

ASET • NSW INC



FOR LABBIES • BY LABBIES

ASET-NSW NEWSLETTER

DECEMBER 2020

Volume 3, Number 3

In This Issue

- Committee Reports
- Calendar
- How to run an Orientation Day
- Tips & tricks
- Welcome to the Wonderful World of Waste
- Product Reviews
- Meet the Committee

Links for Articles

- <https://assist.asta.edu.au/>
- <https://asta.edu.au/conasta>
- <https://scienceweek.com.au>

Contact Us

<http://www.asetnsw.org.au>

Outgoing Editor

Loretta Fincato

fincatol@stmarks.nsw.edu.au

Chairperson's Report

Christmas greetings to all our members!

Year 12 have left school,, and COVID-19 has almost finished making our job just that little bit more complicated in the cleaning and sanitising of equipment. To quote Queen Elizabeth II, "It has been an Annus Horribilis". Let's hope that 2021 is much more settled.

#STARweek was a bit of a fizzer, but better planning is in place for next year for the week to be held 1-5 November. The 2 winners of the MTA competition for \$1000 each to attend CONASTA 2021 are from WA and QLD. Unfortunately the NSW winner was not a member of ASET and therefore didn't comply with T's & C's of the competition. CONASTA69 has been moved to Sept/Oct 2021 in Canberra to coincide with Floriade. Confirmed dates and venues will be advised. Our proposed AGM on 12 September had to be moved to a ZOOM meeting as a face-to-face meeting, with keynote speaker Bonnie Teece – an astrobiologist, was deemed as PD and therefore wasn't "compliant" with COVID safety. Thank you to those of you who took part. I was looking forward to hearing about Bonnie's connection with the Mars Rover expedition. At our AGM, Julie Ryan and Annett Stanley didn't stand for re-election. I thank them for the hard yakka they both put in to keep ASET-NSW running in the direction we are going.

I welcome Liz Brown, Jon Gray, Jonathan Blair and Linda Stanford, along with the current committee of Loretta Fincato and Laurence Wooding. We will continue to work with you, and for you, our members who should be recognised as professionals, and not just assistants who do the washing up. We are exploring avenues of presenting online professional development. If you have any ideas on future workshops or PD, please let us know so that they can be factored into our plans for 2021.

ScienceASSIST - by now you should have received information about an EOI for a subscription for future access to this wonderful website. We need to keep this great resource up and running so please consider taking up the subscription for your school. More information can be found here: <https://assist.asta.edu.au/about-assist>

If borders are re-opened with NZ, I can highly recommend attending CONSTANZ to be held in Christchurch. CONSTANZ – the NZ conference of science technicians will be held 5-7 October 2021 Details can be found here <https://stanz.nzase.org.nz/constanz/>

Margaret Croucher

Current Elected Committee Members

Margaret Croucher

Chairperson, Public Officer

Loretta Fincato

Vice-Chairperson, Newsletter Editor (Incoming Treasurer/Membership Officer)

Julie Ryan

Outgoing Secretary

Laurence Wooding

Outgoing Publicity Officer & IT Manager

Annett Stanley

Outgoing Membership Secretary & Treasurer

Jonathon Blair

Jonathon Gray

Liz Brown

Linda Stanford *(Incoming Secretary)*

Secretary's Report

We held our ASET-NSW AGM on Saturday 12th September 2020 via Zoom quite successfully. After four years as secretary I have now stepped down from this position, and the committee. Next year we welcome Linda Stanford as the new secretary. I have enjoyed my time assisting on the committee and I encourage all of you to consider coming on board at some stage in the future to help keep ASET-NSW active in supporting all those Labbies out there in schools. Our Association is a valuable resource and one that I have been proud to have supported over the last few years.

I look forward to meeting up with familiar faces again at the next ASET conference (which we are all hoping can proceed in 2021 after having to be cancelled this year). *Julie Ryan*

Editor's Report

This is my last edition as Editor but I am sure that I will continue my obsessive collecting of science memes, and keep on photographing topics that may interest you all in the future. Our ASET-NSW Gmail accounts will be operational soon, and you will be able to send articles to the newsletter editor via a dedicated address. Please watch this space.

I look forward to real face-to-face meetings now that COVID-19 has relaxed its grip. I'll enjoy getting out & about to do some science that isn't on Zoom!

