ASET-NSW NEWSLETTER

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Links for Articles

- https://assist.asta.edu.au/
- https://asetnsw.org.au/resources/STARweek%20Flyer_Digital_2.pdf
- https://asta.edu.au/conasta
- https://www.environment.gov.au/about-us/media-centre/events
- https://www.choice.com.au/health-and-body/conditions/cough-cold-flu/articles/should-i-wear-a-face-mask-to-prevent-coronavirus-covid-19

Contact Us

http://www.asetnsw.org.au

Editor

Loretta Fincato

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Chairperson's Report

Well, it has been a difficult Term 1 and a challenging start to Term 2. I hope that you kept busy with all sorts of activities. It is very unfortunate that some lab techs have been stood down.

#STARWEEK is going ahead (24-28 August). SETA has already asked us to take photos of the way we have done things differently during the COVID crisis. We can take photos of ourselves supporting science before and during #STARWEEK, and the pictures will be posted to the website. Ciderhouse has sponsored the stickers again, and we shall send them to members. The flyer will be emailed when available.

After CONASTA was cancelled, all the associated competitions were also scrapped. Modern Teaching Aids will be announcing a new competition in July and the winners announced during #STARWEEK.

Some of our supporters enjoyed the ASET-NSW conference so much last year, that they are keen to provide PD sessions on-line.

ASTA is hoping to secure ongoing funding for ScienceAssist and the state associations may be asked to help.

Margaret Croucher

Current Elected Committee Members

Margaret Croucher
Chairperson, Public Officer

Loretta Fincato
Vice-Chairperson, Newsletter Editor

Julie Ryan
Secretary

Laurence Wooding
Publicity Officer, IT Manager

Annett Stanley
Membership Secretary, Treasurer

Secretary's Report

What an interesting time we are in! Very challenging for Labbies in Australia and around the globe. Hoping we all come through this with our positions and hours intact and our schooling system back to some kind of normal.

Our committee is having its first tele-meeting this month. Gone are the days of face to face meetings. More technology that we have to master!

With the cancellation of the ASET-NSW conference in September, the committee are hoping to plan some PD later in the year but this will be dependent on COVID restrictions. Also, we will be needing to hold an AGM before the end of the year so stay tuned for more information on the details for that.

Stay safe everyone!

Julie Ryan

Calendar of Events 2020

22 April	Earth Day
05-08 July	CONASTA69 – ANU, Canberra - CANCELLED DUE TO COVID-19
27 July	Australian National Chemistry Quiz
31 July	Schools Tree Day
15-23 August	National Science Week
24-28 August	#STARWEEK
14-15 September	ASET-NSW Conference – CANCELLED DUE TO COVID-19
September	Annual General Meeting
September	National Biodiversity Month
15 October	HSC written exams commence
09-15 November	National Recycling Week
29 Jan - 2 Feb 2021	#COSPAR Space STEM Convention - ICC Sydney

Preparing for New Laboratories

Our school employed 3 new science teachers this year and suddenly it became urgent to finish converting ordinary classrooms into laboratories. The fit out had been completed but there were a whole list of little things that needed doing.

Start with fire safety. The fire detectors had to be converted to heat only models. Ordinary fire detectors would be set off by light or smoke. Fire blankets, signage, and extinguishers had to be purchased. Your fire safety contractor could help with all of these things. Once I bought the first aid kits and the disposable glove holders from a local manufacturer, I could screw all these items onto the wall. I like to put them near the door for easy access.

The hand towel dispensers just happened to be the cheapest from the supplier of our tissue paper products.
I got safety glasses from Bunnings and the racks from a laboratory supplier. Now was the time to install safety showers and drainage. Also move any power points that may be hidden by the new benches and consider installing USB sockets for the kids to re-charge laptops.

They will ask you to get 3 quotes for the general laboratory equipment and glassware. Start off by asking the bursar how much budget is available. It turns out that at my school we had building works commencing and there was only enough money to fit out 10 benches this semester. In the end I had enough excess equipment to fit out 12 benches in total. The final supplier was chosen because they had the best price overall, but the items were not all in stock. I had to cancel backorders and re-issue to other suppliers when some of the lead times were unsuitable. Use the leverage you have from buying in bulk to get the best discount or bonus with purchase.

Create a spreadsheet and use it to compare the quotes. Some companies offer bundles of equipment, and you will need to be able to compare the bundle to purchasing the items separately. Keep a list of what still needs to be purchased, so that you can place orders as soon as capital becomes available. A good tilme to ask your sister schools if they have excess equipment, they could donate.

When the equipment does arrive, take advantage and label all the benches with a number and then put numbers on the new equipment. You will be able to tell at a glance in which bench the items should be stored.

Windows need to be opening to clear the air and that is hard if the mandatory child safety locks are installed. Consider asking if enforced mesh flyscreens can be installed on the outside of the windows, and that will enable windows to be fully opened if required.

If the school holidays are not far away and there are any items that still need completion, make a list for the school handyman to complete whilst the kids are absent.

