

**Title of Session:** Math and Technology  
**Moderator:** Jeff Cooper and David Weksler  
**Title of File:** 20060620mathedtech  
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Room: MathEdTech Group

**BjB:** Welcome to tonight's Math and Technology discussion.

**BjB:** we usually start the Tapped In discussions with introductions. Please tell everyone where you are located and what brings you to the discussion.

**FredK:** I am a tutor (and other stuff) with the Pushmataha County Literacy in SE Oklahoma

**BjB:** I'm an art teacher in Pennsylvania and a helpdesk volunteer for Tapped In

**SpencerM:** Math teacher in Utah

**PatsyN:** I am a high school math teacher in Washington

**BjB:** Jeff is going to be our guest host until David is able to join us

**BjB** hands the virtual floor over to Jeff

**JeffC:** I'm on Helpdesk here, facilitate the Math Resources group, and am sitting in for David Weksler tonight. I'm in Forest Grove Oregon and have 15 years experience in education, 10 years online.

**JeffC:** What grade math do you teach Spencer?

**SpencerM:** 8th and 9th

**JeffC:** ok... so... algebra, geometry, as well as those a bit behind I guess?

**SpencerM:** no geometry

**JeffC:** ok

**JeffC:** I'd like to start by sharing a few links that I have for math resources.

**JeffC:** If you go to <http://www.mybookmarks.com/public/coops>

**JeffC:** Then open the Mr.C's Bookmarks and then the Math folder, you'll see a few dozen links.

**JeffC:** I'm not going to go over them now, and I need to update a few (that are out of date), I just wanted to make you aware of those.

**DavidWe** joined the room.

**DavidWe** is sort of here

**DavidWe** waves

**JeffC:** The technology that I generally use when it comes to \*anything\* is the Net. I know there are a number of ways to go in terms of purchasing hardware (calculators, etc.), but believe that the most pragmatic way is for educators to use the Net resources that are available, and are free.

**JeffC:** You want to go David?

**JeffC:** Share anything you want and then I'll take over if you have to leave?

**JeffC:** David is our true math expert... but he's on and off the computer tonight...

**JeffC:** So I'll just continue till he chimes in.

**JeffC:** One resource I want to share regards calculators... which are really an issue for math teachers.

**JeffC:** Indeed, there are several discussion threads here at Tapped In regarding the use of calculators in classrooms.

**JeffC:** I'm not going to take a position one way or another, but I do want to tell a story about when I started teaching, and was subbing in Piedmont CA.

**JeffC:** Piedmont is a very wealthy district, with the "best and the brightest." I was subbing for a math teacher and there was a quiz, where students could use calculators.

**JeffC:** One of the student's calculators broke, and he asked what 48 divided by 16 was.

**JeffC:** I asked him "You don't know?"

**JeffC:** He said "no"

**JeffC:** I asked the class... "who knows the answer?"

**JeffC:** They all went to their calculators.

**JeffC:** I said "No... not with a calculator... in your head."

**JeffC:** These were \*10th graders\*.

**JeffC:** None of them could just spurt out the answer.

**JeffC:** I was pretty amazed.

**BjB** doesn't think things have changed much

**PatsyN:** I am teaching 3rd grade math to 9-12 grades this summer

**JeffC:** But it seems that the skills that educators in my generation take for granted when I was a student (uh... a \*long\* time ago... before electricity)... no longer apply to modern pedagogy.

**JeffC** nods to Patsy

**JeffC:** So you have students who the system has completely left behind.

**JeffC:** I take it they don't even know how to use calculators?

**JeffC:** BTW... here is my calculator site of the day for you:  
<http://mathforum.org/mathed/calculator.search.html>

**JeffC:** If you are going to use calculators, there is a site with a number of links on how to teach their use.

**JeffC:** There are also a number of online calculators available.

**JeffC:** To me... math wasn't just doing the calculations, it was about learning how to solve problems... to think... to process information and to find a process to find a solution.

**JeffC:** I think now that a lot of that process involves knowing which button(s) to push and in what order.

**JeffC:** Again, I'm not going to debate calculators here... but if anyone wishes to engage in that debate, the Math Resources K-20+ group room has a Discussion thread going on it.

