

**NHSTE ~ Tech Teachers/Integrators SIG**

**Differentiated Instruction &**

**Integrating Technology into Gr. 4-12 Math Curriculum**

SERESC, Bedford, NH

**Thursday, January 26, 2012**

**OPENING SESSION (9:00 to 9:45) in Rooms 200/201**

***Formative Assessment Online: ASSIST and ASSESS students instantly!***

*presented by* *Cristina Heffernan, Worcester Polytechnic Institute (WPI)*

Teachers are asked repeatedly to use data to inform instruction. Researchers at WPI have built a free online tutoring system to easily collect and analyze data. It blends assessMENT and instructional ASSISTance to help teachers with formative assessment. Hear how it is being used with real students in many situations.

**REMINDER:** the **Exhibitor Playground Area** is open from 8:30 a.m. to 3:10 p.m., so be sure to plan a time   
to check this out and get some “hands-on” experience with our eight exhibitors!

**AM CONCURRENT SESSIONS**

**Session 1: 10:00 to 10:35** ~ Please select one of the following sessions:

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| --- | --- | --- | --- |
| Room 200  **4th Grade Geometry & Google SketchUp** [UE] | Room 201  **Hands-on with ASSISTments - Be an ASSISTments Teacher & Student** [UE, MS, HS] | Room 209  **Using TI Technology to Differentiate Instruction in the MS & HS Math Classroom** [MS HS] | Room 210  ***"Flipping"* the Math Classroom** [UE, MS, HS] |

***4th Grade Geometry & Google SketchUp*** *~ Carol Mortenson & David Ciarla, Sandown Central School*

See how Carol and David use Google SketchUp to help 4th students at Sandown Central Elementary School explore Geometry concepts. First, the students create 3D models that show various differences in volumes. Then they create models of their own design by combining different shapes. Math skills, technology integration skills, and creativity skills are all addressed with this 21st century classroom project. Presenters demonstrate additional innovative and engaging ways to display 3D models created in Google SketchUp, by using augmented and virtual reality program resources. All of the program resources used are **free**!

***Hands-on with ASSISTments - Be an ASSISTments Teacher & Student*** *~ Cristina Heffernan, WPI*

Bring your own device, iPad, laptop, iTouch, Smart Phone etc. and you walk through problem sets as a student and then go in and look at your data as a teacher. Information on how to use ASSISTments with your students is shared as well.

***Using TI Tools to Differentiate Instruction in the MS & HS Math Classroom*** *~ Jim Donatelli, Texas Instruments*

How do we increase student time-on-task and improve student performance on assessments? This session focuses on teaching and learning tools from TI that increase teacher effectiveness and student performance. Connections between TI tools and Common Core Standards will be demonstrated.

***"Flipping" the Math Classroom*** *~ Brent Beckman, TechSmith Corp. & Lori-Ann Provost, SHI*

One of the more exciting things happening in education in the past few years is the 'flipped" classroom. "Flipped" classrooms occur when the teacher combines lecture material and computer screen content into a single video and then shares with students prior to direct instruction. By watching the material before class, students and teachers can have a completely different interaction when they are face-to-face, in essence, "flipping" the classroom.  In the "flipped" classroom, homework comes first then direct instruction.

**Session 2: 11:00 to 11:35** ~ Please select one of the following sessions:

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| Room 200  **Innovative Use of Sketch Pad in the Algebra Curriculum** [HS] | Room 201  **Built in Moodle: The Universally-Designed Math Class** [UE MS] | Room 209  **Helping Every Student Succeed in Math** [UE MS HS] | Room 210  **Necessary Skills for Algebra & Higher Order Math**[MS HS] |

***Innovative Use of Sketch Pad in the Algebra Curriculum*** *~ Craig Sheil & Brenda Hinz, Bedford High School*

Have you ever used Geometer SketchPad in the Algebra curriculum? Want to learn how to replicate images with the use of functions and their transformations in Geometer's SketchPad? Participants learn how the project was implemented into an Algebra II curriculum to show competency with this skill. Trust us, you will be inspired by the students' creations and creativity.

