

# Philosophy of Teaching Statement

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Mathematics is everywhere and a poor mathematical background not only limits career choices, but also leads to poor medical, financial, and civic decisions. Beyond procedural and factual knowledge, mathematics teaches students to solve problems efficiently, to think logically and critically, to question the validity of a claim, and to analyze and develop arguments. Consequently, a good mathematical background is needed not only for a career in science and engineering, but simply to live a fulfilling and productive life. My role as a mathematics teacher is to help the students develop problem solving skills that will enable them to make sense of the world around them.

Computers are ubiquitous in our society. At a minimum, students must be astute digital citizens and be able to protect their information and digital identities. Digital literacy is increasingly becoming necessary to be successful on the job market for careers in nursing, car repair, and HVAC technicians. For college-bound students, most majors now require some computing classes.

As a teacher, I want to reach every learner of mathematics and computing, help them develop a growth mindset, and see themselves as mathematicians and computer scientists. I will meet every student at their current level and help them to progress to the best of their abilities, regardless of their performance in past classes. Not every student will become a scientist or a professional mathematician, but every student can have a solid foundation that prepares them not only for the next math or computing class, but also for a wide range of career paths. I believe that the main purpose of a mathematics teacher is to guide students in discovering mathematical truths and concepts and to help students become independent learners. Students must be able to read, write, and speak mathematics. As a teacher, I will model reading of mathematics texts, writing of solutions explaining the reasoning and the justifications needed to understand, and use advanced, but accessible, mathematical language in my communications. As a computer science teacher, I will strive to guide my students in the development of computational and algorithmic thinking skills.

My background and experience put me in a unique position to teach high school mathematics and computer science. I earned a Master of Science in Mathematics and a Master of Computer Science degree from the University of Virginia. I am capable and willing to teach Mathematics and Computer classes from freshman level to AP and dual enrollment. I have extensive programming experience from industry and research, and I bring a practical perspective to teaching computer science.

I enjoy explaining deep concepts to all ages, from toddlers to graduate students. I organized a Math Circle for my daughter and her friends, starting as a three-year-old. For four years, we explored properties of numbers, number bases, geometry, and logical puzzles. I coached a First Lego League Jr (ages 6-10) teaching the students how to program Lego robots. I developed lessons to teach second graders how natural numbers are constructed mathematically. In my placement at Monticello High School, I participated in teaching Math Analysis, Advanced Algebra II, Geometry and Computer Science.