



GOVERNOR'S ACADEMY
Innovation, Technology and Engineering

Connecting the Future
Student Breakout Session Descriptions
GAITE Exploratory Saturday
Canon Virginia, Inc.
January 31, 2009

Integration of Automation onto the Manufacturing Floor

Using high speed robotic automation, Canon Virginia is able to replace repetitive manual labor and simple decision making to improve quality and production. This automation takes advantage of several simple devices that when combined together mimic complex human tasks. Canon's technical staff is given the opportunity to not only utilize these type devices, but through hands on development, they also are the key contributors to the design, fabrication and implementation of this automation. The presenters will demonstrate these devices, the automation process and challenge the students to compete against the automation in a battle of speed and intelligence. Careers in automated manufacturing and the pathways to educational opportunities and future employment will be discussed.

Electronic Connections to the Future

The Northrop Grumman Newport News Apprentice School Team will lead GAITE students in the use of Snap Circuit Electronic Kits. The students will jump right in and start building projects with an easy-to read color manual that teaches about electronics. Students will learn about connecting the future with electronics using a hands-on approach incorporating motors, batteries, lamps, speakers, resistors, capacitors, and switches to design electronic circuits. Careers in electronics and the pathways to educational opportunities and future employment will be discussed.

The Use of Lasers, Optics and Electronics in Remote Sensing

The NASA LaRC team will present connecting the future through the development of remote sensing instrumentation. The purpose and techniques of remote sensing will be demonstrated using laser and fiber optic technology. The understanding of how light works in our electromagnetic spectrum and how this knowledge is applied in the aerospace industry will be discussed. Exploration regarding remote sensing career pathways with a focus on engineering technology and the type of education required will be mentioned.



Parent/Guardian Breakout Session Descriptions
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The STEM Concept: Engineering Technology and Manufacturing

This session reviews the STEM (Science, Technology, Engineering and Math) concept and addresses the increasing significance of STEM education in the manufacturing workforce pipeline. What is manufacturing and why is it important in the U.S. and in Hampton Roads? Why is manufacturing a good career choice? What kinds of engineering technology jobs are out there in manufacturing? An opportunity for questions and some discussion will be available.

Career Pathways, Exploration, and Planning

This session will address the importance of career exploration and planning for a pathway that provides career choices in the manufacturing workforce. An overview of the skill-sets, education requirements, and job availability in the field of engineering technology will be provided. A review of the mission and services provided by the Youth Career Café will be presented with examples of assessments and planning for the pathways in engineering technology jobs in the U.S. workforce. An opportunity for discussion will be provided.

Gearing up for the Future with the Help of a Career Coach

This session will explain the role of the Career Coach in a student's educational development as they explore career pathways. Examples of how parents can get involved in their children's career planning will be reviewed. An overview of the skills and education requirements for the Co-op programs with Northrop Grumman, Canon and NASA available through Thomas Nelson Community College will be explained. Suggestions for integrating the many Peninsula career resources such as the Youth Career Café with other workforce opportunities will be discussed.