My filming date on Mastermind is booked for next year. I encourage you to apply as the interview process was relatively painless. Unfortunately, they haven't chosen my nominated science topic, but I hope it will demonstrate to our students that anything is possible when you put in the effort. Wish me luck (and there is still the possibility of a speciality science subject) as I have also been through the first round of auditions for Hard Quiz. Merry Xmas!

Loretta Fincato

Calendar of Events 2020/21

15-23 August	National Science Week
14-15 September	ASET-NSW Conference – CANCELLED DUE TO COVID-19
12 September	Annual General Meeting - Zoom Meeting 10am
September	National Biodiversity Month
09-15 November	National Recycling Week
29 Jan - 2 Feb 2021	#COSPAR Space STEM Convention - ICC Sydney
September 2021	T.B.C. Conasta69 - ANU Canberra
5-7 October 2021	CONSTANZ - New Zealand Conference, Christchurch, New Zealand
1-5 November 2021	#STARWEEK



Bone Cleaning & Preservation

To cut a long story short, we had to remove the possum box from our backyard tree to rescue an orphan brushtail possum. Unfortunately, a previous juvenile had passed away and their bones were in the leaf litter. I picked out the larger bones (skull, ribs, femur, pelvis etc) and went to the internet for some instructions on how to clean the bones for display. I started by using an old test tube brush to clean the bones very gently with detergent to remove fats.



I picked out any tendon that the ants had not removed. Then you soaked the bones in strong hydrogen peroxide until all the remaining flesh had fallen off. Washed it in a strainer and checked for any missing bits. The teeth do get loosened from the jawbone but some superglue would fix this once the bones were dry.

To whiten, you would have to leave the bones in the sun to bleach. These bones were stained by leaf litter and blood, and stayed brownish. Once dried for two days I was able to pack them into a small box in cotton wool. They should survive minimal handling by students.

LORETTA FINCATO *St Mark's Coptic College*

“Radioactive” - The Movie

A 2019 biographical film directed by Marjane Satrap, and starring the brilliant actress, Rosamund Pike as Marie Curie. Based on a graphic novel by Lauren Redniss.

This was very exciting, a film about a famous female scientist, her husband, children and colleagues. I made a bet with my friend that at least one other lab tech would be in the cinema at Beverly Hills that afternoon. Hello to the lovely lady from East Hills T.H.S that we met, and also happens to be a member of ASET-NSW.

Highly recommend that you watch this film as it was very engaging and you will enjoy some gorgeous cinematography based on science themes. You almost wince as you witness them handling radium and polonium without protective measures. May not be acceptable as an educational source because of the nudity.



L Fincato - Editor



Substitute Science

Replace actual mice with crocheted dissection models you have made yourself. Either that, or get that avid sewer in your life to do it for you!



Citizen Science

Australia Post recently released a stamp that celebrates citizen science. There are many on-line projects in which you can involve yourself or students.

For instance, I recently did a bird watching walk with Canterbury-Bankstown Council Bushcare officers, and Darryl MacKay who is a local bird expert. We spotted 15 species from the known list of birds of Deepwater Reserve. I could then go to a wildlife register and enter my sightings. *Editor*

CLEANING & RE-VITALISING WHITEBOARDS

Whiteboards are really easy to clean with water and an old cotton rag. Stubborn marks can be removed with methylated spirit. I recently trialled the Dry-Erase Board Cleaner & Conditioner by Quartet which I purchased from Officeworks.

Too much product and it will rain like powered snow all over the floor. Just the right amount and it dries to a nice slippery surface that has filled in any scratches on your ceramic boards. After straining my arms to buff the surfaces the first time, I purchased a buffing attachment from Bunnings for a power drill. It will make future cleaning and polishing a lot quicker.



Freebies

Ring your local university and ask the laboratory manager if they have spare equipment

BOB'S INSTRUMENT SERVICE

Bob's Instrument Service specialises in the service and repair of school science lab equipment including microscopes, balances, power supplies, panel meters and other equipment throughout NSW and ACT.

Please feel free to contact Bob Death on 0416 721 011 or bobsinstruments@gmail.com to discuss your school's needs.