L Fincato

CLEANING & STORING LEGO

A piece of tulle will be your new best friend when cleaning Lego pieces in their trays. Apply the piece of tulle to the end of your vacumn tube and keep it in place with a couple of elastic bands. When the cleaner is turned on, only the dust can be sucked through the tube and any Lego that is picked up can be removed safely.
A damp cloth is good for removing fine dust off the trays and larger pieces.
Always remove the batteries from the electronic Lego controllers. Old batteries can leak during storage and the acid can rust and corrode the metal components. 2M HCl is good for cleaning metal components.

Freebies

2020 Cave Animal of the Year is the Cave Cricket (Raphidophoridae family). If you have room to display a poster or would like bookmarks, contact hello@caveanimaloftheyear.org.au

Coronavirus (COVID-19) Update

Science ASSIST continues to provide online support to school science and is closely monitoring updates regarding COVID-19. The Science ASSIST Q&A function will continue to operate, and all website resources are available online. As from Monday 23rd March the ASTA staff are working remotely.

The Australian Health Protection Principal Committee (AHPPC) has advice for schools including the following:

Schools should implement a range of other strategies to reduce transmission, including the promotion of personal hygiene measures (frequent handwashing, reducing face-to-face contact, cough etiquette), physical distancing, reducing public gatherings (e.g. face-to-face school assemblies), and reducing the mixing of students (e.g. reduced use of common areas, staggered lunchtimes, and reduced after-school activities and inter-school activities).

Updates from the Australian Government Department of Health regarding COVID-19 can be found at https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert

Schools and COVID-19

At this stage schools are still open and in the current situation with COVID-19, schools should adopt a risk management approach for practical activities.

It is important to take into consideration that some staff and/or students may be at higher risk of serious infection from the coronavirus disease including those that have compromised immune systems and staff members over 60 years of age.

Schools work at a frenetic pace, but time should be allocated to ensure particular attention is given to the advice provided by the Australian Government Department of Health.

This involves following guidance by the Department of Health encouraging the adherence by staff and students to maintain good hygiene and social distancing, including but not limited to:

- Frequent and thorough handwashing
- Avoiding touching the face particularly near and around the mouth, eyes and nose
- Maintaining a distance of 1.5m where possible
- Regular cleaning of frequently touched objects and surfaces

School science activities and COVID-19

School science activities have additional aspects to consider such as the use of shared safety glasses, (and shared microscopes), unpredictable student behaviour and students working in close proximity to collaborate on activities. Schools should have strategies to address these aspects in particular:

- The scrupulous cleaning of shared safety glasses (or microscopes) between use, see Should shared safety glasses be decontaminated after each use?
- Note that it is impractical for the science technician to be responsible for this task
- It would be reasonable for the school to ensure that other systems are in place, e.g. for students to be responsible for cleaning their safety glasses
- Regular cleaning of surfaces
- Good classroom management of student behaviour
- Constructing activities to enable maintaining as much distance as possible between people
- Encouraging the washing of hands at the completion of the activity with soap and water.

Schools should assess their ability to adequately manage each of the above and if it is not possible to meet these requirements then schools should err on the side of caution and not proceed with a particular activity as a student activity. It may be better in these circumstances to conduct a demonstration, so that good hygiene and social distancing can be maintained.

References and further reading

1 ‘Latest statement from the Australian Health Protection Principal Committee (AHPPC) on coronavirus (COVID-19) Australian Government Department of Health website, https://www.health.gov.au/news/latest-statement-from-the-australian-health-protection-principal-committee-ahppc-on-coronavirus-covid-19

2 ‘How to wash and dry hands’, Australian Government Department of Health website, https://www1.health.gov.au/internet/main/publishing.nsf/Content/how-to-wash-and-dry-hands (a pdf version is available on this page)

‘Coronavirus (COVID-19) health alert’, Australian Government Department of Health website, https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert

‘Safe Practical Activities in School Science’, Australian Science Teachers Association website. https://asta.edu.au/about/safe_practical_activities_in_school_science

‘What you need to know about coronavirus (COVID-19)’ - Good hygiene for COVID-19’, Australian Government Department of Health website, https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/what-you-need-to-know-about-coronavirus-covid-19#protect-yourself-and-others

‘What you need to know about coronavirus (COVID-19)’ - How it spreads’ Australian Government Department of Health website, https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/what-you-need-to-know-about-coronavirus-covid-19#how-it-spreads

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.

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You know you are a labbie during the time of COVID-19 when -

- ❑ isopropyl alcohol is so precious you could use it as currency
- ❑ every thing takes twice as long to put away as it has to be washed with hot soapy water
- ❑ every second teacher is asking to make hand sanitiser as a practical but you can't buy the ingredients
- ❑ you finally get to practice your aseptic techniques on a grand scale
- ❑ you run out of Glen-20 and antiseptic wipes
- ❑ things get simpler as you are only teaching half-empty classes
- ❑ you spend time preparing for make-up exams for which students never show, again

Random Factoid

2021 is the International Year of Caves and Karst.

