

Title of Session: Math and Technology

Moderator: David Weksler

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Room: Math Ed Tech Group

JosephWi: hello. I almost thought I was in the wrong room because I was the only one here.

DavidWe: Are you here for the discussion, Joseph?

JosephWi: yes.

DavidWe: Sorry, we were dawdling in Reception

DavidWe: Do you teach, Joseph?

JosephWi: yes, I teach 6th grade math and reading in Glendale, Arizona.

DavidWe: Great. Thanks for coming

KimberlyM2: Hi. I teach computer lab to 1st through 5th grade.

DavidWe: Welcome, Kimberly

DavidWe: Have either of you, Kimberly, Joseph, been to this discussion before?

FredK: I am a literacy tutor in SE Oklahoma

DavidWe guesses we are doing introductions already

JosephWi: I have once before.

KimberlyM2: no

DavidWe: Thanks, Joseph.

DavidWe: Welcome, again, Kimberly

DavidWe: I'm David Weksler. I've been using Tapped In for close to 9 years (maybe longer)

DavidWe: I have been working with teachers and helping them learn more about educational technology, software, the Internet for the past 14 years

DavidWe: I'm in New Jersey, near New York City

BjB: I teach communications in south central Pennsylvania

DavidWe: Let me also ask you all to think about (or start to type) what you were expecting tonight. Any pressing issues, things related to math and technology you are interested in?

DavidWe has some ideas about what to discuss tonight but would like to customize this to people's interests as much as possible

BjB: I posted an interesting resource to the discussion, David

BjB . o O (<http://www2.ups.edu/community/tofu/home.htm>)

JeffC: I'm on Tapped In Helpdesk, also an adjunct professor for Concordia (teaching ed tech)... in Forest Grove Oregon.

DavidWe: So, it being 6 days before Xmas...

DavidWe looks at the URL Bj has just posted

KimberlyM2: I am wondering if anyone knows of any great ways to use technology to teach math. I have a lot of sites but I am always excited when I find something new

FredK: I am open to resources that will help our literacy council enhance its program. We have some students that still use fingers.

JosephWi: I'm up for anything. I have been looking into using Google SketchUp for geometry, so if anyone has done that I wouldn't mind hearing about it.

DavidWe: Sketch-up is very cool, Joseph

DavidWe: I attended a short demonstration at the NCTM meeting in St. Louis in April but honestly haven't spent much time exploring it since

DavidWe: I should really do that

JosephWi: I haven't used it very much yet. I've had some of my gifted students watch the tutorial videos and play with it. They said it seemed interesting.

FredK: My Sketchup expired before I could explore very much

JosephWi: I want to have my students use SketchUp to draw figures of the buildings at school. That way I hit measurement, geometry, and some of the technology standards.

DavidWe: I'm guessing you can download another version

JosephWi: SketchUp is free... <http://sketchup.google.com>

DavidWe: I thought Google was going to distribute it for free - at least that was my understanding

JosephWi: <http://sketchup.google.com/download.html>

DavidWe: I thought for personal and educational use it is free

DavidWe: http://sketchup.google.com/product_suf.html

DavidWe: You okay, Kimberly?

DavidWe: Do you know about the Geometer's Sketchpad software, Joseph?

DavidWe: . o O (it's not free, but, it's great software)

JosephWi: I've heard of it. But I haven't used Geometers Sketchpad

DavidWe: I can tell you a bit more about it

DavidWe: Does everyone know about the Math Forum - www.mathforum.org - big web site for math education, K-20?

DavidWe: Math Forum - www.mathforum.org - Kimberly, Joseph?

KimberlyM2: No

JosephWi: I've looked at it before, but I know I haven't spent as much time there as I should.

KimberlyM2: I haven't used it before

DavidWe: Beginning in 1992, the Geometry Forum (became the Math Forum) was a National Science Foundation project based at Swarthmore College in suburban Philadelphia - I was part of the group of people who started it

DavidWe: It's a great GENERAL resource for students, teachers, parents, etc.

DavidWe: Has a huge database of materials, active discussions about math teaching, etc.

DavidWe: If you teach math, in my humble opinion, you should know that it exists and hopefully know a few of the resources available there

DavidWe: One of the big projects that is somewhat well known is "Ask Dr. Math"

DavidWe: o O (www.mathforum.org/dr.math)

DavidWe: Questions from real students (typically) answered by "expert math doctors"

JosephWi: I've seen Ask Dr. Math before.

