



Biology Educators' Association of New Zealand Te Rōpū Whakaako Koiora o Aotearoa

August 2016 Newsletter

web: beanz.org.nz

email: biology@gmail.com

Inside this Issue

BEANZ Workshop	1
QAAM Resource Pack	1
Who is ANZCCART?	2
Meet the team	2
NZQA updates	3
SCICON scholarship recipients	4
Scipad Hominin Posters	4

**CHECK OUT OUR
UPDATED WEBSITE!!**

beanz.org.nz

BEANZ 2016 Workshop

Exploring the theme: Who is a New Zealander?

Lisa Matisoo-Smith has been working with student genomes in a pilot project this year. Along with a Dunedin teacher she has developed resources that could be used at the junior or the senior level. BEANZ regional reps worked further to develop these resources. Our workshop in 2016 will be based around this work and will incorporate :-

- cross-curricular ideas within socio- scientific issues
- a culturally responsive environment
- more e-learning tools
- giving worthwhile feedback
- some up-skilling in “variation” concepts for non-biologists

The workshop does not represent a unit of work ready to go, rather a selection of ideas, resources and pedagogy that can be used and adapted for different curriculum levels and purposes. For those who are BEANZ members this workshop is free. For others the cost is \$20 per school. The workshop will be offered in most regions during Term 4, so keep an eye out for more information from your regional representative.

QUALITY ASSURED ASSESSMENT MATERIAL

Biology 2.1 “Variation in a Forest Canopy” Resource Pack

As requested by members, BEANZ has put together a resource pack for members which includes AS91153 Bio2.1 “Carry out a practical investigation in a biological context, with supervision” task, resource material and schedule which have successfully been through the QAAM process. For those new to this, QAAM stands for Quality Assured Assessment Materials which means that NZQA have already checked the materials and guaranteed they are at standard. This means you can use them with confidence.

The task has successfully been trialled in a New Zealand school and uses resources commonly found in secondary schools throughout the country. As well as the QAAM task, materials and schedule the resource pack also includes teacher guidelines, background readings and student graphic organiser which can be used as part of the teaching and learning process prior to assessment.

The value of this resource depends on the continued security of both the task and schedule so it is only accessible through BEANZ. While eventually it will be accessible via our new website, currently if you wish to have a copy of the resource pack you need to email your request to biologynz@gmail.com and include your name, school and email address.

ANZCCART QAAM'd ASSESSMENT RESOURCES

ANZCCART is an independent body which was established to provide a focus for consideration of the scientific, ethical and social issues associated with the use of animals in research and teaching. Such use is often the subject of lively debate.

ANZCCART (NZ) has supported the development of four NCEA assessment tasks that have received the Quality Assured Assessment materials trade mark (QAAM) from the NZQA for NCEA Achievement Standards (Biology 1.2, 2.2, and 3.2), which integrates biological knowledge to develop an informed response to a socio-scientific issue. The four resources are:

- *Animal research: What's a life worth?* Biology 1.2 Report on a biological issue
- *Animal research: The best thing for human medicine and animals?* Biology 2.2 Analyse the biological validity of information presented to the public
- *Animal research: The ethics of using animals for research and teaching in NZ* – Biology 3.2 Integrate biological knowledge to develop an informed response to a socio-scientific issue

HELEN MORA : SECRETARY

I entered teacher training college in 1983, as my chosen career - farming - was not a winner with my family. Thirty years later, working in jobs both inside and outside of education, I am now passionate about teaching and have had the opportunity to work with numerous teachers and students from Southland to Auckland over the last 18 years.



In my role as the Ministry of Education Senior Subject Advisor, Biology, for the South Island in 2007 I developed an appreciation of the range of challenges faced by Biology teachers, whether working in a large city high schools or a small rural school and the real need for professional learning and support to subject teachers. After working in the team at LENSscience in Auckland I returned to my home town in 2013 to take up the Head of Science position at Linwood College, a co-educational state decile 3 school in East Christchurch. I have been the secretary for BEANZ for the last 2 years and it is a pleasure to work with a dynamic team that strives to provide informative and quality workshops and resources that provide subject specific pedagogy and information both regionally and nationally.

PETER SUTTON: TREASURER

After 37 years of secondary science teaching, the last 17 as HOF Sciences at Marlborough Boys College, I have recently had a change of direction to take up a role of Microsoft Teacher Ambassador. In this role I have the privilege of providing support in digital teaching and learning to many teachers, primary and secondary, in a diverse range of regions and schools.