If you have any interesting science stories, photos, hints, tips or freebie suggestions, and they haven't been published on other forums, please send me an email so I can publish in the next edition of the newsletter. Please put NEWSLETTER in the subject line.

fincatol@stmarks.nsw.edu.au

You know you are a Chemist when:

1. You reach for the acetone while washing dishes.
2. You read 2 sentences past the word "unionized" in a news article before you realize it's "union-ized" rather than "un-ionized". The article suddenly makes much more sense.
3. You hold your teaspoon against the side of your cup to get that last drop off when you take it out.

Random Factoid

In 2020 they were going to launch a dedicated, private, science high school at Epping called Sydney Science College. The school has since postponed its opening until 2021 and is enrolling senior students now. The Catholic education diocese of Parramatta was also building a STEM high school in Luddenham.



Science Shows & Workshops
across NSW & ACT!

- ✓ Curriculum-linked
- ✓ Full risk assessments
- ✓ Easy to arrange
- ✓ Small groups or whole school

fizzics.com.au
1300 856 828

Fizzics Education

Welcome to the Wonderful World of Waste and the School Laboratory Part III

By Michael Pola
Envirostore Chemical Consulting
mike@envirostore.com.au

Part III looks at some especially problematic chemicals.

Elemental mercury commonly encountered in thermometers, barometers, manometers & switches, has some properties that cause consternation to the laboratory user. It is very heavy so 1 litre of mercury will weigh 13.59kg. This makes it unsuitable to store in glass jars. Mercury is so heavy that when you drop some, it will disperse everywhere. It will form amalgams with many metals and they can be used to assist in cleaning it up from inaccessible areas. Never let it contact any of your jewellery as it will almost instantly discolour gold e.g. turn it silvery.

The threshold limit value (TLV) for elemental mercury is quoted by AMGIH as 0.05mg per m³. TLV is more relevant for exposure in a workplace over prolonged time and is not the same as a TLV-50, the toxic limit value. The TLV can also be thought of as the recommended maximum atmospheric concentration. Elemental mercury is said to be absorbed through the skin. Inorganic and organic mercury compounds are far more toxic & dangerous than elementary mercury, although exposure to any of them is to be avoided. Mercury salts really have no place in a school laboratory and such chemicals are on the banned list. Keep mercury but run risk assessments on its use, even if present in a thermometer. The temptation is to dispose of all mercury apparatus in the lab.

Mercury has a vapour pressure of 13mg/m³ which is about 200 times the TLV, so fugitive free mercury in a room will soon start approaching the TLV concentration. However it depends on the size or volume of the room, and will take some time to reach the TLV in larger rooms.

How do we deal with mercury spills? The use of sulphur is old fashioned. Soluble sulphide will precipitate with soluble mercury ions, but if you use powdered sulphur, you will be disappointed with the reaction. It is far better and more rapid to form a zinc amalgam with zinc granules. The granules react quickly and the liquid mercury disappears, forming a solid mercury-zinc amalgam which can be swept or vacuumed up without vapours. Prevent the vapours in the first place by using the sponge inside the lid collectors, the split mercury spoon, or the Pasteur pipette with a rubber teat, or even a dustpan and small brush. Do a final cleanup using the zinc granules. Free mercury should be collected in a plastic bottle. Avoid the use of any glass container. There is no need to panic and call for an evacuation if you spill some mercury.

Other wastes that may need special treatment are medical and infectious wastes. The wastes included the yellow sharps container from the sick room, and the lab room container which may contain old petri dishes, scalpels and forceps. Reusable instruments can be autoclaved, chopping boards can be sanitised, and sometimes items can be incinerated offsite. Not all schools have an autoclave although the use of pressure cookers is common. If you can, use autoclave tape which has a black stripe appear when it has reached the correct temperature to kill bacteria.

Biological parts like eyes and hearts can be wrapped up securely and disposed of in the garbage. If you can't dispose of animal parts immediately, put them into the freezer. Your choices of disinfectant include ethanol or methylated spirits, but the alcohol content should not be greater than 70%. Solutions like Pine O'Clean which is a quaternary ammonium compound are good, and the cheap favourite, sodium hypochlorite, is the most effective. Never acidify bleach as you may produce chlorine gas which is very unpleasant. Have some disinfectant hand wipes available, and encourage frequent hand washing when handling biologicals.