DavidWe: There you go

DavidWe: Anyway, just wanted to provide that as background

DavidWe: The challenge for us 14 years ago was to help teachers learn about math software and Internet tools that might help math teachers

DavidWe: One idea for using the Internet was to encourage communication about math (one of the NCTM standards, in fact)

DavidWe: Students who can explain what they know, tend to feel more confident in their knowledge of math concepts

KimberlyM2: Yes. That is a struggle

DavidWe: nods

KimberlyM2: They struggle explaining how they got an answer. "I just knew it"

DavidWe: So, by answering an online problem of the week and requiring that the submissions be in written form (not SIMPLY a numerical answer) we hoped to address that issue

DavidWe: There are problems of the week (there is a small fee to participate now) at many levels at the Math Forum

DavidWe: Let me post the web page for those...

DavidWe: <http://www.mathforum.org/pow/>

KimberlyM2: be right back

DavidWe: Most of you may know that your transcript of this discussion will contain all the references, web sites and things we are talking about

DavidWe: You'll get an email soon after you logout

DavidWe: Helps with not having to write stuff down

DavidWe: Joseph, what are some other things you are looking for, concerned with, etc?

JosephWi: Yes, that is very helpful. The first time I was in a discussion in here I was using delicious like crazy.. then I got the email

DavidWe smiles

DavidWe: It works a bit better than having to bookmark things

DavidWe: I was spending some time earlier today looking at the relatively new "Curriculum Focal Points" that have recently been published by NCTM

DavidWe: They specifically address K-8

DavidWe: The official title is "Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence

DavidWe: I'm not sure if anyone is interested in this

DavidWe thought he should finally get around to reading some of the text from NCTM

JosephWi: sorry. I just received an email from our district math facilitator about a question I had about permutations and combinations.. she wants to meet with me so that has me worried.. haha.

DavidWe: You can read more about this (should you care to) at:

JosephWi: so I was a little preoccupied.

DavidWe: <http://www.nctm.org/focalpoints/intro.asp>

DavidWe: No problem - probably right priority

DavidWe: What's the question?

DavidWe . o O (anything interesting?)

JosephWi: well we had our district math benchmarks today.. and I didn't think one of the multiple choice questions had a right answer.

DavidWe smiles

DavidWe: Were you correct?

JosephWi: I think it was just poorly worded..

JosephWi: #11 - How many different 3-letter combinations can be made from the letters C,A, and T? The letters do not have to spell a word, and no letter can be repeated.

JosephWi: I think I still am.. I guess I will know after the meeting with the district facilitator

DavidWe: and the possible answers?

JosephWi: A. 3

JosephWi: B. 6

JosephWi: C. 9

JosephWi: D. 12

DavidWe would choose B

JosephWi: 6 is correct for a permutation, but it asks about combinations..

JosephWi: with combinations order does not matter.. so CAT would be the same as CTA, etc.. so the correct answer (in my thinking) would be 1.

DavidWe: Is that true, order doesn't matter?

DavidWe isn't sure he knows the definition of "combination"

JosephWi: in combinations it doesn't. In permutations it does matter.

DavidWe smiles

DavidWe: Thanks

FredK: <http://mathdl.maa.org/mathDL/3/> Math Digital Library

DavidWe: is ACT different than TCA?

JosephWi: here you go.. I'll plug math forum..
<http://mathforum.org/dr.math/faq/faq.comb.perm.html>

DavidWe: Way to go!!

DavidWe smiles

JosephWi: I know that it is.. and most of the students that asked told me they knew they should answer 6, but the way the question was worded.. it should have asked to only pick two letters.. that would get rid of all the confusion.

DavidWe smiles

DavidWe: good point

JosephWi: *I know that ACT is different than TCA

JosephWi:

DavidWe smiles

DavidWe: math and language

DavidWe: Thanks for that example, Joseph

JosephWi: no problem..

DavidWe: Fred, with respect to literacy, are you interested in knowing more about basic math, fundamentals of arithmetic, etc?

DavidWe: Or do you mean something else?

FredK: Fundamentals is for my student level

JosephWi: since I feel like I've taken up all the time so far.. Fred, you might be interested in this presentation.. Numeracy throughout the Curriculum.. (I've watched some of it and it seems good so far) <http://adifference.blogspot.com/2006/12/stop-presses-neracy-across.html>

FredK: I watch them use fingers

JosephWi: I know there is always a push for Literacy throughout the curriculum, not so much for math.

DavidWe: Well, people do speak about numeracy (math literacy)

FredK: Habits are hard to break

DavidWe: Have they just not learned any math?

FredK: They get up to fractions

DavidWe: Joseph, do you know about the National Library of Virtual Manipulatives?

