



Mathematics and Statistics Regional Newsletter • Central North • Jim Hogan

Information for teachers of mathematics and statistics in secondary schools | Term 2 | June 2012

Napier, Waikato, Gisborne, Bay of Plenty, Coromandel Reflections, Problems, Plans, Resources and Dates

May and June REPORT

I enjoyed travelling around the regions in May delivering Workshop 1, reestablishing and making new friendships. The workshop I ran was about reconnecting with the NZC through inquiry and relationships, numeracy, student pathways and unpacking two NCEA L2 standards. I threw in my inquiry of "How to Solve a Problem". Recently when visiting a classroom I was pleasantly surprised to see "How to Solve a Problem" clearly displayed and obviously being used. Thank you Michelle.

In the feedback forms from Workshop 1 I noticed that one of the most popular comments was **"Having an opportunity to meet, talk and share ideas and issues with other HOD's".** Wow! It seems such an easy thing to say but such a hard thing to do. Last year I did notice how isolated a teacher can be in a small school so perhaps we all have to make an effort to support another HOD. I am pleased there is now a platform for chat.

Here is a <u>Wordle.com</u> of the feedback. This is visual statistics. The word size relates to the frequency of occurrence. Obviously L2 and L3 are a current priority but resources, ideas and discussion are high. It is pleasing to see pathways strongly represented as well. These "graphs" take a few seconds to make and can be presented in many different ways to suit purpose.



NZMATHS BLOG - <u>http://nzmaths.co.nz/plc</u>

Please join this free blog. Today I answered a question concerning "1.7 Conditions of Assessment". I answered "re Conditions of Assessment on the TKI website for aligned standards. The term "free from unnecessary constraints" should be read with the sentence following which states "Collection of evidence for this standard could include, but is not restricted to, an extended task, an investigation, or a more formal activity." [Note the same sentences are in the C of A for each standard.] The intention was to free up assessment from the more common and traditional 1hr test. The next sentence "In all cases authenticity of evidence needs to be considered." puts a damper on this freedom but most of your suggestions above are OK. Reality means "open book is fine", "formulae of course are accessible", computers and technology (iphone/ipad/Android) could be used, "tick sheet may well tell them solutions so perhaps is not appropriate, access to practice papers should be of no use to students if they are solving a new problem. Hence make sure the problem is a genuine and new problem to be solved. Ensure this student did this thinking!"

You can access a host of useful and emerging information relating to all of the current achievement standards on this blog. My most serious advice is to sign up, read, ponder, consider and respond. Take part!

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PROBLEM CORNER

May's Problem: The moon is 14% bigger than usual (May 7). Compared to what? What calculation supports this very public statement? It turns out to be 14.5% and based on the apparent angular diameter of nearest compared to farthest.

See http://www.perseus.gr/Astro-Lunar-Scenes-Apo-Perigee.htm

June's Problem: What shape is Venus's transit across the Sun? Straight or bent?

http://transitofvenus.nl/wp/where-when/venus-curved-trajectory/

July's Problem: My car computer says I am travelling at an average speed of 84km/hr over a distance of 300 km. I am now on a good road travelling at 100km/hr. How far do I have to travel before the average speed increases to 85km/hr?

Cluster Organisation

The clusters of the schools in the combined regions are as below. If it is more convenient to be in another group please contact me. I split East and West BOP as they are a group with travel issues. Dates for Workshop 2/3 is in this update following.

