# Letters to and from Janet Schunk

These are my letters to and from Janet Schunk.

Dear Ms. Schunk,

I am a student at Amador Valley HS and I am working on a research project concerning PCR. I was reffered to you by C. deBoer because I have a question about units. I need to do my calculations using mM, which I understand to be millimoles. I also have the understanding that 1mM/mL is equal to 1mM/mL. I would like to know if I am correct because all of my sources of documentation use mM. I would appreciate it if you would please write back. Thank you very much for your time.

Sincerely,

Vanessa Smith

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Hi Vanessa,

Thanks for contacting me. I am a little confused on your fourth

sentence. I am wondering, if you meant 1 mM/mL is equal to 0.001 M/mL?

I always found setting up equations, starting with what I knew and

kept working my way by using conversion factors until I got to the

units I wanted. I am a very logical type person and have to write

these things out. Doing it in my head, I usually lose a decimal place

some where along the way. Let me show you an example of what I mean.

If we know we have 5 M of component A in 0.5 L, let's convert this

into a concentration using mM/mL

5 M/0.5 L x 1000 mM/M x 1 L/1000 mL = 5000 mM/500 mL = 10 mM/mL

or

5M x 1000 mM/M x 1 L/1000 mL x 1/0.5 L = 5000 mM/500 mL = 10 mM/mL

what we know x conversion factor for M to mM x conversion factor

for L to mL = result in mM/mL

Handy conversion fators:

-- 1 M = 1000 mM

-- 1 mM = 0.001 M

-- 1 mM = 1000 micromoles ( 1 micromole, uM = 1 x 10e-6 M)

I hope this helps. If I misunderstood your question, please send me

another message.

Good Luck!

Ms. Schunk

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Dear Ms. Schunk,

Thank you very much for your help. I understand the units now, which will help me a lot when I figure out the amounts of chemicals I need to do my PCR work. I really appreciate your response. Thanks again for your time.

Sincerely,

Vanessa Smith

[Cleland](http://docs.google.com/CLND.HTM)

[Thelen](http://docs.google.com/THELN.HTM)

[Ashworth](http://docs.google.com/ASHW1.HTM)

[Cwalina](http://docs.google.com/DBBY.HTM)

[Home](http://docs.google.com/HOME.HTM)

[Genetics Project Introduction](http://docs.google.com/GEN411.HTM)

[Ethics in Genetics Introduction](http://docs.google.com/ETHC411.HTM)

[Hypothesis](http://docs.google.com/HYPO.HTM)

[Correspondence](http://docs.google.com/COR1.HTM)

[Survey](http://docs.google.com/SRVY.HTM)

[Data and Analysis](http://docs.google.com/PP218.HTM)

[Conclusions](http://docs.google.com/CONC.HTM)

[Links](http://docs.google.com/LINKS.HTM)