

Family Tools and Technology (FTT)

Science, Technology, Mathematics, and Engineering for Boys and Girls

The TQE-R Program in the Center for Mathematics, Science, Technology, and Pre-Engineering at The College of New Jersey *presents:*

A **4 1/2-day Family Tools and Technology (FTT)** Professional Development Institute for teams of two educators from each interested school district (maximum of 10 teams) (Grades 3-7) will be held on Monday through Friday, August 18-22, 2008 from 8:30 am - 3:30 pm each day (8:30am to Noon on Friday) at TCNJ in Armstrong Hall, Room 114.

Family Tools and Technology is a nationally recognized program cited by the U.S. Department of Education Gender Equity Panel for its innovative strategies focused on increasing the interest of young girls in science, technology, mathematics, and engineering.

The FTT program offers turnkey training for teachers and provides them with resources to conduct after-school workshops that are offered in a comfortable school atmosphere for children in grades 3 through 7 and their families. They experience a series of hands-on, design and build activities, and have fun in the process of learning and investigating the science, technology, engineering, and math concepts imbedded in each activity.

Professional Development Institute Goals

- Facilitate family involvement in real world projects involving technological design, problem solving, and the application of mathematics and scientific principles.
- Increase the number of students—girls and boys—who are interested in technological design, engineering, mathematics, and science.
- Motivate families to become advocates for their children's problem-solving endeavors in technological design, engineering, mathematics, and science.
- Introduce students to the many career opportunities available in design, engineering, and science.

Family/School Workshop Strategies

- Hands-on design, build and test activities within set criteria
- Problem solving within a real world context
- Real world applications of math and science skills and concepts
- Provide opportunities to involve family teams at their local school in a variety of exciting design challenges.
- Provide positive experiences for girls and boys, building their confidence as creative, technical problem solvers.
- Align all activities with the New Jersey Core Curriculum Content Standards in Mathematics, Science, and Technology.
- Provide children with a confidence while using tools and equipment safely.
- Build confidence in the abilities of girls to apply their skills successfully in the areas of mathematics, science, technology, and engineering.

Activities and Challenge Samplers

Forensic Science—gather and analyze trace evidence, solve crime scenarios

Electronics—design, build, and test a light emitting diode mini flashlight

Structural Engineering—design, build, and test a corrugated cardboard seat

Biorelated Technology—design and build a hydroponics growing unit

Transportation—design and build a mechanical toy

Mechanical Engineering—design, test, and build a mechanical tool

Architecture—design and model your dream bedroom

Chemistry—colloidal suspension activities with Silly Putty, Play Dough, Magic Mud

Aeronautics—fizzy rockets and gliders, fizzy cars

Contact Information:

Mary E. Switzer—FTT Program Director

Teacher Quality Enhancement - Recruitment Program at The College of New Jersey, Armstrong Hall 103
2000 Pennington Road, PO Box 7718, Ewing, NJ 08628-0718

Phone: (609) 771-2714 **Fax:** (609) 771-3330

Email: switzer@tcnj.edu