both metropolitan and regional schools where possible.

If you are interested in participating contact STAV to discuss your ideas:

Phone: 9385 3901

Email: projects@stav.vic.edu.au





Britannica PATHWAYS SCIENCE

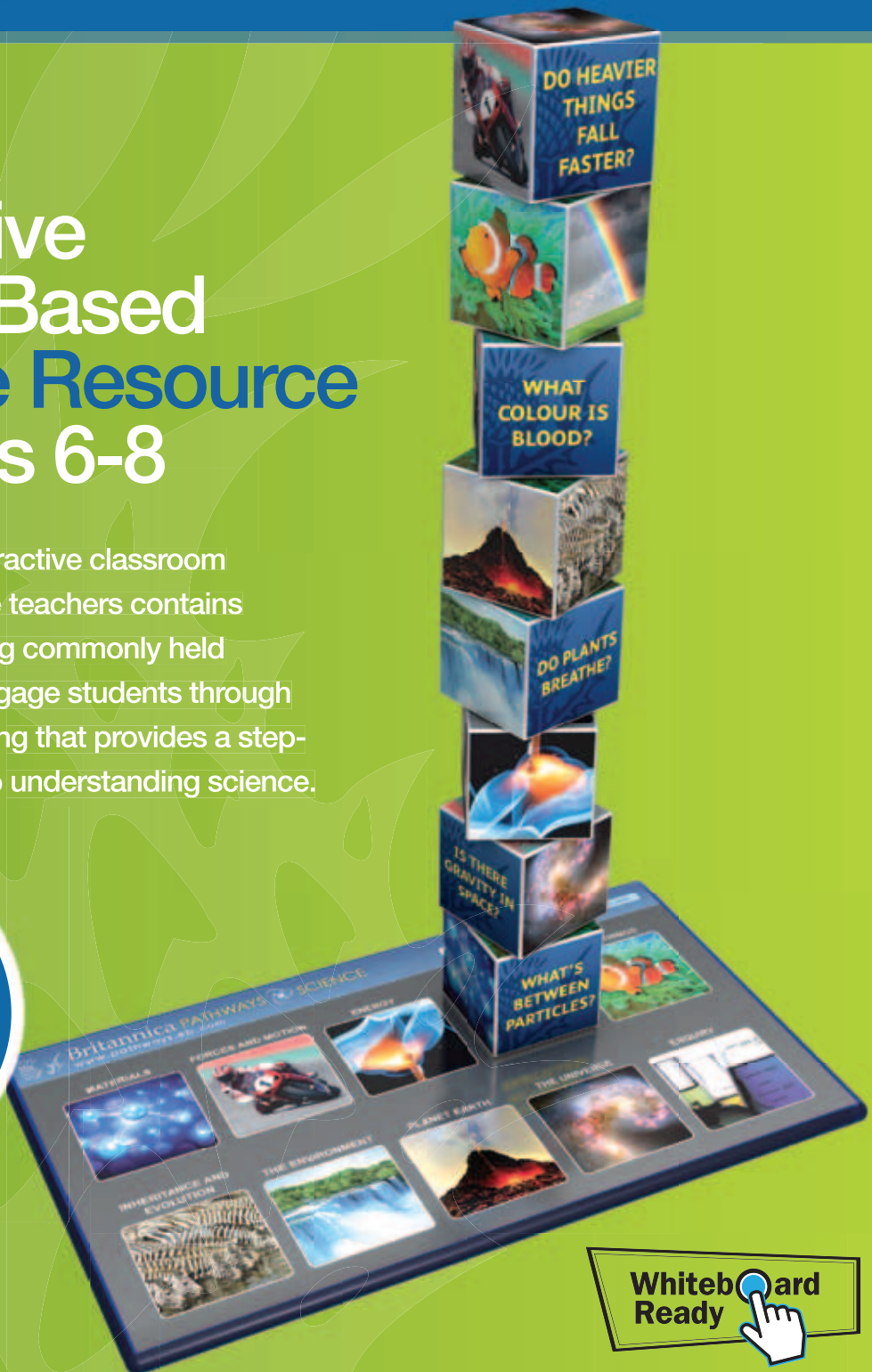
Innovative Inquiry Based Science Resource for Years 6-8

This new online interactive classroom resource for science teachers contains 100 lessons targeting commonly held misconceptions. Engage students through inquiry-based learning that provides a step-by-step approach to understanding science.

Visit us at

**STAVCON
STAND #8**

Book a preview and free trial for your school !



Whiteboard Ready



Britannica
Digital Learning

Encyclopædia Britannica Australia Ltd. Level 1, 9 Help Street Chatswood, NSW 2067

02 9915 8800

Contact: Linda Wright
or email: bol@eb.com.au

<http://edu.eb.com>

THE BAD SCIENCE SHOW



"To keep over a hundred boys on the edge of their seats for an hour is an amazing achievement. We're so glad he could be a part of our Science Week program."

