

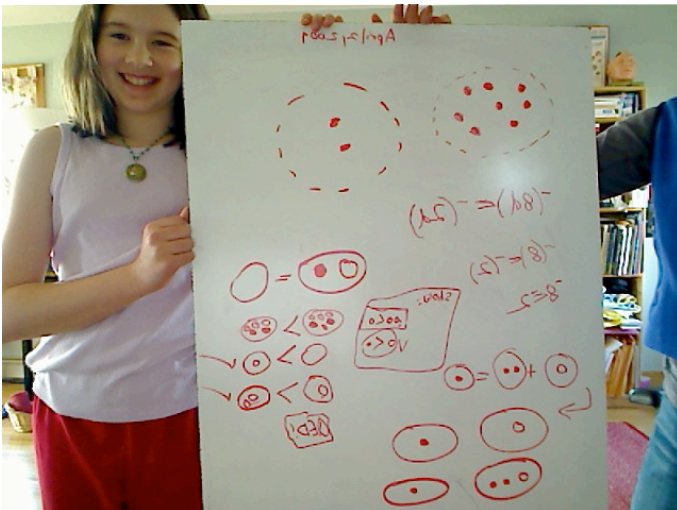
## **Adventures in Learning: Why I Love CIMM Math** by Sophia Parker (11 years-old)

When I was 9 years-old, I started feeling progressively more frustrated with math and having a progressively harder time understanding it. Some lessons I really enjoyed. And others were alright. But some felt like I would never be able to understand them.

Then my mom started looking for a better way for me to learn math. After lots of searching and interviewing, we found an awesome and revolutionary math program and a tutor who I love. My tutor is a physicist, Dr. Chris Horton. The program is called CIMM (Cognitive Instruction in Mathematical Modeling). CIMM's creator is a brilliant mathematician, Dr. Rob MacDuff, and I'll tell you what I love about it.

First of all, CIMM is so much fun and it makes sense in every way. In my other math programs, there were millions of rules that I had little idea of why they were in place, all of which I had to automatically follow without knowing why, or why those rules applied to what I was doing. I assumed that math was just like that. It's not that I hated math, it's just that I didn't understand it in a deep way and I was frustrated with it.

But CIMM always makes sense, and where there are rules,



*My proof that zero is less than one*

there's always a way to trace back to something we've already done that makes it easy to understand what we are doing right now, and why. Every step of the program is laid out very clearly and carefully, so that prepares me really well for

whatever the next step is, and I'm always ready. And Chris Horton, my tutor, always finds just the right example and/or story and/or activities to make it come alive for me. I never knew math could be this fun!

I always learn amazing new things in every lesson. There's always a great next step we're taking. And I always come out of it feeling happy.

I find that I enjoy thinking about things in mathematical ways now. Whereas before CIMM, I would skip over the mathematical calculations that could be a part of a conversation or a book or an experience. Now it's interesting and enjoyable to me to think mathematically and I look for ways to turn a situation into the math problems that apply to it.

For instance, our car clock is 22 minutes fast, so if it says 2:46 that means that real time is 2:24. Another example is converting miles into meters when we're traveling somewhere. And figuring out by the speed that we're going and the distance we're traveling, how long it will take us to get there. And then figuring out how many seconds that would be. And what time our clock will say then! Or, figuring out at the gas station how much our gas bill will be by estimating how much gas we're getting and what it costs per gallon, and then, because it's fun, translating that amount into cents, or into mills (a 10th of a cent, or a thousandth of a dollar). Before CIMM, I would not have wanted to think that way.

We also invited my best friend, Savannah, to do some CIMM with us. She goes to public school, and she has a very hard time with the math there. She gets so bored in her math classes that she stops paying attention, and then she gets bad grades. Even though she's a really smart person, she was failing in math.

Savannah loves CIMM! She couldn't believe math could be this enjoyable, and she says it is waking up her brain.

Even after her first two or three lessons with us and Chris, and some homework my mom would do with us, Savannah started getting much better grades in math. She had been getting 27's and 35's on her math tests, and said that 60's and 70's were really high for her. But then, after we started doing CIMM together, she started getting 87's and 98's.



*Savannah and me showing our work*

Savannah talked to a counselor at school when she was getting such low grades, and the counselor asked her what she wanted to be when she grew up. Savannah said she wants to be



couple of artists, a psychotherapist (my grandmother), and a retired UMass Professor of Education. Some of them brought their children; the oldest child was 14 years-old, and a few others were around my age, and the youngest was 7.



*My grandmother, Savannah and me showing our work*

We were presenting them the introductory lesson of CIMM. Chris helped me learn how to be his assistant teacher. I enjoyed helping people understand things that they didn't understand at first. They all seemed to have those Ah Ha's that are such a great part of CIMM, and they all really liked it.

I noticed that in helping to teach CIMM, both to Savannah and to the Massachusetts group, I came to understand some things differently. I grasped some things more deeply in the

process of helping to teach it to somebody else than I had when I was just learning it for myself. And in the second time visiting a lesson, I could relate to it in new ways because I had learned the later lessons, and those prepared me to go back and understand the earlier lessons from new perspectives. So just like learning the earlier lessons always prepares me for the new lessons, I found that it worked the other way, too. Everything in CIMM works together really well like that.

I also noticed how different people learn differently. Some concepts that had be had been tricky for me were really easy for other people, and vice versa. But nobody gets left behind in CIMM. It seems like everybody is supported in their own way of learning.



*Me and my tutor, Chris Horton, doing a CIMM session on iChat*

When it was time to stop doing CIMM for the summer, I was sad to stop. I'm having a great summer. And I'll be really happy to start CIMM with Chris again in the fall. I think everybody who had the chance to do this math would love it.



*Merry girls doing CIMM!*