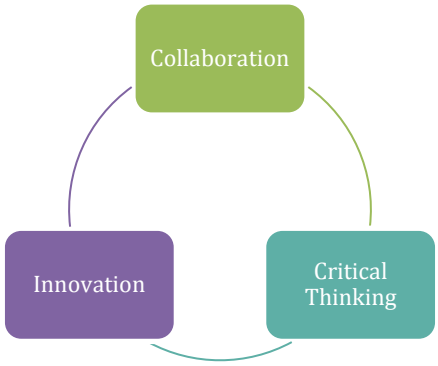
STEM School Chattanooga
11th Grade PBL
Unit Plan Template

Unit Quarter: 4th

Title: Smart Garden Project



Learning Target Topics

Collaboration: Working with other people on a project or problem to achieve a shared goal.

Critical Thinking: Accessing, using, and applying information and knowledge.

Innovation: Using creative thinking to construct something new and valuable.

Grade Level	11th Grade	Unit Length	9 Weeks
Industry Partner	• Daniel Leake, SmartGardenProject		
Unit Overview	STEM student teams will design and fabricate a smart garden system to monitor and support a small garden. The design will use Arduino technology for automated monitoring, alerting, and watering of the garden. For the school partner, the focus is on development of a working smart garden solution to meet consumer needs. For the STEM School, the focus is on the critical thinking and innovation skills demonstrated by the student teams.		
Unit Essential Issue	• **Project**: *Use Arduino technology to create a smart garden system for automated monitoring and watering of a home garden.*		
Kick Off Event	**Kick Off: Week of March 21st** The business partner will discuss an overview of smart gardens, problem of "food deserts, value of home gardening, challenges of home gardening, technology and gardening, and project requirements for automated monitoring and watering for home garden use.		
Culminating Events	**Presentation Day: Week of May 16th** The student teams will present their smart garden systems to the project sponsors. The project sponsors will evaluate the systems and provide constructive feedback to the teams.		
Common Assessment	Students will be scored using the Association of American Colleges and Universities rubric for Critical Thinking and Creative Thinking Skills. All 4's will equate to Advanced, scores of 3 and 4 will equate to Proficient, and any scores below a 3 will equate to Below Basic. Items that will be used to score student work: • Assignments (Plans, Weekly Prototype Reports, Design Process Work Products, etc.) • Presentation • Smart Garden prototype with Arduino technology		