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

By Michael Pola
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This article, and the following installments, aims to answer the most common and pressing questions that come up when the topic of chemical disposal from laboratories is discussed. I hope to answer all your questions and more, and to provide a guide to correctly prepare, handle, store, and dispose of all your laboratory wastes.

Let's start with some definitions: what is chemical waste? Chemical waste is any chemical that can be classified as prescribed industrial waste (PIW), which is a legal term from the Environment Protection Industrial Waste Resource Regulations 2009, which are referenced in the Environment Protection Act 1970. 'Prescribed' just means that there is a listing of chemical types, and if the waste from your laboratory can be found on this prescribed waste list then it comes under the Act and associated Regulations as administered in Victoria by the Environment Protection Authority (EPA). A rather lengthy definition, but in simple terms, if the waste type is on the list then it requires transport by EPA permitted transport from the disposer (you) to the disposal or treatment site, and the treatment plant must be licensed by EPA. When we fill out the five-part EPA paperwork after collecting your chemical waste, all parties in the transaction are complying with the above Regulation. This is a legal requirement.

Rule Number 1: You must use a waste transporter who has a permit issued by EPA, who issues the relevant copies of the transport certificate and who transports the waste to a licensed treatment plant. The first and most important aspect of chemical waste disposal is that you must use a company with an EPA permit to transport the chemicals, and they must transport to a premises that is licensed to receive that type of waste. You, the disposer, must receive two coloured copies of the EPA paperwork from the transporter, these are the pink and green copies. You, as the disposer, must post the pink copy to EPA within seven days and retain the green one for 24 months. If you are ever audited by WorkCover, for example, they may wish to see your green EPA copies to prove that you have complied with the above Regulation. Treat it as a legal document. The pink and green copes of the EPA documents must contain details of the transporter and their permit number, as well as the proposed treatment site.

Laboratory chemicals are on the prescribed list, as are empty containers, waste from chemical spills, waste oils, medical wastes (such as a yellow sharps container from a sick room), acids, alkalis, paints and solvents. In fact, just about all chemical waste encountered in school laboratories is on the prescribed list. Wastes that are not on the prescribed wastes list include e-wastes, green waste, radioactive, explosives and gas bottles, batteries, and tyres.

Rule Number 2: Treat your chemical waste as a dangerous good. The dangerous goods system applies primarily to the transport of dangerous goods and secondly to the storage of dangerous goods. The relatively small amounts of chemicals held in laboratories will usually provide some exemptions to the storage requirements, but the potential chemical reactions are just of a smaller scale. These reactions can involve a fire, explosion and chemical reactions resulting in emission of poisonous or corrosive gases - all scenarios unwelcome in a laboratory of any size.

Dangerous goods are chemicals that have physical and chemical properties that place them into one of the 9 major classes. Flammable liquids, which are Class 3, have a flash point of below 60˚C. Flash point is the lowest temperature at which vapour from the liquid can be ignited. For example, petrol has a flash point of around -15˚C. As mentioned above, school laboratories do not normally have enough dangerous goods to trigger compliance with the Dangerous Goods Regulations, but because the dangerous goods system is

based on actual chemical properties, it is still an excellent and unrivalled system for safely storing and handling your laboratory chemicals. It is just a matter of scale.

From the definition of waste, it will be obvious that some of your chemical wastes will also be dangerous goods. Chemicals that are surplus to your requirements or have passed their used-by date are now classified as chemical wastes, but the properties remain the same. Waste flammable liquid is still a flammable liquid and therefore a Class 3 dangerous good. “Waste” is not a dangerous goods classification and any chemical waste you generate from the laboratory must be handled in accordance with the dangerous goods system as well as the EPA requirements. Sulphuric acid waste is exactly the same as sulphuric acid in a new bottle, as far as the dangerous goods regulations are concerned.

The ramifications of the dangerous goods system as applied to your laboratory can be summarised in the requirement for storage away from incompatible dangerous goods (acids and alkalis for example), labelling (the labelling of your chemicals under the GHS is in addition to any dg requirement) and the maintenance of a chemical manifest. The manifest should include all the required GHS and DG data. Remember the GHS system applies to exposure to hazardous substances during the use of chemicals that are hazardous substances, but there is plenty of overlap between the DG and GHS systems. There is a summary sheet on the GHS for schools on the www.envirostore.com.au website. If your waste is not a dangerous good, you may store and handle without reference to the DG system, but labelling requirements are unchanged. Non-hazardous is not a DG classification. In the next edition, we will deal with the labelling of chemical wastes in detail, but remember when your waste is a dangerous good, or was once a dangerous good, it remains one and must be treated in the same way as a dangerous good. Chemical and physical properties do not go away when something becomes waste. The next edition will cover labelling, suitable containers for waste, in-house treatments and anything else I can think of between then and now.

Editor: The EPA forms will apply to NSW schools using this company to dispose of waste, perhaps from the Albury region. I haven’t seen these forms when I have disposed of waste in Sydney. This article has been included with permission from Envirostore and has been published previously in Lablines.

EduSupplies

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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
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