- Scotch College

"Bad Science was a real treat for staff and students!"

- Dela Salle College

"Bad Science uses humour and magic to demonstrate dubious scientific claims to high school students".

- The Australian



As seen on Channel 9's
Kid's WB



www.thebadscienceshow.com

0409461776

Illuminated pocket microscope

A small, portable microscope that is ideal for young children, adolescents and adults to investigate a multitude of items including clothing fibres, plants, insects or any other scientific specimen. There is no need for small extracted samples – simply remove the slide tray, walk around the room and place the viewfinder above the item you wish to view.

The microscopes are small (14cm x 4.5cm), light (80 grams) and easy to grip, maneuver and adjust. The light source is strong.

These small but powerful instruments are ideal for in the classroom, outside in the school yard, or for taking on excursions and fieldwork. They are fully portable and no bench or table is necessary for resting on.

Microscope activities

The microscopes include activity suggestions. If you have already purchased the product you can download the activities from:
www.sciencevictoria.com.au/stavpublishing/pocketmicro.html

Features

- Zoom switch – adjusts magnification power (60x - 80x - 100x)
- Focus wheel.
- Direct light source to specimen
- Removable slide tray

The light operates from two AA batteries (not included).

Price

\$25 (incl. GST) STAV members/institutional subscribers

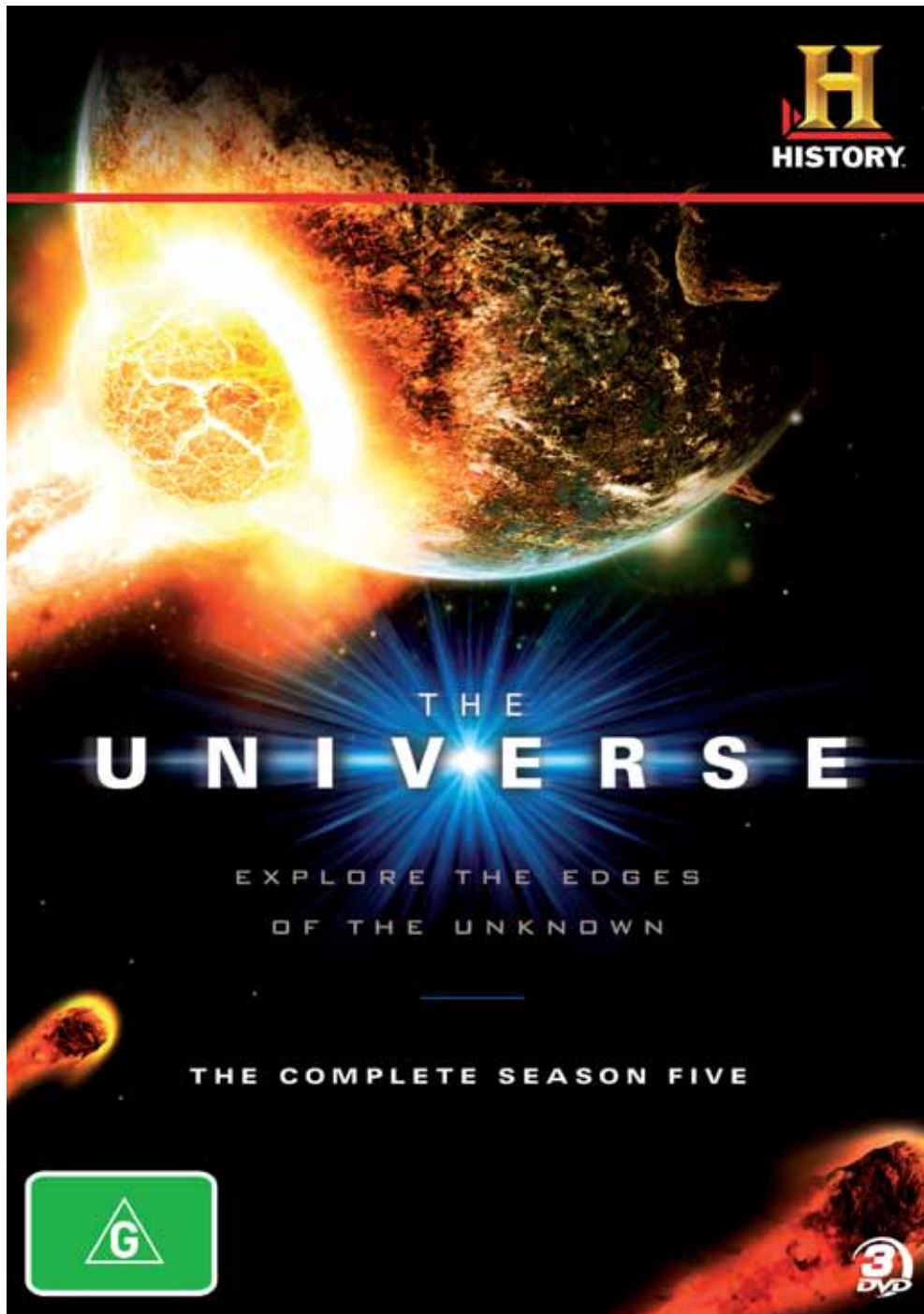
\$30 (incl. GST) Non-members
10% Discount for bulk purchases (more than 5 items).