The role of BEANZ treasurer provides the opportunity to continue to contribute to the community of biological educators and to keep in touch with the sector to which I owe much and may one day return. Parallel to this is a strong interest in Education for Sustainability which I continue to support through assessment contracts with NZQA and as a Trustee, and Lead Teacher for the Untouched World Charitable Trust.

A pastime of breeding birds enables me to continue to apply my biological interests, especially in genetics.

NZQA UPDATE

B1.2 / 90926

Refining the question: Students need to refine a given question or purpose to guide their research and presentation of their evidence. The ENs are quite clear on this. While it is not as much an issue than it was, some schools are giving student questions that are too specific, and students just copy them. One way to help students refine the question is to give them exposure to different resources on a topic – videos, articles, posters – and after extracting relevant information also work to elicit the students' questions. For example after finding out about diabetes students may ask "why do Pasifika people get diabetes more than Palangi?" or "what can I as a teenager do to make sure I don't get diabetes?" or why is diabetes a big problem now when it was not so common when my dad was a boy?" ... This then becomes the focus for their research, the whole class looking at diabetes, but each student answering their own individual question.

Scaffolding: The TKI tasks for this standard are scaffolded in a way that obviates the need for templates. The refining of the TKI tasks has focused on making them not look so daunting for less able students. The mode of assessment could involve a written report, a PowerPoint presentation, a "press release", an article, an oral presentation or debate.

Complexity: Teachers need to look more closely at the biology they teach these students as much of it is too complex for L2.

Vocab: Complexity of the vocabulary can be addressed by using a range of strategies to teach the keywords. There are many strategies you could use to reinforce the learning of terms – look for strategies that connect the term with its meaning. Word finds can be entertaining and spelling tests can improve spelling but neither help students make meaning and word lists or glossaries on their own are not enough. Clusters, Matching lists, Vocab squares, Dominoes, I Have Who Has, Fly swat, Quizlet, Telephone Whispers and the like are all strategies teachers find useful to help students learn the meaning of terms.

Students with low literacy: To ensure the task is accessible to these students, teachers could use the ESOL teacher (or RTLB or Literacy coordinator) to read the standard and task to identify words that students at reading or writing Level 2 and 3 may not be familiar with or may be disadvantaged by. They can often offer alternative words or phrases, which do not alter the integrity of the task and the biology level being assessed, e.g. Level 6. Those unfamiliar words which can't be replaced can then be targeted using vocab strategies.

Assess when ready: The critical point is that assessment should not be carried out against the standard until students are ready. Guided templates could be very useful for teaching and learning of less able students.

Literacy credits: 90926 is one of the standards that can be used for overall literacy credits so the task needs to have an appropriate language focus. While 'writing' is often the best method to display evidence for meeting the criteria (and for the teacher to authenticate the evidence), it does not mean that this is the only mode of assessment that can be used to collect evidence.

Processing information: This is a research standard and thus the student evidence e.g. portfolio should show that the student demonstrates some method of processing. Students can electronically process now using cut and paste, highlighting in colour etc. to process information electronically. If they did this they would have to make it electronically available – e.g. printed file, USB or even their own blog. From this the student could then give a speech or seminar but they would have to provide written supporting evidence to show where/how they collected and processed the speech information.

NZQA UPDATE CONT...

Standard B2.3 / 91155 may be more fairly assessed using the collection of evidence rather than a test/exam, as indicated in the updated CoAs for all internally assessed standards. Using humans as a mammal is fine, especially if the adaptations of Sherpa or another racial group to living in an extreme environment where there are known physiological adaptations of circulation or gas exchange are discussed. The key to 91155 is "way of life" - humans live on land and need to get oxygen from the air. The TKI task 2.3B has been updated this year to show the relationship between adaptations and how these help animals (mammals in this resource) survive in their habitat. The previous version's evidence statements had an over-focus on structure and function as the evidence, without enough links to way of life (EN 4) etc. For this reason choosing a water living mammal as well as a land dwelling is a good idea, as it gives students better opportunity to look at limitations and advantages, as well as the connectedness of the two systems.

Standard B1.1 / 90925 says, "A template or suitable format for planning the investigation will be provided for the student to use" (EN 4) This is for planning only, and not considered as evidence for the final method in the report on the investigation. Experience has shown that the use of templates and writing frames for assessment against standards can hinder achievement. This is because teachers tend to fail students if any section of the template is not filled in. As templates are designed to be for planning only teachers need to refer to the standard itself to be clear on what the students must have in their report. Remember also that we cannot use templates at L2 or L3.