**JeffC:** Let me turn now to something a little more cheery and positive.

**JeffC:** Interactive math sites.

**JeffC:** Sites where students can go and practice, learn, and use a variety of online tools.

**JeffC:** One such site is "Interactive Algebra" at  
<http://www.veazeys.com/math/lessons.htm>

**JeffC:** If you hold the Ctrl button down and click the link, you'll go to that site in a separate window.

**JeffC:** I think that a lot of students really burn out (on school in general) and math in particular.

**JeffC:** There are ways though to re-spark an interest, and I think that interactive math sites may be that tool for some students.

**JeffC:** Indeed, my kindergartener learned how to add decimals through <http://www.starfall.com> and <http://www.pbskids.org>

**JeffC:** Now... he wasn't getting it in class... indeed... adding decimals isn't even a standard until \*4th grade\* in my district, which is somewhat appalling.

**JeffC:** Here is a second site on interactive algebra:  
<http://www.mathsnet.net/algebra/index.html>

**JeffC:** a third: [http://nlvm.usu.edu/en/nav/category\\_g\\_4\\_t\\_2.html](http://nlvm.usu.edu/en/nav/category_g_4_t_2.html)

**JeffC:** a fourth: <http://www.cut-the-knot.org/algebra.shtml>

**JeffC:** the last two focus more on puzzles and games... but all of them give students a chance to learn online.

**AngelaL:** Thanks, this is very interesting

**JeffC:** although the first one really emphasizes students work things out on paper and pencil.

**JeffC:** games are the most fun for kids, and with a little searching, you can probably find one that will be at your students' levels.

**DavidWe . o O ( Good one, Jeff (cut-the-knot)...neat guy )**

**JeffC:** try this one for fun: <http://www.cut-the-knot.org/water.shtml>

**JeffC:** anyone get it yet?

**JeffC:** it's something like that where the kids can experiment, have fun, and finally come up with the answer regardless of grade level.

**JeffC:** uh oh... I think everyone is stumped.

**JeffC:** or bored to death... anyone awake out there?

**SpencerM:** I don't know how, but I finally got it

**JeffC:** lol... quite a few steps Spencer?

**SpencerM:** yeah, like 70

**FredK** just swallowed 3 oz

**JeffC:** lol

**JeffC:** ok

**JeffC:** well... there are a lot of games there.

**JeffC:** here's another site I like with games... it's called "Setgame"

**JeffC:** [http://setgame.com/set/puzzle\\_frame.htm](http://setgame.com/set/puzzle_frame.htm)

**JeffC:** you need to find 6 sets of 3...

**AngelaL:** Do you have any suggestions for students entered 4th grade along the lines of Web-sites

**JeffC:** all the factors have to be the same, or all different... color, number, fill, shape.

**JeffC:** Here are 15 K-6 sites Angela:

<http://trackstar.4teachers.org/trackstar/ts/viewTrackMembersFrames.do?number=172786&password=>

**JeffC:** That trackstar track was put together by our own Sue Roseman... there are 15 sites that you may view on that page for K-6 Math, Angela.

**AngelaL:** Thanks, this will be a tremendous help, someone mentioned earlier, while I was observing, the use of calculators, what is your take on that?

**JeffC:** Is there anyone here who thinks that kids will work longer on solving a puzzle or game than trying to figure out an abstract math problem?

**JeffC:** I don't really have a take Angela... they're here, kids use them... I'm not an expert. You may view and partake in a threaded Discussion on that topic in the "Math Resources K-20+" group room.

**AngelaL:** I think I will do that, thanks for your advice, are any chats going on now on that topic

**JeffC:** OK... addressing my own question... I think that 100% of the students 100% of the time would spend longer trying to figure out a puzzle or a game than figuring out a math problem in the abstract.

**JeffC:** The chat today is on whatever you'd like it to be Angela. I'm just throwing out some resources, suggestions, ideas. If you'd like to debate calculators in the classroom, feel free to post your opinions here.

**AngelaL:** I think I will try Math Resources and I check back with you!!!

**AngelaL** left the room.

**JeffC:** You can see I'm somewhat prejudiced in favor of games. I think that kids are definitely hooked on them, and that educators arbitrarily place a negative connotation on game theory in classes... as if playing doesn't have any place in a kid's education.

**DavidWe** pays attention if that's helpful

**FredK:** <http://www.braingle.com> has puzzles, games, etc.

**JeffC:** I'd argue that the opposite is true. That by focusing exclusively on abstract "pen and paper" problem solving, that you lose students a lot quicker and they fall behind much faster than if you used games to bring your point(s) across.

**JeffC:** Thanks Fred.

**JeffC:** Especially for 9-12th graders who do math at 3rd grade levels.

**JeffC:** If you don't do something to actively engage them, make learning fun, you've lost them a long time ago.

**JeffC:** I would recommend using starfall, pbskids, and a number of other sites... this assumes that your students can get online in summer school.

