

## Re: question for math teachers

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**From:** k wallace (wallace.k\_at\_engr.orst.edNOSPAMu)

**Date:** 11/23/04

Date: Tue, 23 Nov 2004 12:30:14 -0800

Herman Rubin wrote:

> In article <-9Cdneped6eP8j7cRVn-oQ@comcast.com>,

> k wallace <wallace.k@engr.orst.edNOSPAMu> wrote:

>

>>Herman Rubin wrote:

>>

>>>In article <20041122033559.06111.00000577@mb-m23.news.cs.com>,

>>>Chergarj <chergarj@cs.comhaho> wrote:

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>>>>rphentry@home.com comments on the sequence of jr.hi and hischool math courses:

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>>>>>The way geometry is taught, you need to know some algebra.

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>

>>>This is a bad idea. Euclid's students knew no algebra; it

>>>had not yet been invented.

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>

>>I have to disagree- I worked with my daughter (and several of her  
>>friends) through last year's geometry class. Other than a few "solve for  
>>x" problems involving the Pythagorean Theorem (light pole this tall,  
>>shadow this long, how tall is the man casting the shadow sort of stuff)  
>>there was no "algebra". There were, however, a lot of theorems, but  
>>really understanding \*why\* was not (to my mind) adequately taught.  
>>That's what I spent a lot of time with these girls on. As a result, I  
>>believe, they all scored directly at the top of the class. (as a result  
>>of course of their understanding, not just my tutoring and help).

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> I see no disagreement that algebra is needed to understand  
> geometry. Euclid's students would have been able to do  
> those problems.

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> The key part of algebra is the use of variables; this belongs

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> *early, as "mathematical language", not as a mechanical means*  
> *to solving problems.*

you are right, I posted in the wrong spot. I was disagreeing with the post portion right above yours, that states "the way geometry is taught, you need to know some algebra".

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>>>>*The way algebra 2 is taught, you need to know some geometry.*  
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>  
>>>>*Etc.*  
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>  
>>*while currently this is true, there is no reason I can think of that it*  
>>*needs to be.*  
>>*As for the forgetting of things over the intervening year– I disagree*  
>>*that it doesn't mean that they never understood it in the first place.*  
>  
>  
> *Details may be forgotten, but concepts not. However, the*  
> *current emphasis on "objective" testing makes it difficult,*  
> *and in some cases impossible, to evaluate the learning of*  
> *concepts. However, details can be looked up, but not*  
> *concepts.*  
>

yes, you are right.

I

>  
>>*am talking about kids who, unlike me and several other nerds of*  
>>*then–high–school–age, do not spend their summers and/or free time on*  
>>*science and math; they spend it on basketball and socializing and camp.*  
>  
>  
> *So what?*

The point is, I guess, that the lack of intense interest doesn't keep the details fresh. YOU are correct, though, in your assessment of the fact that details are not concepts...unfortunately, details are often taught to the exclusion, it seems, of a good basis in concepts. I think that is what most of my complaint is regarding math curriculum; however, I still think it makes more sense to teach alg.1 then alg. 2, then geometry and then trig.

>  
>>*The fact that my daughter forgot how to exactly use exponent rules, how*  
>>*to simplify algebraic fractions, etc– as soon as she did a few examples,*  
>>*she recalled the way things work, yes. But I can bet that next year,*

>>when she starts trig, she'll have forgotten the sine-cosine relations,  
>>the rules for angles, etc- because she's not using them this year at all.  
>  
>  
> So what? The details are easy to relearn, if the concepts  
> are there. You are making my point for me.

yes, ok. Perhaps I have fallen victim in some way to the misapprehension that knowing lots of details means understanding concepts. I'll have to examine that one. Odd, I do enough tutoring of 1-200 level math (at our local CC, my "other" job ) that I should keep that nugget of knowledge much more firmly in the forefront. I run into both types quite often- the ones who have memorized details, but can't see the forest for the trees, and the ones who say "I can \*SEE\* exactly what needs to happen,I just don't know what rules to use to GET it there."

-kwallace

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>>For example- I do a lot of math in my school and work life. However,  
>>yesterday I had to derive an expression for a general form of  
>>deformation of columns and beams, and in integrating ended up with a ODE  
>> , second order, nonhomogeneous. I had to think for \*quite a while\* to  
>>recall the part about setting my particular equation equal to  $Ax + B$ ,  
>>before solving it became simple again. Not because I didn't understand  
>>Diff Eq's the years ago when I took that class-but because I hadn't  
>>\*used\* that skill in a while. I think that happens to most people.  
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>  
> Again, so what? You could also have gone to Mathematica or  
> Maple or Matlab or Maxima, and not knowing the trick to solving  
> that particular equation is not of great importance. Knowing  
> how to use the concepts to derive the equations is important,  
> but knowing the tricks of solving is not, even for most mathematicians.