Petri dishes which have been used to grow live microorganisms should be sterilised chemically with chlorine or in the autoclave. If using an autoclave, leave the lids on and secure them. The sharps container can be used to store sterilized petri dishes as they will be incinerated eventually.

Editor: This article has been included with permission from Envirostore and has been published previously in Lablines.

All the **BRANDS** you **TRUST** from the **COMPANY** you **TRUST**
Ciderhouse Tech can provide all your science needs



 ciderhouse tech

www.ciderhousetech.com.au


EduSupplies
TECHNOLOGY SUPPLIES

Microscope & Balance Services

Your microscopes/ balances keep calling in sick & you have **no time** or no idea how to deal with them?

- Microscopes produce out of focus, hazy and unsharp images like the left small image
- Microscopes have loose or missing parts
- Stiff adjustments appear on your microscopes
- Balances produce inaccurate or imprecise weighing results

It's time to get them treated by our professionals!

 **1300 661 607**

 edusupplies@edusupplies.com.au



Meet the Members of the Committee

Where do you currently work?
Years in current workplace?
How many years have you been a Labby?
What qualifications do you have?

Asquith Girls High School
7 years
7 years
Just basic training courses.

Which science discipline are you most interested in?
 How did you become a Labby?
 What did you do before you were a Labby?
 What is your favourite thing about being a Labby?
 If you could give your younger self some advice?
 If you weren't a Labby, what would you be doing?
 What does "life outside the lab" look like for you?

I like them all as they are different.
 Fell into the role!
 Officework
 Every day is different
 Just be willing to learn.
 Retired.
 At the moment renovating our investment property.



Linda Stanford

Where do you currently work?
 Years in the current workplace?
 How many years have you been a Labby?
 What qualifications do you have?
 Which science discipline are you most interested in?
 How did you become a Labby?
 do through TAFE, was intrigued by the Laboratory Technology course.
 What did you do before you were a Labby?
 Customer Interaction.
 What is your favourite thing about being a Labby?
 awesome practicals, and seeing science in action every day.
 If you could give your younger self some advice?
 to yourself.
 If you weren't a Labby right now, what would you do?
 What does "life outside the lab" look like for you?
 and hanging out with friends.

Norwest Christian College
 4 years
 4 years
 Diploma of Laboratory Technology
 Chemistry all the way!
 When looking at something involving chemistry to
 Worked as an eLearning Developer & Director of
 Customer Interaction.
 Working alongside students, getting to prepare
 Get everything in writing, you have value, stay true
 to yourself.
 Probably Early Years education.
 Reading, binge watching shows, playing games,



Laurence Wooding

Where do you currently work?
 Years in the current workplace?

Knox Grammar School.
 Over 4 years.

How many years have you been a Labby?
What qualifications do you have?
Which science discipline are you most interested in?
How did you become a Labby?
What did you do before you were a Labby?
What is your favourite thing about being a Labby?
If you could give your younger self some advice?
If you weren't a Labby right now, what would you do?
What does "life outside the lab" look like for you?

More than 4 years.
Bachelor of Science (Pharmacology).
Biology.
Looked for something different to do.
Vaccine manufacturing.
No daily routine.
Flexibility is key to enjoying the job.
Vaccine manufacturing.
There is life outside the lab???

Jonathan Blair

CHOOSING VISUAL CHEMISTRY PRACTICALS FOR ORIENTATION DAYS

Our school orientates the incoming Year 7 cohort into the various practical subjects. We had to orient 3 groups in 30 minutes. Choose wisely, and your teacher will have no problem completing timeously.