Gisborne	North Waikato	South Waikato
Campion College Gisborne Boys' High School	Fairfield College Hamilton Boys' High School	Cambridge High School Hillcrest High School
Gisborne Girls' High School	Hamilton Christian School	Matamata College
Lytton High School	Hamilton Girls' High School	Melville High School
Ngata Memorial College	Hamilton's Fraser High School	Morrinsville College
Te Waha O Rerekohu Area	Huntly College	Otorohanga College
School	Nga Talatea Wharekura	Piopio College
IKKM O Kawakawa Mai-Tawhiti	Ngaruawahia High School	Putaruru College
IKKM O Te Waiu O Ngati Porou	Ragian Area School	St John's College
Tologa Bay Area School	St Pauls Collegiate	St Peters School
	Te Awamutu College	Taumarunui High School
Warrow College		Te Arona College
Westmount School		
	Waikato Diocesan School for	
	Girls	Te Wharekura O Te Rau Aroha
	Sacred Heart Girls College	Te Wharekurao Te Kaokoaroa o
		Patetere
Rotorua	Eastern BOP	Western BOP
Forest View High School	Edgecumbe College	Te Wharekura O Mauao
John Paul College	Kawerau College	Aquinas College
Rotorua Boys' High School	Opotiki College	Bethlehem College
Rotorua Girls' High School	Te Whanau-a-Apanui Area	Katikati College
Rotorua Lakes High School	School	Mt Maunganui College
Te Wharekura O Huiarau	Te Wharekura O Ruatoki	Otumoetai College
Te Wharekura o Ngati Rongomai	Trident High School	Papamoa College
IKKM IE KOUTU	Whakatane High School	Tauranga Boy's High School
western Heights High School		Te Puke High School
Coromandel	Hawkes Bay	Central Plateau
Coromandel Area School	Central Hawkes Bay College	Lake Taupo Christian School
Hauraki Plains College	Flaxmere College	Mangakino Area School
Mercury Bay Area School	Hastings Boys' High School	Rangitahi College
Paeroa College	Hastings Girls' High School	Reporoa College
Thames High School	Havelock North High School	Tauhara College
Waihi College	Hukarere	Taupo-Nui-A-Tia College
Whangamata Area School	Iona College	Tokoroa High School
	Karamu High School	Tongariro School
	Lindisfarne College	TKKM O Whakarewa I Te Reo Ki
	Napier Boys' High School	Tuwharetoa
	Napier Giris' High School	Taumarunui High School
	Sacred Heart College (Napler)	
	St Joseph's Maori Girls' Collogo	
	Tamatea High School	
	Taradale High School	
	Te Aute College	
	William Colenso College	
	Woodford House	





Meeting Dates and Venue, please send an email to say you will be there.

All material is available for everyone from my website, or on request by email. See <u>http://schools.reap.org.nz.advisor</u>. There is another website being developed for such material but until it happens please use this one.

Next Workshop 2/3 Content: This is a combo workshop because there are TOD's planned in most regions. Gisborne 30th July, Napier 17th August, BOP 10th Sept. The following workshops are targeted to Middle Leaders and will focus on unpacking more of L2 and beginning L3, courses at L3 (or pathways inclusive of L1 and L2). Unpacking means content of the standards, emphasis, connections, learning resources and modes of assessment. There will be time for news and sharing ideas as well. Hopefully we will be able to have another half day in Term 4 to further unpack calculus and statistics standards.

Workshop 2/3 • Unpacking L2 and L3 standards – Courses – Sharing info.

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July 18 th – Taupo	July 19 th - EBOP	July 23 rd - Rotorua	July 26 th - WBOP
1:30pm to 4:30pm	1:30pm – 4:30pm,	1:30pm – 4:30pm	1:30pm – 4:30pm
REAP Central	Trident HS Board Room	Lakes HS	TBC, Mayfield House
August 7 th – Thames	Aug 14 th – N Waikato	Aug 15 th – S Waikato	Sept 4 th – Napier
1:30pm – 4:30pm,	1:30pm - 4:30pm,	1:30pm - 4:30pm,	12:30pm - 4:30pm,
Thames HS	Ruakura North Rm	St Peter's School	R101 EIT , Taradale
Sept 5 th – Gisborne	Content: Unpacking more L2 and this time some L3 standards ;re content,		
8:30am – 1:30pm,	emphasis, assessment, and a learning resource. Courses L3 (and L2).		
SSS, Bright St	Latest news; chat time of course and sharing of info.		

Latest Newsletters

May 2012 Moderator Newsletter (embedded link)

SEQUAL 2012/011 (embedded link)

Contains information about transitions and exclusions. Vital information for course selections. There is another link inside this document for the <u>exclusions list</u> (embedded link).

Resources:

CAT PREP. This is locally produced so please support. Go to <u>www.ddresources.co.nz</u> and look for the **Preparation for CAT** book @ \$5.00. Clearly specifies A, M and E type thinking. There are also PEA or Preparation for External Assessments booklets on the website all very well presented, write in and inexpensive.

CAT MARKING/ MODERATION HELP • BOOK IN j.hogan@auckland.ac.nz

24th SEPT is the Monday following the CAT (on 18/19 SEPT) and the day the marking guides are released. I will run a CAT marking/moderation on line using SKYPE or email or phone, all day. I was going to run a workshop at HQ REAP TAUPO but this way you do not need to travel. DITTO the 27th SEPT all day. Email for a SKYPE session. There will no doubt be different interpretations or ambiguities so remember this help. I will have been in contact with other facilitators.

i-Phone - iPad - iPad - Android apps

You need to discover these very cool, free or low cost applications. Here are three that I have trialled.

1. **GRAPH CALC** is a graphing calculator available FREE on these devices and allows function, implicit, parametric and polar graphs to be drawn. TRACE with SNAP to intersections and roots. Solutions to more decimal places than you need to go to the moon. Auto TABLE feature. PINCH the screen to change the shape of the graph. Best feature...SHAKE the device to undo. Fun and in full colour.

