Portland Community College

[mathsac-group] Math 20 and times tables

13 messages

Main-Teacher Wed, May 17, 2017 at 7:44 PM
To: mathsac-group@pcc.edu

I know this debate has been on here before... not trying to stir the hornet nest, but I haven't taught Math 20 in a long time and the times tables issue is really intense in this class... curious how you handle it in your class. Looking for any ideas on how you encourage students with respect to times tables and what you allow.

Teacher-2 Wed, May 17, 2017 at 9:10 PM

I am so glad you asked !!!!!!!!!!!!!

I have taught or tutored math since 1972 and I have found out over and over that learning the time tables is so critical. Once a student learns the time tables it really solidifies the mathematical part of the brain and of course it helps them multiply well. If one does not know how to multiply, you can kiss factoring, fractions and many other topics good bye.

I am including a document of personal letters to me where students have been so thankful of multiplication and I am sending a document of comments from PCC teachers and you can see their comments on multiplication and other skills. Many of the teachers have comments about multiplication tables. These comments are result of asking teachers what skills are students missing.

In terms of motivation, I give them some quizzes and up on the projector I load a stop watch. The students are very self motivated to beat their previous times. Here is a link to a stop watch and here is a link to a multiplication generator. If you need more motivation, give them extra credit. Students will do just about anything for extra credit. I also hand out flash cards. You can get them at the dollar store. Give them multiplication and division cards.

Stop watch link
Generator Link:

I would love to talk with you more in detail if needed. This is probably my number one item. Over and over I have seen students come to me for basic algebra help and I ask them, "How are your basic arithmetic skills?" They usually reply, "Fine." I then ask them, "What is seven times eight?" There response is, "Ugh."

Main-Teacher to Teacher-2 Wed, May 17, 2017 at 9:17 PM

Thanks,

I'm so torn about this because they come in not knowing and I feel the same way as you. Today in Math 65 they are trying to simplify a radical and they have no idea that the square root of 18 has the perfect square of 9 as a factor. I'm must like how can you not see that. I can't help but see 18 as 2x9, it's screaming at me.... it's just impossible to do anything with fractions without them. Well tonight I gave Midterm #2 and a girl in class was so upset since she said I wasn't clear they couldn't use it and I guess I wasn't since I'd been letting them use it up until now. So I'm just trying to take a stronger

stance about it from the get go. I haven't taught Math 20 in over 5 years so I forgot about this very real struggle and exactly how I felt about it.

Thanks again! I'll take a look at all your stuff!

Teacher-3 Thu, May 18, 2017 at 10:11 AM

I haven't taught MTH 20 in many years, but in my experience, not requiring students to know basic arithmetic is only doing them a serious disservice! As they move forward in their math classes, they need to be able to focus their energy on learning new material. This is made exponentially more difficult if they're getting bogged down with basic skills. Multiplication tables - like addition and subtraction - should be second nature.

Teacher-4 Thu, May 18, 2017 at 10:23 AM

Teacher-3, I cannot agree with you more. And this is what I do for my students. First week of school I have them work on 9x? since 9x is the most difficult for them. And second week they work on 8x? I suggest to them while they take a shower or go to bathroom to recite what they are supposed to do each week. A girl in my class a few terms ago did not know most of the math facts for multiplication but she did what I told them to do each week, by the end of the term she could do as fast as I could. So I know it is possible for them if they would do it. It really only takes 2-3 months to be very proficient if they do it every day and I told them so.

Without this basic skills it is hard to be successful for all future math courses.

Teacher-5 Thu, May 18, 2017 at 11:11 AM

My suggestion was to practice multiplication during commercial breaks while watching TV. I have not taught math 20 in quite some time, so I have to think about a relevant alternative in the age of streaming :)

I also did a weekly 1-minute worksheet with multiplication facts and had students graph their progress (another useful skill). It was the best used 1 minute and I did not have to convince them why practice was so important.

Teacher-6 Thu, May 18, 2017 at 12:37 PM

I agree with everyone that learning multiplication tables is important.

Since students usually seem to have their phones with them, an app like "quizlet" is a nice tool to use. You can either create flashcards or do a quick search to use an already created batch of flashcards on whatever topic you'd like. So, for example, to practice multiplication by 9's, you could use: https://quizlet.com/188985006/flashcards. This app is free and I know alot of students who use it and like it alot for reviewing facts quickly.