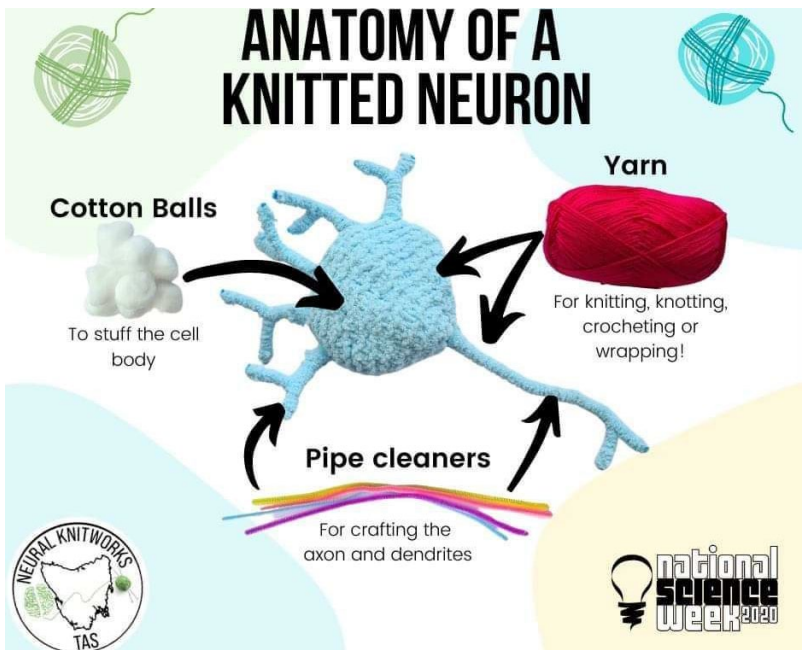
CABBAGE WATER PH TESTING

1. Make the cabbage water indicator the day before as kept too long out of the fridge, it will go mouldy.
2. Experiment with various household chemicals to see what colour they will turn after adding the indicator.
3. Line up the beakers with the chemical behind it.
4. If the teacher wants to repeat experiments for more than one group, pre-load the test tubes and place them in more than one rack.
5. Have the students record the results on their own colour copy of the paperwork so that they could research the various colours at home if they wanted to recreate the experiment.

FLAME TESTS

1. Ensure the gas is turned on prior to the demonstration. Put out matches etc for the teacher demonstrating.
2. Put down butcher's paper to catch the overspray & leave cloth in the sink ready to wipe down the bunsen burner etc.
3. Get out the copper chloride solids etc, HCl, and wire, to show the pretty colours flaming, as it works better than having solutions in spray bottles.

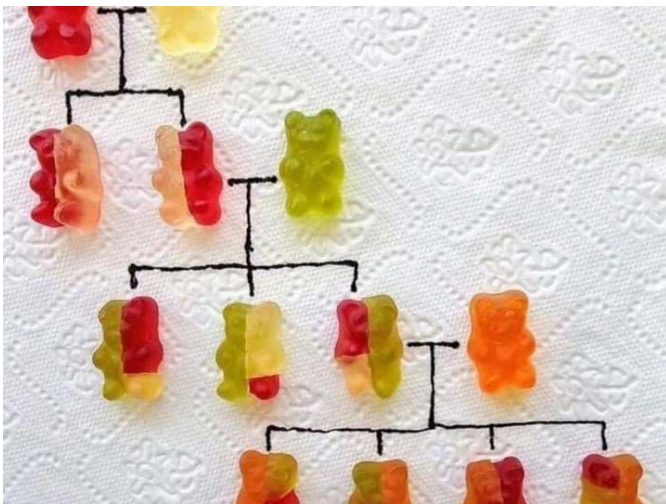




SUGGESTIONS FROM THE WEB

Plenty of science craft projects cropped up on websites during the year. The gummy bears are a great way to demonstrate inherited genes.

Other good projects for end of year are solar oven construction, sports physics experiments or just get the naughty students to clean for you!