Postage and handling: \$8 (incl. GST)

For enquiries contact:

STAV Publishing
PO Box 109 Coburg VIC 3058
Telephone (03) 9385 3999
Email: projects@stav.vic.edu.au





Another FREE offer for readers of eContact only

We have a limited number of free copies of The Universe Season 5 DVD.

Using the latest in immersive 3D technology, HISTORY™ presents the 7 Wonders of the Solar System in stunning clarity. Broadcast on 7Mate and now with a cumulative US audience of over 70 million viewers, The Universe Season 5 explores robotic rovers on Mars, NASA probes slamming into comets, and deep space telescopes capturing the birth of stars.

This offer is for readers of eContact only.

If you would like one of the Season 5 DVDs, contact Ellen at STAV projects@stav.vic.edu.au if you receive eContact as an Individual Member or Subscriber.

First in, first served.

Scientists play ping-pong with single electrons

Research provides important technique for transferring quantum information

Scientists at Cambridge University have shown an amazing degree of control over the most fundamental aspect of an electronic circuit, how electrons move from one place to another.

Researchers from the University's Cavendish Laboratory have moved an individual electron along a wire, batting it back and forth over sixty times, rather like the ball in a game of ping-pong. The research findings, published today (22 September) in the journal *Nature*, may have applications in quantum computing, transferring a quantum 'bit' between processor and memory, for example.

Imagine you are at a party and you want to get to the other side of a crowded room to talk to someone. As you walk you have to weave around people who are walking, dancing or just standing in the way. You may also have to stop and greet friends along the way and by the time you reach the person you wanted to talk to you have forgotten what you were going to say. Wouldn't it be nice to be lifted up above the crowd, and pushed directly to your destination?

In a similar way, electrons carrying a current along a wire do not go directly from one end to the other but instead follow a complicated zigzag path. This is a problem if the electron is carrying information, as it tends to 'forget' it, or, more scientifically, the quantum state loses coherence.

In this work, a single electron can be trapped in a small well (called a quantum dot), just inside the surface of a piece of Gallium Arsenide (GaAs). A channel leads to another, empty, dot 4 microns (millionths of a metre) away. The channel is higher in energy than the surrounding electrons. A very short burst of sound (just a few billionths of a second long) is then sent along the surface, past the dot. The accompanying wave of electrical potential picks up the electron, which then surfs along the channel to the other dot, where it is captured. A burst of sound sent from the other direction returns the electron to the starting dot where the process can be repeated. The electron goes back and forth like a ping-pong ball. Rallies of up to 60 shots have been achieved before anything goes wrong.

"The movement of electrons by our 'surface acoustic wave' can also be likened to peristalsis in the oesophagus, where food is propelled from the mouth to the stomach by a wave of muscle contraction," explains Rob McNeil, the PhD student who did most of the work, helped by postdoc Masaya Kataoka, both at the University of Cambridge's Department of Physics, the Cavendish Laboratory.

"This is an enabling technology for quantum computers," Chris Ford, team leader of the research from the Semiconductor Physics Group in the Cavendish, says. "There is a lot of work going on worldwide to make this new type of computer, which may solve certain complex problems much faster than classical computers. However, little effort has yet been put into connecting up different components, such as processor and memory. Although our experiments do not yet show that electrons 'remember' their quantum state, this is likely to be the case. This would make the method of transfer a candidate for moving quantum bits of information (qubits) around a quantum circuit, in a quantum computer. Indeed, our theorist, Crispin Barnes, proposed using this mechanism to make a whole quantum computer a long time ago, and this is an important step towards that goal."

[Source: Media release, September 2011]



STAV Council meeting dates

22 November

**Meetings will be held at STAV House
commencing at 5.00pm**

Science Teachers' Association of Victoria Inc.

'Advancing Science Education'

STAV Goals

- ◆ Establish and maintain both financial and intellectual independence
- ◆ Represent the collective voice of science educators in Victoria
- ◆ Influence policy formulation in matters relating to Science Education
- ◆ Support and maintain regional special interest groups within STAV
- ◆ Provide a range of resources and services to support science educators
- ◆ Provide for and encourage student participation in a range of challenging science activities
- ◆ Promote the importance of Science Education to the community
- ◆ Recognise significant contributions by STAV members to Science Education.

Contact Deadlines

December	15 November 2011
February	13 January 2012
March	13 February 2012
April	19 March 2012
May	16 April 2012
June	18 May 2012
July	15 June 2012
August	16 July 2012
September	20 August 2012
October	14 September 2012
November	17 October 2012
December	16 November 2012

Contact Newsletter

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