



nCASE Training Module Description

(May 2013)

The Forensics & Discovery Mathematics modules are extremely relevant to today's high-tech world. nCASE has always maintained a strong commitment to mathematics, and these modules are used to support inquiry and design processes during nCASE's professional development program for STEM teachers. During these exciting modules, the nCASE lead instructor guides participants as they investigate mathematics using a cutting-edge training curriculum.

Forensics & Discovery Mathematics I (FDMI) – Middle School (Algebra 1 Prepared):

Participants investigate the rate of flow concepts and formulas. They use problem-solving techniques to understand mathematical triangulation methodology. They modify mathematical conditions using the incline plane to understand linear acceleration and expand to projectile motion and nonlinear equations. Participants use measurement techniques and analyze data in the mathematics of forensic science, and they apply knowledge from the *Numb3rs* television series to build appropriate data collection devices.

Forensics & Discovery Mathematics II (FDMII) – Middle School (Algebra 1 Prepared):

Forensics and Discovery Mathematics II extends the inquiry-based mathematics from FDMI with a middle-school focus and presents the topics in the context of the *state standards* and reflects as appropriate the *common core state standards*. The laboratory activities (topics) are integrated in this unit to provide hands-on learning exercises. Key mathematical terms and definitions are presented to enhance mathematical communication. Participants determine if bones are male or female using mathematical assessments, use data to graph linear functions, study parabolic motion, determine the rate of change, gain a better understanding of the definitions of probability, and enjoy additional activities with a focus on body temperature, integers and more.

During the final projects for either level, participants solve a crime scene investigation utilizing the knowledge and skills acquired during the module activities.

Each trained teacher receives a module (valued at approximately \$500) with a Texas Instruments graphing calculator, equipment and supplies to replicate the mathematics activities in their classrooms.

When possible, participants have the unique opportunity to interact and network with experienced DoD scientists and engineers.