FredK: Even cooking doesn't help

DavidWe: How old are these folks?

DavidWe: . o O (<http://nlvm.usu.edu/en/nav/vlibrary.html>)

FredK: In their 40s

JosephWi: Shodor has a bunch of visual fraction "games" .. those might help
<http://www.shodor.org/interactivate/activities/>

DavidWe: Does anything in particular help?

DavidWe: That's a great site, too, for some online manipulatives

DavidWe: I would think cooking, pizza tends to be the most concrete way to tackle fractions

FredK: I find funbrain sometimes helps

DavidWe: Okay

DavidWe: Reading is also a problem?

FredK: yes

DavidWe: Physical objects they can touch

DavidWe: cut something into portions, divide it evenly, etc.

FredK: <http://www.funbrain.com/>

DavidWe: I must admit I don't have that much experience with trying to teach these concepts to 40 year olds, but I imagine there are people who do have this experience

DavidWe makes a note about looking up stuff about adult learners and math

FredK: I try measuring cups and larger containers too

DavidWe: yes

DavidWe: making OJ from concentrate

SusanR joined the room.

DavidWe . o O ("quartering" a chicken)

DavidWe waves to Susan

SusanR: Hi David and friends

FredK: Hi Susan

DavidWe: Susan, do you have any experience with teaching adults basic math concepts or do you know any resources?

SusanR: Hi Fred

DavidWe . o O (Fred has adult learners struggling with fractions, for example)

SusanR thinks

DavidWe smells wood burning

SusanR: hmm

DavidWe is just kidding

BjB: didn't we have someone as a guest who had a math site like that?

DavidWe can't recall

BjB: it was quite a while ago...but cool
[<http://ti2data.sri.com/transcripts/specialevents/2005/20051108games.pdf>]

DavidWe: But, I will spend some time looking for that, Fred

KimberlyM2: Here's a site for adult learners you may try. They use sports to teach fractions. http://www.tv411.org/teacher_resources/

DavidWe smiles

DavidWe: Oooh, good idea - SPORTS - especially in Oklahoma

DavidWe . o O (football)

FredK: We are in the back woods

DavidWe: Joseph, if I contacted a colleague who has spent some time working with Sketchup, would that interest you if we focused one of these discussions on that topic?

FredK: Lumber country and other stuff

DavidWe . o O (no sports in the back woods?)

DavidWe . o O (2 by 4)

BjB: firewood

FredK: I will look into Sketchup again

DavidWe nods

SusanR: Did you mention the math forum, David?

SusanR: <http://mathforum.org/teachers/adult.ed/>

BjB nods about lumber...and building

DavidWe: Well, it's not really something that addresses your concern, I think, Fred

JosephWi: I would definitely be interested in a sketchup conversation.

DavidWe: Thanks, Susan

FredK: OK is noted for other materials that grow here too

DavidWe . o O (corn?)

DavidWe: Have you come across the Adult Numeracy Network, Fred?

DavidWe: <http://www.literacynet.org/ann/>

DavidWe makes a note about contacting his Sketchup person

DavidWe: I'll try to make that happen in the new year, Joseph

JosephWi: That sounds great.

FredK: Susan, thanks for the 411

SusanR: and TERC

DavidWe . o O (Jon Choate was working with the Google folks at NCTM in St. Louis)

SusanR: <http://www.terc.edu/ourwork/adultnumeracy.html>

FredK: Hadn't seen ANN either

DavidWe: Adults Learning Mathematics?

DavidWe: <http://www.alm-online.org/>

DavidWe: I'm just picking the first topics from the web page that Susan posted earlier

DavidWe: Do a search at the Math Forum, Fred, for this topic

DavidWe: My guess is that you will get a lot of hits

DavidWe: Thanks for your suggestion, Joseph

FredK: thanks, del.icio.us will fill up

DavidWe: I've really been meaning to spend some time exploring Sketchup - just haven't done it

DavidWe: I think I've got a CD that they were handing out in April

DavidWe adds to his TO-DO list

DavidWe: While we are on this, are there other topics that would encourage you (and possibly your colleagues) to login to Tapped In?

DavidWe: Feel free to just throw stuff out

DavidWe: Kimberly?

DavidWe: Any math-related things you are asked about by your colleagues?

KimberlyM2: Hmm

DavidWe: I'm trying to start making a list of topics to schedule for the discussions starting in January

KimberlyM2: We are all doing a program called Equate

DavidWe: I appreciate your help and your suggestions

DavidWe doesn't know "Equate"

FredK: One of my favorites for my granddaughter is <http://www.aaaknow.com/>

DavidWe: curriculum? software-based?

