

# TI-Navigator helps transform a 5<sup>th</sup> grade math class.

## Case Study 17

Teacher/Researcher – Sharon Camp, Pelican Marsh Elementary School, Collier County School District, Naples, FL



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<b>Teacher/Researcher</b>	Sharon Camp
<b>Location</b>	Pelican Marsh Elementary School Collier County School District Naples, Florida
<b>Course</b>	5 <sup>th</sup> Grade Math
<b>Grade</b>	5
<b>Student Profile</b>	24 5 <sup>th</sup> grade students in gifted/blended 10 Male, 14 Female 88% White, 12% Hispanic 8% non-native English speaking 17% Free/reduced lunch
<b>Technology</b>	TI-Navigator classroom network system with TI-73 graphing calculators, used with Interactive White board and video projector

*"I can look at the Navigator screen, identify those students with the incorrect responses and move towards those select students. I am able to diagnose the problem areas and fix them for the individual(s) before moving on in my content." And, ... a 100% made gains on the FCAT.*

**Setting:** Sharon Camp's room 5-104 is a lively environment for studying math. The 24 students's desks are arranged in clusters of 4 for each unit. Each cluster has a TI-Navigator wireless hub connecting each student's TI-73 graphing calculator with Mrs. Camp's computer. One of the wall-length white boards is allocated to Mountain Math, a colorful display of symbolic notations, concepts and problems relevant to the week's unit. Student work is prominently displayed. Motivational signs are posted on another wall, such as, "Shoot for the moon! Even if you miss, you'll land among the stars!" The class is self-contained, and 60 minutes of each day is devoted to Math. Mrs. Camp has 36 years of teaching experience, including 15 years of 5<sup>th</sup> grade teaching. Her elementary certification is permanent.

One corner has 4 computers used for student workstations, another is designed as a beach and used as a reading corner. A front carpeted area is used for class instruction outside of the students' desk area.

**Curriculum & Teaching:** The school's curriculum is based on the Sunshine State Standards for 5<sup>th</sup> grade in all subjects. Since Mrs. Camp's classroom is a gifted/ blended, self-contained class, she also compacts the core curriculum and adds horizontal enrichment. Mrs. Camp's textbook is Florida Mathematics (Scott Foresman- Addison Wesley - Pearson Education, Inc. 2005). The 6-week unit in this study included Chapter 7 (on Fractions and Decimals), and Chapter 11 (Ratios and Percents). Mrs. Camp enriches the curriculum with activities drawn from *Singapore Math*. During the unit, she was able to cover all planned content.

Mrs. Camp uses Navigator to individualize instruction daily. Using *Learn Check* and *Quick Poll*, she pre-tests each day's lesson by skill: one question per benchmark. Using the immediate results, she then groups accordingly into subgroups or levels when a skill is being taught or reviewed. Usually those groups are comprised of those who have mastered the skill and are in need of enrichment, those needing a little instruction and then practice, and those who have no clue and need the most of her time on direct instruction and plenty of practice time.

**Results:**

Mrs. Camp says her goal is 100% success: By the time the student reaches the final test, all skills are mastered at the application, analysis and evaluation levels assessed by the test.

Mrs. Camp reports that TI-Navigator gives her a much more complete view of how her class is progressing:

I now can ask a question, have all students respond, but instead of randomly moving around the room checking students' work in search of those in need of help, I can look at the Navigator screen, identify those students with the incorrect responses and move towards those select students. I am able to diagnose the problem areas and fix them for the individual(s) before moving on in my content.

She also uses TI-Navigator to monitor the whole class, even while she is working with a single small group:

No doubt the students are more engaged during direct instruction. But I am also finding that during the times when I work with small groups and I need to have information from other students in the classroom (not in my group), the Navigator System because my tool of communication. In this day and age of texting, when students use this form of communication freely, it is time to bring the medium into place in the classroom. Instead of making a general announcement aloud that will interrupt others at work, I can reach students individually and receive their responses via Navigator.

Benefits for individual students can be substantial. As an example, Mrs. Camp tells of how TI-Navigator helped one student:

I have a young man with behavior management issues, but on the first day of school, I asked him to be responsible for the hubs on Navigator and I showed him how to reset the system if issues arose. His school year in my classroom, behavior, as well as academic, has been significantly improved and his sense of responsibility has been exceptional. He lives for Math and using the TI 74 calculator gives the added enrichment and keeps his mind stimulated.

Mrs. Camp reports that the improvements she has made pay off with FCAT and local test performance:

- 100% of my students made state and local gains in Math on the 2008 FCAT Math test.
- My personal gains scores in Math were 185 ('08) as compared to 84 ('07), and 110 ('06)
- My personal gains scores in Math were 185 ('08) in comparison to the school at 149 ('08), and the state of FL at 99 ('08).