

TexMATYC News

Texas Mathematical Association of Two-Year Colleges

Spring 2015

President's Message

By Cynthia Martinez, Temple College. TexMATYC President.

Happy Spring! While many of us have enjoyed our week off during Spring Break, we're all continuing to plan out the remainder of the semester... no rest for the weary!



Have some Me-time, take a stroll, see a good movie or venture out on a day trip!

As I think about the flowers that will soon be in bloom, it brings to mind how much I have grown professionally over the years. When I began teaching, I had knowledge of mathematics, but had to work on getting students to share an interest in math. Later in my career, students respected me and were interested in what I taught. However, something was lacking - I needed to figure out how to inspire students to see how their interest in math could lead to a potential career. I attended conferences and workshops and read articles on how to boost students' interest in math, and I incorporated ideas like mini-projects and quirky math topics.

The Dana Center created varied topics in its QR course, many of which are not typical to a liberal arts math course. These topics inspire students to question their career pathway. Even though the curriculum doesn't address "normal" topics, it shows students how math can truly effect their lives, and it gives instructors a chance to think about how this kind of course could evolve. As we think about the rain bringing Spring and Spring bringing flowers, let's also think about how we can help students see how math can flourish their lives.

Attendees of the TexMATYC General Meeting during the TCCTA convention in Dallas expressed concerns that low cut-off scores on the TSI-A are allowing under-prepared students into credit-bearing math courses, and those students are often unsuccessful. The audience charged the executive board with writing a letter to the staff of the THECB as well as our legislators. Since many IR offices are preparing reports to the CB, I can only provide data on the letter as it relates to my institution. I will contact the CB staff and report back on any insights and statistics I am able to gain.

Wishing you an awesome rest of the semester! In addition to taking some time to yourself, take a few minutes in your classes to share what inspired you to a career in mathematics. Who knows, your story may plant a seed that inspires a student to take interest in the study of math.



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TexMATYC Conference



Gary Rockswold



Natalie Vega-Rhodes



Pauline Chow & Andrea Hendricks



Saleem Watson







Core curriculum panel discussion

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2015 Conferences

NISOD's 37th Annual International Conference on Teaching and Leadership Excellence – Austin TX May 23-26, 2015 www.nisod.org

41th AMATYC Annual Conference– New Orleans, LA November 19-22, 2015 www.amatyc.org

Desmos

O. Pauline Chow Sr. Professor of Mathematics Central Pennsylvania's Community College, HACC



These days we all are under the

pressure of course redesigning our developmental math curriculum. However, we still have a full and compact curriculum to teach in a shorter amount of time. How can we engage students in learning math with technology that can be easily available both inside and outside the classroom?

Desmos.com is a graphing calculator website that works on any computer or tablet (e.g. iPad), and can be downloaded as a Google or Apple app to smartphones (e.g. iPhone, Android). It is truly a hand-held graphing device. I learned of the website and saw its powerful graphing capabilities while attending a state conference. Upon returning to the college, I shared the website with all math instructors and quietly bookmarked the website in all math smart classrooms. Now I am desmos happy!

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The powerful features of Desmos include the ease of graphing functions (polynomial, rational, radical, absolute value, etc) and implicit equations (circles, conics, polar etc) and adding the slider(s) for exploring the concepts. We can pull up tables instantly, change the colors of the graphs, move the mouse to change the window, or grab real-life data from websites and do regression. It is a great tool to engage students in exploring, discovering, and talking about math concepts. This gives a tremendous opportunity to make mathematics alive graphically, numerically, and verbally when students are in the classroom.

For example, a regular lesson on transformation in a College Algebra class will take at least 30 minutes to set up tables and graphs to go over different types of transformation. Most of the time we use base graphs such as $y = x^2$, y = |x|, or $y = x^3$ for illustrations.

Now the lesson will take about 5 minutes and functional notation can be used to strengthen the understanding. A screen shot to show the set up.



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Similar lesson will be for other transformations.

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We can use trigonometric function by limiting the domain to illustrate the transformations for great exploration. The function is entered as a piece-wise function.



Another example will be the slope-intercept form of a linear equation. The slider will be a great tool to help students explore and learn the slope (positive, negative, and zero) and *y*-intercept of the graph of the line. A table of values can be added for discussion. It will be updated instantly if there is a change in the slope and/or *y*-intercept. This lesson can be introduced in the Beginning Algebra or Intermediate Algebra class.



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In conclusion, desmos.com is a powerful hand held graphing device at both developmental and college math levels. Students will learn the depth of the concepts through exploration and discovery. Instructors can ask better critical thinking questions on the tests. Please feel free to contact me for any questions.

Wish you desmos happy ⁽²⁾ O. Pauline Chow <u>opchow@hacc.edu</u>

Cryptograms

Created by Dr. Jeffrey Groah, Lone Star College-Montgomery

Answers will be in the next issue. Please email Heather Gamber (<u>heather.a.gamber@lonestar.edu</u>) your answers. The first correct response to each cryptogram will be acknowledged in the next issue, with full bragging rights.

- 1. KDD XCQ XCQTHV TM XCQ JTXZTE TM MDLZYI CKI ALIX OQQE HQYLPQY XT XCQ ITDLXZTE TM KEKDVXZP MTHJLDKI. DQTECKHY QLDQH
- 2. CPV AZADHYU NOQR, OQ YHH CONVB YQR JZDQCUOVB, PYB YHGYKB CVQRVR CZ WZ XK QDNXVUB OQ VBCONYCOQW CPV GVOWPC ZT VFORVQJV. GOWNZUV ZQ VFORVQJV
- 3. PE PY ELF WNEGOF QV NUU ZOFNEWFYY WQE EQ MF FCNHE. FRIGWR MGOSF

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Solutions for the last issue:

- 1. ANYONE WHO CANNOT COPE WITH MATHEMATICS IS NOT FULLY HUMAN. AT BEST HE IS A TOLERABLE SUBHUMAN WHO HAS LEARNED TO WEAR SHOES, BATHE, AND NOT MAKE MESSES IN THE HOUSE. ROBERT HEINLEIN
- 2. I TURN AWAY WITH FRIGHT AND HORROR FROM THE LAMENTABLE EVIL OF FUNCTIONS WHICH DO NOT HAVE DERIVATIVES. CHARLES HERMITE
- 3. BECAUSE THE SHAPE OF THE WHOLE UNIVERSE IS MOST PERFECT, AND, IN FACT DESIGNED BY THE WISEST CREATOR, NOTHING IN ALL OF THE WORLD WILL OCCUR IN WHICH NO MAXIMUM OR MINIMUM RULE IS SOMEHOW SHINING FORTH. LEONHARD EULER

Math Apps

Check out the free PhotoMath app. https://photomath.net/en/

A student can point his or her smart phone camera at a printed mathematical expression and the app gives the step-by-step solution. The supported features are pictured below, but more are being added.





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Joke of the Month

Just heard there was an explosion at a pie factory nearby: 3.1415927 injured.



Got News?

If you know of any exciting news in mathematics, have it published in your TexMATYC newsletter. Submit articles to Heather Gamber at <u>heather.a.gamber@lonestar.edu</u>.

Visit us at <u>www.texmatyc.org</u>

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