**PatsyN:** My kids like math magician on homeschoolmath.net. It is a game to learn times tables

**JeffC:** try and get the computer lab reserved at least a couple times a week in your school.

**JeffC:** that sounds great Patsy.

**JeffC:** btw people, if you mention a URL here, please include the entire address (<http://www.etc>) that way, it will be hyperlinked in the chat, as well as the email transcript you will receive.

**JeffC:** questions/comments/ideas from people at this point?

**PatsyN:** no, this has been great but I got to run.

**FredK:** . o O ( lots to digest so quickly )

**JeffC:** well... I was hoping people weren't trying to digest this all at once.

**JeffC** gives Fred a virtual Tums for his virtual heartburn.

**DavidWe** smiles

**DavidWe:** A good walk after all this stuff helps, too

**FredK:** My favorites becomes bloated. Thanks for the tums.

**JeffC:** There is just so much out there that is great... indeed, if I had a math class, I'd spend at least a lesson or two just having kids bookmark and look at the variety of math sites out there.

**JeffC:** and ways to start using them.

**DavidWe:** Lets them know where the "back of the book" is

**JeffC:** This is one of the reasons I'm appalled at districts that spend tens of thousands on \*one math program\* for all their students.

**DavidWe** agrees

**JeffC:** The waste of money is atrocious, especially when one knows intuitively that one program will not reach all students, and that a lot of needs will go unmet.

**FredK:** I have a practical problem. How do you cut a 2x4 on the diagonal to get two equal pieces?

**FredK:** I tried the trig tables at <http://www.math.com>

**JeffC:** with a table saw and a jig?

**DavidWe:** a piece of paper that's 2 x 4 and a pair of scissors?

**FredK:** I just want to tilt the blade.

**DavidWe:** Oh, a 2 by 4, piece of lumber

**DavidWe:** I think you need to clamp the 2 x 4 first

**JeffC:** well... you could tilt the blade to a 45 degree angle I suppose, it will give you two identical pieces, but not necessarily the kind you want.

**DavidWe:** We could send an email to "This Old House" and ask Norm to figure it out for us

**FredK:** that 45degrees works for a 2x2

**DavidWe:** <http://www.thisoldhouse.com/toh/tvprograms/asktoh>

**FredK:** . o O ( opposite/adjacent=tangent )

**JeffC:** did any of you try the game at [http://setgame.com/set/puzzle\\_frame.htm](http://setgame.com/set/puzzle_frame.htm) ?

**FredK:** I am looking at it

**SpencerM:** I gave up

**FredK:** Instructions are limited

**JeffC:** oh... need more instructions to setgame?

**FredK:** found some

**JeffC:** ok... what I do is give some answers to setgame if people have trouble.

**JeffC:** I number each one from 1 to 12 and then tell the sets.

**JeffC:** you can indeed make this somewhat collaborative.

**JeffC:** 5-9-10 for example is a set

**JeffC:** 4-9-12 and 2-5-6

**JeffC:** you could have kids work in teams to find all 6.

**JeffC:** One last site I want to leave you with: <http://www.thinkfree.com>

**JeffC:** It's a free site with scaled down MS Office tools.

**JeffC:** You could have students work collaboratively on Excel documents.

**JeffC:** And... again guessing here... that Excel is sometimes part of your curriculum, there are a number of Excel tutorials available.



**JeffC:** But (if you have \$60) you might want to register with <http://www.schoolkit.com> which has a number of interactive and constructivist lessons that are integrated with MS Office.

**JeffC:** In other words... there are great math lessons integrated with Excel... and all the kids need to do is follow some instructions and learn how to do both.

**FredK:** Is the price a site license?

**JeffC:** no

**JeffC:** I think a district license is \$1800.

**JeffC:** they also have professional development modules.

**DavidWe:** I'll be at a conference with a rather substantial workshop on using Excel and Powerpoint

**DavidWe** looks for the URL

**FredK:** One computer can have any number of people use it singly

**JeffC:** yes

**BjB** looks at the clock on the wall.

**BjB:** The next Math and Technology discussion is July 18

**DavidWe** promises to be there

**FredK** marks it in his calendar

**JeffC:** ok all... thanks for coming.

**FredK:** I will have fun going over the links again

**DavidWe:** Thanks, Jeff, for leading the discussion

**FredK:** thanks