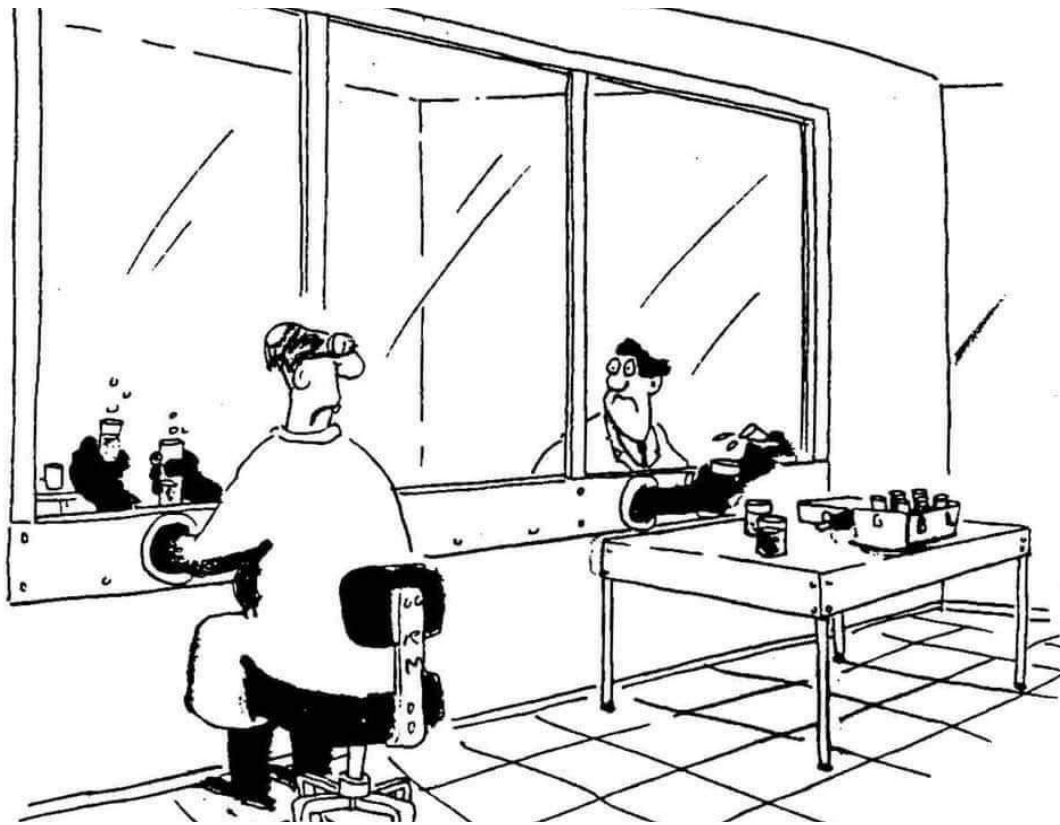


TIPS & TRICKS

Need more bench space? Turn the top of a cabinet into useable area by covering it in absorbent disposable bench liner. The plastic backing stops liquids going through, and whenever you spill a dangerous chemical, you just change the whole mat.

PERFECT PURCHASE

Found at a Pricemart store was this measuring spoon and dropper. Great for using as a weighboat for small amounts of chemical. Cheap enough that you could purchase a class set.



Our students when tasked with ensuring their own safety protocols!

Edible Cells

We did a fun and interactive (eating) practical called Edible Cells for Year 7 to demonstrate the parts of an animal cell compared to a plant cell. It involved a bit of preparation, chopping and mixing but a good visual for students to understand the topic "The Meaning of Life". **Janelle Curley - Lucas Heights Community School**



Plant Cell Model	
Organelle	Represented by
Nucleus	Smartie
Cytoplasm	Green icing
Mitochondria	Jelly bean halves/popping lollies
Chloroplast	Mint leaf
Vacuole	Strawberry cream
Cell membrane	Sour strap
Cell wall	Liquorice or vine/rope lolly

Animal Cell Model	
Organelle	Represented by
Nucleus	Smartie
Cytoplasm	Pink icing
Mitochondria	Jelly bean halves or popping lollies
Vacuole	Small piece of Strawberry cream
Cell membrane	Sour strap



These are a few pictures of our Christmas decorations (lab style) at Peel High School in Tamworth. I had to take a few liberties with the periodic table to make it work for me though... I hope no one minds!

Melissa Siddons from Peel High School





AUSTRALIAN
SCIENCE
TEACHERS
ASSOCIATION



ASSIST
AUSTRALIAN SCHOOL SCIENCE
INFORMATION SUPPORT FOR
TEACHERS AND TECHNICIANS

Science ASSIST NEEDS YOU

Science ASSIST needs to get at least 800 pledges from schools to become subscribers by 11 December 2020, if it is to continue next year. We are almost three-quarters of the way there, but **we still have a long way to go!**

How can you help? Ask your school to submit an Expression of Interest in subscribing to the Science ASSIST site, if they haven't already done so. Also spread the word to other schools.

Further details can be found on the 'About ASSIST' page
<https://assist.asta.edu.au/about-assist>

Sign up with the online Expression of Interest form
<https://forms.gle/vTVEqSitEUGvJYaRA>



Illustration © Wiscostart | Dreamstime.com