

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

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

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 [exclusions list](#) (embedded link).

Resources:

CAT PREP. This is locally produced so please support. Go to www.ddresources.co.nz 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 www.bopma.co.nz 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 sneak preview. Please respect this attitude!

GOOD STUFF

Sir Paul Callaghan

<http://www.youtube.com/watch?v=OhCAyIIIlnXY>

TED.COM

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

Amazing Ideas Search

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

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