KimberlyM2: It is based on the Investigations program

DavidWe: Do you typically have access to the Internet, Fred, when you are working with your adult learners?

FredK: yes

DavidWe: Investigations the curriculum?

DavidWe nods to Fred

DavidWe: Do you know some of the online resources for Investigations, Kimberly?

KimberlyM2: We struggle getting our students to problem solve independently. They give up too quickly

DavidWe: <http://investigations.terc.edu/>

KimberlyM2: Yes one sec

DavidWe smiles

JosephWi: For sketchup there are some good online video tutorials.
<http://sketchup.google.com/tutorials.html>

DavidWe will take a look at those

DavidWe: I'll contact Jon Choate - he's a high school person, but he's a good teacher and probably knows of resources across K-12

KimberlyM2: We use this book series and software
<http://investigations.scottforesman.com/>

DavidWe: Are your students fairly advanced, Joseph?

DavidWe: Right - they are the publishers

DavidWe: The curriculum was initially developed at TERC (an educational research organization in Cambridge, Massachusetts)

DavidWe: Joseph, are you also interested in your students working on graphing, data manipulation, etc?

FredK: I have one more for special ed; <http://www.resourceroom.net/math/>

DavidWe: Thanks, Fred

KimberlyM2: g2g. Thanks for the resources. I look forward to chatting with you again

DavidWe: Happy Holidays, Kimberly

DavidWe: Thanks for joining us tonight

DavidWe waves

KimberlyM2: You too

DavidWe smiles

DavidWe: So, we have a few minutes remaining - anyone want to add something, open up the girl scout cookies, ladle out the egg nog?

FredK: Wrap up the fruit cake?

DavidWe: Or....

JosephWi: sorry, I'm a bit behind. I have the gifted strand in my classroom, so out of 24 students I have 5 that are gifted. Some of my students are advanced, but I wouldn't say that the majority of them are.

DavidWe laughs

DavidWe: Be careful of that fruit cake

DavidWe: Here's one more web site you might be interested in, Joseph

SusanR: and the egg nog

DavidWe: Just depends on how advanced your students are

DavidWe smiles

DavidWe: Dynamical Systems is a very interesting area of mathematics

DavidWe: Bob Devaney, at Boston University, has some powerful example of things you can do

DavidWe: Here's his web page on the topic:

DavidWe: <http://math.bu.edu/DYSYS/>

JosephWi: I'll definitely take a look at it.. Thanks.

DavidWe: The other thing I was going to mention to you, Joseph, is the program "Inspire Data" that is now distributed by the people who developed Inspiration

BjB: Fred, you might want to check out
http://www.aelweb.vcu.edu/links/adult_learner/links.shtml

BjB . o O (and look at Finances/Consumer)

DavidWe: It's for basic date manipulation, graphing, especially for elementary level students

FredK: thanks Bj

DavidWe: <http://www.inspiration.com/productinfo/inspiredata/index.cfm>

JosephWi: Is it just mac based? I only have PC's in my classroom and our lab.

DavidWe: Fully working demos are downloadable

DavidWe: PCs and Macs

DavidWe: Very cool software

JosephWi: thanks.

DavidWe: You're welcome

DavidWe: If you want to know more about Geometer's Sketchpad, I can tell you a lot, but here's a starting point on the web

DavidWe: <http://www.dynamicgeometry.com/>

DavidWe: You can also download a working copy (won't print or save) of Geometer's Sketchpad (Windows/Mac)

DavidWe: It was also developed at Swarthmore College under another government grant (the one that preceded the Geometry/Math Forum)

DavidWe gives teacher workshops in using Sketchpad

DavidWe: If anyone wants to contact me subsequently, here is my email address:

DavidWe . o O (wex@pobox.com)

DavidWe: Feel free, if you have further questions, Joseph

DavidWe checks the clock on the wall

JosephWi: thank you.

DavidWe: Thanks to all for showing up tonight

FredK: Right now I am in overload

DavidWe: I'm happy to hang out a bit longer if there are other questions

DavidWe nods to Fred

DavidWe: Well, that is about right, I guess, Fred

DavidWe smiles

DavidWe thanks Bj and Susan for helpful collaboration

JosephWi: The email of the transcript really helps to digest it all.

DavidWe hopes Jeff is practicing his lines for his next theatre role

JeffC: yup

DavidWe: Yes, digestion is important

DavidWe smiles

SusanR: Thank you all

FredK: Thanks everyone

DavidWe gives his fingers a little rest

DavidWe: Enjoy the holidays folks. More time to digest