2. **ANGLE METER** measure the two off-vertical angles LEAN and TILT or whatever you might like to call them. Very, very sensitive. Just lean the iPhone against the surface and get instant angle measure.

3. **EASY MEASURE** is a cool little application that any Year 11 student could appreciate. It uses the vertical angle between your vertical eye height and the target at floor level. The base line is your eye height above the floor. The camera shows a pointer located at the distance you wish to measure. Instant and continuous distance is calculated. It is a bit of a rough measure but is within 5 to 10% or usual error used at Year 11.

The real mathematics begins with writing an application that does something like the above. I am investigating the difficulty of producing an application. There is online help from APPLE. Make a million! Just write an app and sell a million copies for \$1. This is appealing notion and I am recording all my bright ideas.

LOGO Programming • (LOGICAL THINKING)

We all used LOGO and played with it. Seymour Papert invented the language and it is still a useful, modern procedure based starting point for new programmers. I just Googled "LOGO programming language" and found a free version for my Mac. Twenty minutes later I was playing with the "Random Walk in 2 dimensions". This is a simulation of the old problem of walk forward 5 steps, toss a coin to decide which way to turn and repeat. Where do you end up? Do you ever return to the starting point? Complicate the problem by never returning to a place where you have been. A great little exploration to create interest.

A quote from Professor Wally Penetito (Victoria University) on Maori Achievement. "...Maori youth will not care what their teachers know until such time as they know their teachers care for them and what they represent." There is a pertinent message in here for all. Take great care developing relationships. (June 2012)





Coming Events

BOPMA Mathmind – The Arena, Rotorua Girls' High School, 28th August, 12:00 NOON registration. See <u>www.bopma.co.nz</u> for more details, previous questions, guidelines and if you are allowed calculators. Teachers are expected to mark so please read the operating procedures.

WAIKATO MATHEMATICAL ASSOCIATION WMA Waimaths Competition 2012 • August 9th

www.waikatomaths.org

Hamilton Gardens Pavilion, Years 7 /8 4:30pm to 6:00pm, Years 9/10/11 7:00pm to 8:30pm. Resources on this website and a list of all Waikato Schools. Previous questions? Use BOPMA or AMC. Not sure how to get previous WMA questions.

Algebra CAT • 18/19th September

The two papers will be similar I expect because making them different causes comparison issues. Choose the one you want to use and ignore the other! The two dates are for convenience as some schools have other events organized. They are not designed to give students a sneek preview. Please respect this attitude!

GOOD STUFF

Sir Paul Callaghan

http://www.youtube.com/watch?v=OhCAyIIInXY

TED.COM

Explore this website for stimulus material for students. There is some excellent discussions, presentations.

Amazing Ideas Search

Visit <u>www.telecom.co.nz/amazing</u> and "tell Telecom what the future could be like thanks to Ultra Fast Broadband." Good imagination development opportunity. Class or individual or school wide responses wanted. Ten \$2000 prizes!

PD QUESTIONS for you to PONDER

1. Do you have a plan to help students learn how to study?

Google Ideas "Auckland Mathematics Association"; "probability experiments"; "starter of the day"; "random numbers"; "simulation"; "ue entry NZQA"; "senior secondary guides";

- "PROBABILITY GAMES"
- <u>http://www.free-training-tutorial.com/probability-games.html</u>
- STARTER OF THE DAY
- <u>http://www.transum.org/Software/SW/Starter_of_the_day/Similar.asp?ID_Topic=30</u>
- POT OF COLOURS
- <u>http://www.transum.org/Software/SW/Starter_of_the_day/starter_March18.ASP</u>
- NZMATHS NZC http://www.nzmaths.co.nz/nzc-and-standards
- Good progression, resources and examples
- NZMATHS SNP <u>http://www.nzmaths.co.nz/snp-activities?parent_node</u>=
- 20 lessons on random numbers and prob expts, language.
- NZMATHS <u>http://nzmaths.co.nz/key-mathematical-ideas?parent_node</u>
- Key Mathematical ideas good.
- Senior Secondary Guides
- <u>http://seniorsecondary.tki.org.nz/Mathematics-and-statistics</u>

Advance Notice of BOPMA Conference 2012

Venue BOP Polytech Windermere Campus, November 23rd all day, Cost \$35 pp.

HOT TEACHER LITERACY TIP

Say to students "I want you to write some sentences about "xxx" and here are some words I want you to use". This tactic will help develop the literacy writing capability. Record good statements as wall displays. Speak – read – write – listen!

Future in TECH http://www.futureintech.org.nz/ See peoples stories.

All the best, thank you for your support, report any cool resources and enjoy the July break. Jim Hogan