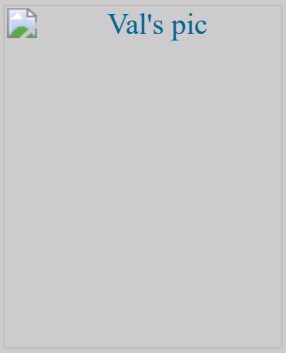

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Learning mathematics is not about memorizing formulas or identities. True learning involves understanding mathematical concepts. A student who understands why something is true can easily derive a formula or identity if needed. I believe students learn math best when they observe the material in many different ways—by hearing, seeing, attempting, discussing, and explaining.

Just as a puzzle is prettier when put together instead of in pieces, mathematics is understood best when you can see how different ideas all fit together. A main objective in mathematics is to understand the relationships between various concepts. When I teach, I tell my class how a new topic relates to other things we have discussed. This makes the new topic seem less difficult and also compels students to think more about the previous material. Sometimes, I will ask my class how something new is related to mathematics that they already know. This forces my students to think critically and to look at the bigger picture.

I also believe students benefit by talking to one another about their math problems. Mathematicians collaborate all the time and are much more productive when they bounce ideas off one another. To get students to discuss mathematics, I like to assign group work in class and then have each group present their solutions to the class. During my office hours, I have students share their ideas with one another. Often, I find that a student can illustrate a concept differently than I would, and I enjoy seeing different ways of doing the same problem. Having to explain mathematics to someone else causes one to really learn the material and understand it well.

As a teacher, I use my enthusiasm for my discipline during lectures. My favorite course that I have taught was geometry for pre-service elementary school teachers. I use polyhedra, angles, volume, and visualization in my research daily, and I just love discussing these concepts with my students. I use Geometer's Sketchpad for in-class demonstrations, and I also take my students to a computer lab to have them experiment with Geometer's Sketchpad. They can actually see angles changing or an object rotating, and this helps concepts become clearer. I love to teach with props. For instance, if I am discussing three dimensional solid polyhedra, I'll bring a cube, triangular prism, tetrahedra, and other models to class. Students can hold them and analyze them. When discussing volume, I bring in building blocks and the students can construct shapes with a given volume. In the future, I plan on

using props, when appropriate, in other math classes I teach. The visual aids can often illustrate a concept better than words. They also keep the students interested during class and help students have fun with mathematics.

I want every one of my students to grow as a critical thinker, problem solver, and student of mathematics. I do recognize that in any class, there are students with very different mathematical abilities. Learning can occur at many different levels, and it is important to me that every student in my class is advancing. I like to offer the top students in the class challenging problems to think about. I also make myself available to the students who are struggling and need a little extra assistance. I will continue to work at making my classroom a warm environment which provides challenge, discussion, and motivation for my students.