Biology Educators' Association of New Zealand Te Rōpū Whakaako Koiora o Aotearoa

A Standing Committee of the New Zealand Association of Science Educators

Regional	Name	Regional	Name
Northland Region	Julie Harrisson	Taranaki Region	
Auckland Region	Mike Stone	Manawatu-Wanganui	Chris Corser
	Penny Daddy	Wellington Region	Sue Weich
Waikato Region		Nelson Marlborough	Sarah Johns
Bay of Plenty Region	Jean Grattan	West Coast Region	Erica Jar
Central North Island	Carrie Vander Zwaag	Canterbury Region	Matt Easterbrook
Gisborne Region		Otago Region	Pru Casey
Hawkes Bay Region	Marcia Hengst	Southland Region	Lee Pirini



IT IDEAS Office Lens

Many teachers take a photo of the white-board e.g. for those not present. However often these images are skew-if, show reflected glare & are hard to read. Office Lens is an app that allows the use to take photo of board, straightening the image, removing glare and bringing up contrast.

SciPad POSTERS

At SciCon we saw a new poster that SciPad has in production. It is long (2m+) and made of a durable, flexible plastic. This poster shows the skull and jaw of several of the key hominin species as well as a selection of tools and is designed to allow students to more clearly see trends in human evolution. Some lucky biology teachers got to take these posters home from SciCon. Jason is aiming to produce many more, getting them into schools at minimal cost, but it will take a while as the printer can only manage short runs each week.

SCICON SCHOLARSHIP WINNER

Jessica Cross, Southland Boys' High School

As a first year teacher who is currently teaching out of her specialised senior area Scicon was an immensely beneficial experience. I enjoyed listening to everyone's stories and exchanging ideas with BEANZ members and others. Teaching near the end of the country means it's easy to forget what a strong community of science educators there are in New Zealand. I came away with many resources and ideas which have already made a difference to my teaching looking at different modes of assessment and incorporating more hands on, problem solving activities.



BEANZ.ORG.NZ

Website Update

Launched at our General Meeting at Scicon, our new website provides us with more functionality for the future. As it is further developed this year there will be a members only area for access to resources developed by BEANZ as part of our service to members. A secure area for accessing paid practice examinations as well as the ability to check membership and access other information such as previous newsletters and upcoming events are all in the pipeline. Watch this space!

Biology Educators' Association of New Zealand Te Rōpū Whakaako Koiora o Aotearoa

A Standing Committee of the New Zealand Association of Science Educators

Executive Position	Name	Executive Position	Name
President (NZASE Rep)	Sharyn Varcoe	Curriculum Support Team	Terry Burrell
Senior Vice President	Kate Rice		Penny Daddy
Junior Vice President	Matt Easterbrook		Jo Hurst
Treasurer	Peter Sutton	Primary Biology Education	Hazel McIntosh
Secretary	Helen Mora	Tertiary Biology Education	Hamish Spencer
Publications Co-ordinator	Holly Brooshooft	Assessment Project	Bill van den Ende
Website	Ben Himme	Science Facilitators	Mikhal Stone
		Regional Rep. Coordinator	Sharyn Varcoe

SCICON SCHOLARSHIP WINNERS

Sarah Joyes, Wellington East Girls' College

I am a really grateful recipient of the BEANZ scholarship to Scicon this year. Obtaining a scholarship meant that our school could afford to send another teacher who only joined our science department last term. This was my first Scicon experience and I thoroughly enjoyed networking with other teachers and having the opportunity to listen to some really interesting talks relating to my own subject area as well as others. Time and time again throughout the conference I was reminded how important a coherent curriculum is and it seems that as teachers we are all keen to make links with other subjects and focus on fostering students who can use their science understanding to contribute to society and make informed decisions. Thanks to BEANZ for enabling me to attend this year.

