Graphical Times.
Volume 11, Issue 45, 2013.

Welcome back to term 1! Hope that you had an enjoyable summer break and rearing to go for the 2013 academic year.

Please find this term 1 newsletter and pricing informative and price saving. '**Back to school'** prices are valid until 28th February 2013.

What's in here!

Included in this terms newsletter is: Calculator activities for the Classpad 330+, graphic and scientific calculator:

- **Worksheet for the Classpad 330+ and similar models: Confidence intervals**
- **Worksheet for the FX9750GII and similar models: Expectation algebra and Lists and Expectation algebra and probabilies**
- **Worksheet for the FX82AU: Bar codes and how they work**

Term 1, 'back to school' 2013 pricing, valid to 28th February 2013 or whilst stocks last. Term 1, 2013 pricing, valid from 1st March 2013.

N.B. The 2013 Graphic Technologies Catalogue is available on request. Please email us: graph.tech@xtra.co.nz to receive your free copy.

NCEA level 1, 2 and 3 new achievement standards.

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Achievement Standard NCEA L1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	1.11	1.12	1.13
Graphics calculator	√	NA	√	√	√	√	√	√	√	√	√	√	√
CAS Calculator	√	NA	√	√	√	NA	√	√	√	√	√	√	NA

Achievement Standard NCEA L2 new stds	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	2.11	2.12	2.13	2.14
Graphics calculator	√	√	√	√	√	√	√	NA	√	√	√	√	√	√
CAS Calculator	√	√	√	√	√	NA	NA	NA	√	√	√	NA	√	√

Achievement Standard NCEA L3 Statistics & Modelling retiring stds	3.1				3.5		3.7
Graphics calculator	√				√		√
CAS Calculator	√				√		√

Achievement Standard NCEA L3 Calculus retiring std			3.3	
Graphics calculator			√	
CAS Calculator			NA	

Achievement Standard NCEA L3 new stds	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12	3.13	3.14	3.15
Graphics calculator	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CAS Calculator	√	√	√	√	NA	NA	NA	√	√	√	√	√	√	√	√

Scholarship Statistics	
Graphics calculator	√
CAS Calculator	√

Scholarship Calculus	
Graphics calculator	√
CAS Calculator	√

FX-CG20 Graphic Calculator.

The large, high-resolution colour display with natural illustration shows fractions, square roots and other numerical expressions in the same way that they appear in maths textbooks, POA.

Technical data:	Functions:	Graph functions:
Memory: 61 KB RAM	High-resolution colour display with over 65,000 colours	Cartesian coordinate system
Flash ROM: 16 MB	Innovative Picture Plot application for photo and video analysis	Inequality graph and applications
Power supply: battery-operated	7 colours can be used in various applications	X=constant graph
Size (H x W x D): 188.5 x 89.5 x 20.6 mm	8 lines, each with 21 characters	Graphs of parametric functions
Weight: 230 g	Colour-coding to simplify understanding	Functions in polar coordinates
Batteries: 4 x AAA	Simple to connect to a PC as a USB mass storage device	> 20 graph memory
Basic mathematical functions:	Natural V.P.A.M. natural input and output mode	Graph labelling
Fraction decimal fraction conversion	Textbook-style writing	Value table
Solve (interactive)	Solve equations with integral, differential and probability functions	Recursion graph - Recursion parameters - Web plotting
First and second derivative (numerical)	Ref- and Rref command lines for levels or reduced row level form, commands for matrix diagonalisation	Graphs of conic section functions and corresponding applications
Integration (numerical)	Whole random numbers	Dynamic graphs
Max/min	Unit conversion	View window: X-dot parameter
Complex functions	GCD and LCM function	Zoom/trace functions - Start position: centred - Direct trace entry
Matrix algebra - Maximum matrix size: 255 x 255 - Number of matrices: 27 - Calculation of determinants - Calculation of inverse matrix	Remainder function	4 different types of illustration for X-values
Linear equations (max. 6 unknowns) - Polynomial root calculation - Solve systems of linear equations - Equation solver	Chi-square GOF function	G-Solve (graphic calculation) - Roots - Intersection points - Local minima and maxima - Gradients - Definite integrals - X and Y value calculation
Polynomial equations (max. third-order)	Pie and bar chart	Illustration of tangent, normal and inverse function of a graph
Calculations to the power of n	Financial mathematics - Loans, depreciation	Split-screen display - Graph and graph - Graph and value table - Graph of a value table - Graph and value table linked interactively
Scientific	Pre-installed geometry add-in	**Statistics**
Scientific applications with physical constants (ADD-in)	Backlights	Statistical calculations: medial values, median, sum
Calculations with scientific numerical notations	Pre-installed ECON2 data logging application	Statistical graphs - List-based statistics - Histogram - Box plot - Modified box plot - Distribution curve - Scatter plot/xy line - Med-med line

		- Linear/quadratic/cubic/quartic regression - Exponential/logarithmic/power regression - Trigonometric regression - Logistic regression - Copy function for regression equations - Trace function
Additional specifications	**Additional specifications**	Lists - Maximum list size: 999 - Number of lists: 26 lists, 6 files - Lists with complex numbers - List designation
Unlimited history: 255 bytes	Screenshot generation	**Cash-flow statement**
Function list	Can be connected directly to Casio USB projectors	**Geometry (add-in): pre-installed**
Clipboard	Pre-installed Econ2 (add-in)	**Spreadsheet**
7 system languages supported	Casio logo appears when switching off	**eActivity**
Add-in software system	Communication - Calculator to calculator (3-pin to 3-pin) - Calculator PC (USB) - Add-in communication - OS upgrade	**Programming function**
Disk space - Program - Backup		

Workshop opportunities.

