

School: Weston High School
Location: Weston, CT
Math Teacher: Kevin Fitzpatrick
Technology: Casio FX-9750G Plus, FX-9860G, & ClassPad 300

Summary: Hear how an educator, using graphing calculators in his classroom since 1989, has re-discovered Casio and what he has experienced.

Who Am I?

My name is Kevin Fitzpatrick. I am currently in my second year teaching at Weston High School in Weston, CT and in my fourth year teaching as an adjunct at Norwalk Community College in Norwalk, CT. Prior to that I taught mathematics in the Greenwich Public School System for 25 years. While 21 of those years were spent at Greenwich High School, I have also taught at Fairfield University (in Fairfield, CT), Monument Mountain (in Great Barrington, MA), and Blessed Sacrament (in New Rochelle, NY).

My Calculator Experience

During the summer of 1989, I attended a workshop at Ohio State and was formally introduced to the Casio fx-7000 as part of a program integrating its use into a Pre-Calculus course. Beginning that fall, I began to use graphing calculators in all of my courses at Greenwich High School. I initially started with the Casio fx-7000, moved to the TI-81, and then moved to the TI-82 and TI-83. I also used Hewlett Packard's HP 48 line in my calculus course.

Since these early years when graphing calculators first gained a foothold in the classroom, I have worked with numerous calculators and calculator manufacturers, including Texas Instruments, Hewlett Packard, and Casio. I have also worked on the development of calculators (the HP 38G, HP 39G, and HP 49G), written calculator workbooks, participated in classroom testing of calculators, and provided numerous training sessions and workshops on the use of graphing calculators.

As an educator, and proponent of technology in the classroom, my work has always been aimed at improving mathematics education using hand held technology. I continue to encourage my students to use the technology that fits them best based upon: functionality, price, and ease-of-use. I see graphing calculators as tools that aid the learning process, not tools that drive the curriculum.

My Casio Experience

Although I started with a Casio fx-7000 back at Ohio State in 1989, the majority of my calculator experience has been with Hewlett Packard and Texas Instruments. I had all but forgotten about Casio. That changed a few years ago when I was attracted back to Casio to experiment with a prototype of the ClassPad 300 graphing calculator. I was interested in this specific calculator because it was different and truly innovative. In my opinion, TI and HP have not introduced anything new that truly benefits education in the last few years. Casio has – the ClassPad 300. This product provides every student with the power to truly explore problems from any modality: symbolic, numeric, visual, and verbal. The large screen, stylus driven menu system, and drag-and-drop capabilities make this an easy calculator to use to demonstrate and explore relationships between various topic areas. I enjoy using it in several of my classes and have even written a workbook of classroom activities to support its use in the Geometry classroom. After spending time with the ClassPad 300 during my "reintroduction" to Casio, I also decided to take a more in-depth look at their other, "traditional," graphing calculators. Here is what I have found over the past couple of years:

fx-9750G Plus: After the ClassPad 300, this was the first Casio model I experimented with. I looked at this one primarily out of curiosity. I wondered how Casio could offer a fully featured graphing calculator for under \$50. I was astounded to see that it covered all of the necessary functions in every course I teach - all at a significant reduction in price for my students! While I teach in an affluent school district, where we have been fortunate to have the ability to use a wide variety of calculators and technology in the classroom, I do not have that same luxury with my community college students. The "under \$50" price of the fx-9750G Plus, combined with the fact that it has all the functionality they need for their math courses, makes it a very attractive option. It allows them to work with advanced technology without placing them at a financial hardship or, worse, having to make the choice to deal without it entirely.

fx-9860G: Casio's latest graphing calculator, the fx-9860G, maintains the focus of the fx-9750G Plus and adds: even more functionality to what was already a strong machine; a much faster processor speed compared to other calculators; the capability for all units to connect to an overhead panel; FREE emulator software that brings the functionality of the calculator to your computer; and, what I believe, is the finest screen available among "traditional" graphing calculators (larger and higher contrast). I have had a positive experience using these in my classroom this year.

An aside: As with the ClassPad Manager (emulator for the ClassPad 300) the free emulator for the fx-9860G adds a tremendous amount to the learning experience. This is especially true when used with a SmartBoard. The entire experience becomes much more interactive and exciting for the students.

All of this and the cost is still significantly lower than any comparable unit.

Transitioning from One Calculator Brand to Another

Because we all get comfortable using products and brands that we are used to – be it calculators or cars – it can be challenging to take the step from being aware of a product to actually evaluating and using something new.

While the interface and entry systems with each calculator model are always slightly different, I have found that the key is looking for the functionality necessary to help solve specific problems. This provides a very smooth transition from calculator to calculator. For example, by not relying on the calculator itself, and simply looking for where to find the roots of an equation, it becomes an easy move to make. Enter the equation, graph the equation, and then look at the area where you would expect to find tools to investigate the graph you have just drawn. In this specific case, you will actually see that the number of steps needed to find the same results are far fewer on the Casio fx-9750G Plus than on the TI-83 Plus.

I think the car analogy is appropriate. Using a different brand of graphing calculator is similar to renting or buying a different brand of car. Not all the same features are in the same place or accessed the same way, but it does not take long to make an easy switch. No one sticks to one brand of car simply because the windshield wiper controls are in a different place – especially if one of the cars is significantly more expensive than the other. The same should be true of any piece of technology – don't fear it, take it for a test drive and let it guide you along.

Casio Support

With Casio, specifically, if you take the steps to evaluate the product, they also provide support to aid in the transition.

Workbooks & Supplemental Materials: Casio provides a range of activity books, handouts, and support materials that can help in the classroom implementation of their calculator products.

Comparison Calculator Activities: Casio provides a range of comparison activities that show problems, answers, and the necessary keystrokes to get to those answers, for a variety of calculators. These are provided to schools to aid in their transition to using Casio calculators in the classroom. The main comparisons are for:

- Casio fx-9750G Plus vs. TI-83 Plus / TI-84 Plus
- Casio fx-9850G Series vs. TI-83 Plus / TI-84 Plus
- Casio fx-9860G vs. TI-83 Plus / TI-84 Plus
- Casio ClassPad 300 vs. TI-89 Titanium / Voyage 200

Free Professional Development: Casio offers a free professional development program designed specifically to help teachers use the technology in the classroom.

Programs for FREE Classroom Technology: Casio offers a free overhead program and a rewards program that allow you to acquire free products for your school or district based on the number of calculators purchased. They are both great ways to get additional technology for free.

Where Do We Go From Here

At the outset, I was very reticent to even consider the Casio line. I figured you “get what you pay for” and that something that costs so much less must be significantly less useful. I have been very pleasantly surprised and, with Casio, have found that you don’t need to overpay to get all that you need.

As an educator, and strong supporter of graphing technology in the classroom, I will continue to encourage my students to use the technology that fits them best based upon functionality, price, and ease-of-use. What I can say today, that I could not say just a couple of years ago, is that Casio will always be something I use with my students based on the value (price – functionality – innovative technology) and support they offer teachers and students.

For More Information About:

Casio Graphing Calculators

www.casioeducation.com

800-582-2763