



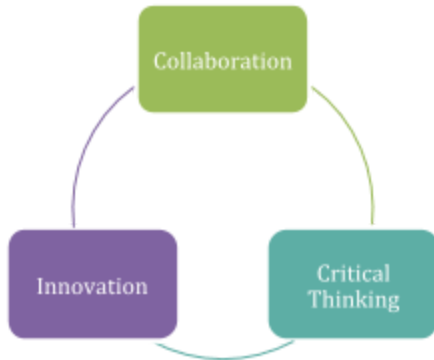
STEM School Chattanooga

11th Grade PBL

Unit Plan

Unit Quarter: 4th

Title: Rainfall Simulator Project



Learning Target Topics

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

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

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

Grade Level	11 th Grade	Unit Length	9 Weeks
Industry Partner	<ul style="list-style-type: none"> Hayley Wise, Watershed Educator, Tennessee Aquarium Conservation Institute 		
Unit Overview	<p>If you haven't heard about the Tennessee Aquarium Conservation Institute, it is awesome! They have a new facility located near the Baylor School on the Tennessee River. Its mission is to support conservation and education--and that's where you come in. TNACI Educator Hayley Wise was looking for creative ways to show the effects of how different terrain types affect water runoff and subsequently impact the water quality of the Tennessee River. What she needed is a rainfall simulator. These table-sized devices use a motorized sprinkler to simulate rainfall and water runoff for various types of terrain. TNACI would like one rainfall simulator to use at their facility and a smaller, mobile rainfall simulator to take to schools. It's the perfect project to take advantage of FabLab capabilities so if making is your thing, check out this project! For the school partner, the focus is on the creation of an effective and reliable rainfall simulator. For the STEM School, the focus is on the collaboration, critical thinking, and innovation skills demonstrated by the student teams.</p>		
Unit Essential Issue	<ul style="list-style-type: none"> Project: Create an rainfall simulator to educate students and the community on the effects of permeable and non-permeable surfaces on water runoff and nonpoint source pollution. 		
Kick Off Event	<p>Kick Off: Week of March 19th Watershed Educator Hayley Wise will discuss the mission of TNACI and the goals for the rainfall simulator. She will discuss desired features of the rainfall simulator including opportunities for innovation.</p>		
Culminating Events	<p>Presentation Day: Week of May 14th The student teams will present their rainfall simulator solutions to the project sponsors. The project sponsors will evaluate the solutions and provide constructive feedback to the teams.</p>		
Common Assessment	<p>Students will be scored using the Chattanooga State Community College rubric for Collaborative Skills and the Association of American Colleges and Universities rubrics for Creative Thinking Skills and Critical 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.</p> <p>Items that will be used to score student work:</p> <ul style="list-style-type: none"> Assignments (Plans, Weekly Prototype Reports, Design Process Work Products, etc.) Presentation Rainfall Simulator 		