Workshop opportunities: If you would like to have a workshop for teachers and or students then please make contact with *Graphic Technologies*. A large number of schools are taking up this opportunity either singularly or as a cluster of schools (with both the graphic calculator and the ClassPad330+), to look at how the graphic calculator and CAS could impact on and be integrated into classroom practice. With NZQA having acknowledged that year 12 & 13 students without a graphical calculator being disadvantaged, a large number of schools are taking up the opportunity to up skill teachers and students on this mathematics/statistics technology.

Classpad update.

Check out the new classpad. http://www.casio-intl.com/asia-mea/en/news/2012/fx-cp400/

Websites of interest.

Yes Minister clip. http://www.youtube.com/watch?v=G0ZZJXw4MTA&safe=active Sir Humphrey Appleby demonstrates the use of leading questions to skew an opinion survey to support or oppose National Service.
Some web links for botstrapping and experiments for NCEA L3:
http://3rs.ccac.ca/en/research/reduction/experimental-design.html
http://www.corwin.com/upm-data/29173_Millsap___Chapter_2.pdf
http://curiouscat.com/bill/101doe.cfm
http://stattrek.com/experiments/what-is-an-experiment.aspx
http://en.wikipedia.org/wiki/Design_of_experiments
http://webspace.ship.edu/cgboer/experiments.html
http://www.stat.auckland.ac.nz/~iase/publications/icots8/ICOTS8_4B2_ENGEL..pdf
http://statistics.about.com/od/Applications/a/Example-Of-Bootstrapping.htm
http://www.stat.rutgers.edu/home/mxie/rcpapers/bootstrap.pdf
http://www.stat.auckland.ac.nz/~wild/BootAnim/index.html and http://www.stat.auckland.ac.nz/~wild/VIT/index.html for bootstrapping animations.
http://www.stats.govt.nz/tools_and_services/services/schools_corner/SURF%20for%20schools.aspxStatistics NZ has released a set of datasets based on the NZ Income Survey. Each dataset contains about 11,000 records for six variables: four categorical and two numerical. Each dataset is a Synthetic Unit Record File (SURF), and the whole set (the Super

SURF) consists of 100 different versions. Students can explore the features of the distributions and relationships. These are close to the features in the original real dataset. This product should help meet the needs of teachers and students, as they work on the Mathematics and Statistics area of the NZ Curriculum. It can be found on Schools Corner in the Statistics NZ website.

http://www.numberphile.com/index.html videos about numbers and stuff

http://new.censusatschool.org.nz/resources/ Resources for teaching statistics *(Last updated 07/01/13).* Select your desired level or achievement standard to view details of the standard, FAQ, activities, resources and links to further your knowledge.

Program to support the use of the FX9750Gii.

In 2011 Casio Education NZ launched the 'Top Schools Program' to support schools using the new model of FX82AUplus scientific calculator. Registration numbers and general feedback indicated that the resources provided were of great benefit, so Casio Education NZ is launching a similar program in 2012 to support schools currently using (or wanting to use) the FX9750Gii graphic calculator. Details were released in term 2, 2012, an information pack was sent in the post. The goal is to have all senior students in New Zealand using a graphics calculator so that no one is disadvantaged during NCEA examinations. Professional development courses will be offered in conjunction with Graphic Technologies supporting the program which looks to offer a sample calculator and comprehensive 'How to get started on your FX9750Gii' instructional manual. Details of the program can be uploaded from www.casio.edu.monacocorp.co.nz.

Worksheets downloaded off the web.

Visit Monaco Corporation and Graphic Technologies websites to view and download worksheets. There are links to other informative mathematics education websites too. For teachers we currently offer a large number of 'classroom ready' resources available and are designed primarily for the CASIO® FX82AU, FX9750Gii, FX9750G, FX9750G+, CFX9850GB, CFX9850GB+, CFX9850GC+, FX9750GA+ and FX9750Gii models of graphical calculators and the ALGEBRA 2.0. There is also a variety of activity sheets designed for the ClassPad300, 300+, 330A and 330A+ models. All of the activities and worksheets are designed for beginners to advanced users of the GC and CAS. More have been added to the website since the last newsletter.

Please visit: www.casio.edu.monacocorp.co.nz and http://graphic-technologies.co.nz.

13th Biennial NZAMT conference.

The organisers of the New Zealand Association of Mathematics Teachers 13th Biennial conference warmly invite all teachers of mathematics and statistics, and all workers in mathematics and statistics. NZ's future citizens have plenty of challenging issues to tackle, in society, economy, and environment. These all require strong mathematical and statistical thinking. We'll exchange experiences on these, hear from specialists, and focus on four strands:

• Transitions	• Curriculum	• Assessment	• Technology

We'll assess how we work with students in ways that are consistent with the principles of the Treaty of Waitangi and strongly illustrate the cultural competencies, Tātaiako. We'll share experiences about how we give bicultural strength to the learning of mathematics and statistics. **Registrations will open 1 February 2013.** Please bookmark http://nzamt13.org.nz/

A last word!

Well again, that's all I can fit onto the 4 pages! Enjoy the term! Hope to see you at some workshops or hear from you via this newsletter or otherwise! If you would like to contribute or have suggestions as to what you would like to have discussed via this medium, please do not hesitate to contact us either by snail - mail, email, website, telephone, text or fax.

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