Statewide IT Bridge Curriculum:

Contextualized Science Module

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FOUNDATIONS FOR DESIGN
- ✓ Instruction emphasizes learning by doing through projects and simulations; therefore, the instructor is a facilitator or learning coach.
- ✓ Each module emphasizes communication, teamwork, and critical thinking.
- ✓ Content is contextualized for science skills.
- ✓ Learning outcomes often require learners to engage in collaborative and individual projects involving authentic materials and resources and complete documents and tasks for science with the guidance of learning facilitators.
- ✓ Specific units within modules may serve as precursors for additional units within the module. Many lessons and units may be repeated and expanded from one module to another.
- ✓ Self-advocacy and continual self-assessment and self-monitoring are inherent to each module while students must be introduced to, required to meet with, and encouraged to consult with program coordinator as well as academic and employment professionals.
- ✓ Guest speakers and conferences with employment and academic professionals are integral to the relevance and value of the program for students.

ASSUMPTIONS:
- ✓ Each agency or instructor who may use these modules or this program will adapt instructional strategies, content level of difficulty, learning activities and projects to meet the needs of the program's target population and adult learners of lower and higher academic levels.
- ✓ Referenced resources, relevant Internet links, learning activities (created, suggested, attached, or referenced) will be used, modified, or omitted based on student need and restraints of class time and resources.

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✓ This curriculum will work in established internal partnerships within the academic community as well as external partnerships/relationships in the employment community.

✓ Units and lessons will be adapted to fit within varying contact hours of a program.

Module Description: The Contextualized Science Module is designed to provide students with an understanding of how science as a whole fits and is used within information technology and that a basic understanding of scientific principles will serve them well within an employment context.

Module Objectives

Students will:
- Research
- Problem solve
- Think critically
- Compare and contrast
- Define terms
- Develop inquiry skills
- Speak publicly

Methods of Instruction
- Lecture
- Small and large group discussions
- Group presentations
- Online research
- Guest speakers

Methods for Evaluating Student Performance
- Individual and group presentations
- Self-assessment
- Written work
- Teacher observation logs

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Module Overview

Module Outline

I. Be introduced to computer hardware
   a. Envisage the inside of a computer
   b. Explore a computer
   c. Computer vocabulary
   d. Computer skills assessment

II. Be introduced to computer software
   a. What is software?
   b. How software and hardware work together

III. Create a database by entering home inventory data into a form
   a. Review "Introduction to Databases Activity Sheet"
   b. Review "Introduction to Databases Vocabulary Review"
   c. Review "Complete the Intro to Databases Outline Organizer"
   d. Review the "Independent Database Creation"
   e. Review "Home Inventory Database Evaluation Rubric"
   f. Complete the fill-in-the-blank "Introduction to Databases Vocabulary Review" as a review of the lesson

IV. Learn the importance and structure of firewalls
   a. Virtual firewall

V. Discover basics of computer networking
   a. Computer networking vocabulary
   b. Discuss computer networking
   c. What are the fundamentals of networking?
   d. LAN network topology
   e. Components of a computer network