***Built in Moodle: The Universally-Designed Math Class*** *~ Kathleen McClaskey, President EdTech Associates*

With the need to provide 24/7, anytime, anywhere, any pace learning experiences to ALL students, the need to create digital learning environments that are universally-designed is vital. Using the three principles of Universal Design for Learning: multiple means of representation, multiple means of engagement and multiple means of expression, discover how a teacher created a digital learning environment in Moodle for her students. Learn how a math Moodle site was designed using an instructional structure of activities, visuals, videos and learning experiences that engaged students, provided alternative representation of instruction and offered different opportunities for students to express their learning.

***Helping Every Student Succeed in Math*** *~ Diane Houle, Renaissance Learning*

Discover how Accelerated Math for Intervention builds a dynamic environment for learning, identifies and addresses gaps in critical skills, targets instruction with differentiated practice, increases student engagement and generates actionable data.

***Necessary Skills for Algebra & Higher Order Math*** *~ Julie Armitage, Scholastic*

Learn how Marilyn Burns, the leading expert in the math education, created a print based powerful intervention tool based on 40 years of research, which focuses on rebuilding the critical foundations in math and begins to help students with the skills necessary for algebra and higher order math.  Learn how Marilyn Burns incorporates the pedagogy of instruction and best practices of teaching mathematics to help students not just catch up but keep up.

**POST LUNCHEON PRESENTATION (12:30 to 1:00) in Rooms 200/201**

***Two Solutions for Struggling Math Students***

*presented by Cyndy Currier, NHSTE Licensing Program Manager, ccurrier@mac.com*

Preview Penda and Ascend Math, two very different solutions, yet both help increase student proficiency in math. Penda gives students and teachers a choice. Penda is flexible and dynamic and targets middle and high school students. Teachers and Students can use in ways that best meet their needs, such as differentiation, remediation, RTI and reinforcement. Ascend Math is an individualized program that assesses students math knowledge against the State standards and proscribes and individual learning plan with videos, activities and post assessments.

**PM CONCURRENT SESSIONS**

**Session 3: 1:20 to 1:55** ~ Please select one of the following sessions:

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| Room 200  **Using Google Docs & Google SketchUp in MS Math** [MS HS] | Room 201  **Making Math Matter - A 21st Century Intervention Model** [UE] | Room 209  **SMART's PE & XE Student Response System in a Math Classroom** [UE MS HS] | Room 210  **Build Automaticity of Math Facts with Reflex Math** [UE MS] |

***Using Google Docs & Google SketchUp in Middle School Math*** *~ Rich Decoteau, Cooperative Middle School*

Projects used in middle school classrooms are demonstrated. Each project involves solving a "real-world" problem that integrates the students’ math skills along with the use of a Google spreadsheet and Google SketchUp.

***Making Math Matter - A 21st Century Intervention Model*** *~ Amy Hood, Unity Elementary School*

Learn how ordinary mortals can incorporate 21st century technology tools in their elementary school classrooms to enliven core math instruction, differentiate for mixed abilities, and provide focused interventions! Armed with ARRA dollars, our two districts in central NH set out to change the way we deliver math instruction. Through the use of interactive white boards, netbooks, and other application technologies, we have been able to achieve higher levels of student engagement and improve students' math skills in grades 2-8. Garner an overview of the project and see how technology was incorporated into existing curriculum and used to extend past teaching practices in creative ways. Examples of specific software and web resources are presented, along with samples of student work. Special attention is given to describing strategies that worked versus painful pitfalls to avoid!

***SMART's PE & XE Student Response System in a Math Classroom*** *~ Barry Waldner, Valley Communications*

Educators experience a hands-on demonstration of the newest generations of the SMART PE & XE Student Response System in a Math Classroom. Emphasis focuses on how SMART's Student Response System and Software make the math experience more interactive for teachers and students.