Georgette Lampitt, Wellington East Girls' College

Thank you so much for my scholarship to attend SCICON 2016! I had an amazing time filled with intrigue, learning and also confirmation that my approach to teaching is aligned with current ideas and techniques. Not only was I able to delve deeper into areas of biology that I am familiar with but I was also able to explore topics outside my area of expertise in an inclusive and welcoming environment. The highlights for me were "Maker Space" by Michael Fenton where we were able to make mini machines that use environmentally friendly energy sources to explore real world problem solving, "Beyond The Wow Factor" by Ben Write where physics theory came to life with easy practical demonstrations and "Climate Change" by Andrew Tait from NIWA where we discussed the inevitability of climate change and how to model the outcomes for the future. The most valuable session I attended was run by teachers from Hobsonville School in Auckland. My school is currently trialing cross curricular hubs with juniors and it was fascinating to see how this is done effectively with NCEA. I found there were also many occasions to build contacts within and across specialties as well as collect fantastic resources! Thank you again.

Paula Brown, James Hargest College

Scicon was a great opportunity to catch up with old friends and make some new ones. It was great to put some faces to some names.

I am almost inspired to teach Physics, they have some really cool demos. I really enjoyed watching them and have some cool tricks up my sleeve to show my year 9 and 10's.

I also really loved learning about how things work at Hobsonville School. I left them with a real passion for what we can achieve if we work a little outside the box. With a huge love of Biology and Geography I have always struggled with my favourite subjects spanning to curriculum areas and it gives me hope one day they can be combined.

Thanks for giving me some money Beanz, it was very appreciated.

Barbara Morgan, Cambridge High School

July school holidays are always a welcome break in the middle of the school year and this year I had something special to look forward to, Scicon 2016. Having been a teacher in NZ since 2007 I have never managed to attend the conference due to one reason or another, which was usually because of budget constraints. Therefore, I decided to apply for the BEANZ scholarship and was delighted when I found out that I had been successful. As the date approached I became anxious as I found out that I would be moving during this time. Would I have to cancel and again not be able to attend? Fortunately, the move did not coincide with Scicon and I was able to go! One of the highlights for me was the keynote speaker, Alom Shaha, who was like a breath of fresh air. I share his vision and he was very motivating. An added bonus was that he lives in the same part of London that I grew up in. We had a wonderful conversation during our flax weaving session about education, living and teaching in London and places to visit in NZ. Another highlight was the networking amongst the participants and exhibitors. If anyone is considering attending Scicon in the future I would definitely recommend going and being prepared to participate in all that the conference has to offer. Lastly I would like to extend a big thank-you to BEANZ for enabling me to attend Scicon, it was fantastic!

SCICON SCHOLARSHIP WINNERS

Miho Davis, Taihape Area School

The BEANZ Scholarship assisted me to attend the SCICON 2016 for the first time. The conference was highly organised and the venue was perfect. I particularly liked science hands-on activities that were demonstrated by Alom Shaha, Ben Wright and Michael Fenton. Their online resources will be useful for my class activities. I also enjoyed talks of key speakers: Dr Michael Person (astronomy: Pluto), Lisa Matisoo-Smith (human evolution: What is a NZer), and Kevin Hackwell (ecology - a predator free NZ by 2040). The local trips (DHS, Weltec and GNS) were priceless experiences.

Sean McWilliams, Westlake Boys' High School

I would like to thank the BEANZ exec and members for the very generous scholarship, which enabled me to attend SciCon 2016 after our PD budget was allocated in advance. The scholarship went a long way to covering my conference costs, and allowed me to interact with some wonderful science educators; the conversations that take place with fellow teachers from other schools are, to me, as valuable as the keynotes at most conferences. The highlights for me included a trip to GNS (though working on ice core samples at -40°C isn't for the faint of heart), Hamish Campbell's address on NZ Geology, and Mike Stone's workshop on exploring Maori and Pacific contexts in Science. I look forward to seeing many of you at BioLive / ChemEd in 2017.

INTERNATIONAL BIOLOGY OLYMPIAD

The 27th International Biology Olympiad in Hanoi, Vietnam has come to a close, with exciting news for New Zealand! A Bronze medal was won by Max Langenkamp from Auckland Grammar and three Silver medals were won by Connor Leadley, Christ's College, Nikita Lyons, Waikato Diocesan School for Girls and Nico van Wijk, Pinehurst School, Auckland. Team Aotearoa spent months in training – the students competing with a field of 350 fellow student competitors from across New Zealand. Our New Zealand team of Nico van Wijk (Pinehurst School, Auckland), , Nikita Lyons (Waikato Diocesan School for Girls, Hamilton), Connor Leadley (Christ's College, Christchurch) and Maximillian Langenkamp (Auckland Grammar, Auckland) return triumphant to New Zealand.