Teacher-7 Thu, May 18, 2017 at 12:59 PM

I include a warning in the email I send out a week or two before the course begins, asking them to start working on their times tables before the course starts. I compare it to trying to learn Russian without knowing the Cyrillic alphabet; you won't make good progress if you're constantly stumbling over the basics, as **Teacher-3** said above.

I have them fill out a 10x10 times table on the first day to identify who doesn't know the facts. For a few, it's just the "Bermuda triangle" around 6x9, 7x8, 8x8, 8x9, etc., and they can see that they have just a few to learn. (You can also identify people who don't recognize that their answers for 6x9 and 9x6 should match.) The drawback of a times table is that some people will fill in each row by counting up / adding on -- 7 + 7 = 14, then 14 + 7 = 21, then 21 + 7 = 28 -- instead of knowing the multiplication facts. Mixed practice with a time limit of say, 3 seconds per problem, could solve that issue.

I am inconsistent with following up, however, so I need to take some of the advice in this conversation. :)

Teacher-8 Thu, May 18, 2017 at 2:13 PM

I am in agreement with others who has responded.

In my MTH 20 classes, I have what I call an "attendance check" just after the break in each class. (I sometimes give a second one at the end of class as well.) These checks helps me with two things, 1) getting students back from break on time (they can't take them late) and 2) reviewing basic calculation skills. Each "check" has 10 problems that students have to do without a calculator in one minute. On the first day, the 10 problems are addition and subtraction of fairly small numbers. After that I spend several weeks where the 10 problems involve either multiplication and division of whole numbers. Eventually I thrown negatives into the multiplication/division problems and circle back by the end of the term to addition/subtraction, but with integers. I've attached an example.

P.S. I also do attendance checks in my MTH 60 and 65 classes, but change the 10 questions to one step problems from the previous class that will help them with something coming up in the current class. I give them more like 2 minutes to take the check in these classes. This term in MTH 65 during the first four weeks, the 10 problems were one step linear equations like (6x=-42) to help them practice their division skills in preparation for factoring. Currently (week 7) the 10 problems have turned into creating a table of 5 points for a simple linear equation like y = (1/3)x or y = x+2 and then plotting the points (I give them the five x values in a table and have them fill in the corresponding y-values and give them a grid for plotting the points). This gives them a daily reminder of how to calculate point values and graph points in preparation for graphing parabolas near the end of the term.

Main-Teacher Thu, May 18, 2017 at 2:20 PM

I love all of these ideas. Live and learn!! I really forgot what a huge issue it was, but it's so true about how it affects them in later classes. Like in math 65 when you ask them to simplify the square root of 18 and they can't cause they really just don't see 9x2 or recognize 9 as a perfect square. I give them times tables to help them practice, but not on tests/quizzes. Factoring is rough too without mental math. For me that's always been the fun of it. Love the Attendance check idea! So you pass it out and change it often just at breaks and at the end?

Teacher-9 Thu, May 18, 2017 at 2:23 PM

This is a bit orthogonal to the question, but I keep thinking that if I teach 20 sometime, I will add this to the list of required materials:
http://qamacalculator.com/store.html
and build the course around it (judiciously, respecting the CCOG of course).

It's a calculator where you have to make a guess before it tells you a result. With single-digit multiplication, you have to guess exactly the right result and then it tells you you are right.

In other situations (like 2.93 * 11.18) you can guess something like 33 (3 * 11) and then it will reveal the result is 32.7574. Good for training people to develop their number sense (maybe).

(And actually I don't think the physical device should be necessary. There should be a free/inexpensive app for this.)

Main-Teacher Thu, May 18, 2017 at 2:26 PM

Nice! I love that**.** **[Referring to Teacher-9]**

Oh and **Teacher-7**... you can't read English without first knowing the ABCs, too. Perhaps the times tables are the ABCs of math?

Teacher-10 Thu, May 18, 2017 at 10:00 PM

Yes, I agree with you all. I am using the trick called finger math.
It is an amazing tool to multiply the numbers from 6 to 10.
Please read the attached handout.