***Build Automaticity of Math Facts with Reflex Math*** *~ David Cunningham, ExploreLearning*

How are math facts mastered? Which methods promote automaticity across a broad range of students?  What if we could solve the problem of math fact fluency in just 10 minutes a day? Learn how to optimize classroom instruction and practice through empirically validated methods that are effective, efficient, and fun. Come and see Reflex – a new online product from ExploreLearning, makers of Gizmos.

**Session 4: 2:20 to 2:55** ~ Please select one of the following sessions:

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| Room 200  **Learn to be a "Rock Star" using Web 2.0 tools with your students!** [UE MS HS] | Room 201  **Why Sakai? Hybridizing your HS mathematics courses!**[HS] | Room 209  **The Math of the Universe** [UE MS HS] | Room 210  **Do you want a REPORT or do you want a SOLUTION?**[MS HS] |

***Learn to be a "Rock Star" using Web 2.0 tools with your students!*** *~ Linda Otten & Stephanie Haulk, Belmont MS*

Have you wondered how to assess students to see if they really understood what you taught? Instead of the end of the unit test, Linda and Stephanie have designed alternative assessments that include Glogster, Xtranormal, Prezi, AudioBoo, Videos, and the SMARTBoard to name a few. Presenters show student project examples and include information on how to start your own evidence-based assessments.

***Why Sakai? Hybridizing your HS mathematics courses!***  *~ Kerry Cook, Franklin HS*

Come learn about the Sakai learning platform. Explore how to transform your high school math courses into hybrid courses with an online component. Hear about hands-on experiences with Sakai as a student in Kerry’s Statistics class. Take an online quiz and submit an assignment through Sakai. Leave this session feeling confident that you could use this tool in your classes. Participants are encouraged to bring a laptop or other mobile device to log into Sakai.

***The Math of the Universe*** *~ David McDonald, McAuliffe-Shepard Discovery Center*

We live in a huge and wonderful universe. A lot of it is describable by math. This workshop investigates ways to describe the scale of the components of our universe in a way that students of various ages can understand. Also explore the force of gravity in our universe and its implication for planetary orbits and space travel with a look at universal laws uncovered by Kepler and Newton.

***Do you want a REPORT or do you want a SOLUTION?*** *~ Winnie O’Leary & Kathy Zapcic, Plato Learning*

Do you have a Chris falling behind in math, or a Pat who is bored and needs to be challenged? Join us to learn how you can provide immediate math content and prescriptions to remediate and enrich your student’s educational experience. PLATO can help you provide personalized learning results in a variety of instructional scenarios … that are showcased. Presenters demonstrate how an Innovative Adaptive Assessment allows you to quickly and efficiently identify knowledge gaps and place students at the appropriate grade level in math … as well as using Benchmark Assessment Data to support your instruction and personalize learning for entire classes.

***Evaluations & Raffle Drawings***

You must be present to win the great raffle prizes offered by our exhibitors and other vendors.

~~~~~~~~~~~~~ ***NHSTE Supports “Going Green” by Posting Digital Resources*** ~~~~~~~~~~~~~

* Our presenters are encouraged to “**Go Green**” and print a minimum number of handouts. Instead we encourage them to post their resources on the TT SIG #1 jan-26-12 wiki.
* The address for the workshop wiki is: **http://nhste-ttsig1-jan-26-12.wikispaces.com**
* If you have never used a wiki, do not fear, it is simple to access and easy to post. We have created this as a public wiki, so anyone with the address can go to the site, post comments, share resources, and access workshop information. You do not need to set up an account to access or post to this page.
* When you go to the wikispace, you will see a copy of this handout pasted on the page. There will be a space following each session description for the presenter to add links or upload files that you can download.
* If you want to add to the wiki, click on the Edit button in the top right-hand corner. Please proofread your comments for grammatical correctness and be professional in your postings. Remember to save when you are through!
* Join us and become part of the interactive web!