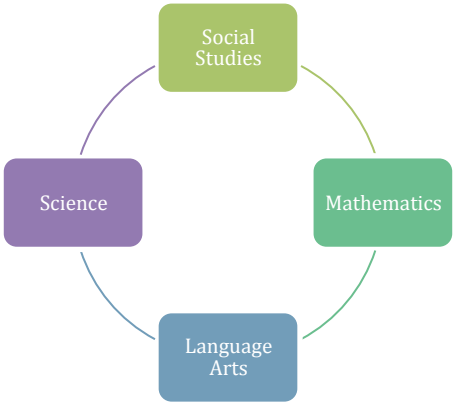
STEM School Chattanooga
10th Grade PBL
Unit Plan 2

Unit 2 : Creative Discovery Museum – Elementary STEM Lessons



Learning Target Topics

Algebra II: PBL team determined targets

Geometry: PBL team determined targets

English II: Strengthen writing through planning, revising, and editing. Use technology to produce and publish work.

Chemistry: PBL team determined targets

U.S. History: Introduce and establish claim. Effectively seek and gather information.

Grade Level	10th Grade	Unit Length	9 Weeks
Unit Overview	Students will meet with personnel from the Creative Discovery Museum (CDM) to develop ideas for elementary STEM lesson plans. Groups will choose elementary math **or** science standard(s) and create a lesson plan that details a STEM lesson for the standard(s) used. CDM personnel will assess the lessons for quality. Student teams meeting the standard set by CDM will have the opportunity to implement the lessons at elementary schools with K-5 students in the spring semester.		
Unit Essential Issue	• **Problem**: *Design a K-5 STEM lesson plan to explain mathematical or scientific concepts.*		
Culminating Events (Kick Off, Midterm Events, and Groups)	**Kick Off– October 15th** A representative from Creative Discovery Museum will visit all 10th graders to demonstrate a K-5 STEM lesson, as it would be presented to elementary students. STEM School students will actively participate in each component of the CDM lesson plan, including the hook at the beginning, rotating in small groups from station to station exploring each concept, and a summarizing closing activity. **Student Teams** Students will work in teams of 4. *Math lesson plan teams must have members that are in the same math course.* **CDM Visit – October 21st** CDM will visit students to present their lesson plan format and to teach students where to find elementary state standards. **Standards and Submission of Ideas – October 29th** Students will submit their chosen math or science standard(s) and initial plan ideas to CDM representative for approval. **Introduction Performance - November 19th - 20th** Students will perform a completed draft of their introduction to Mr. Evans and receive feedback before they meet with the CDM representative.		

CDM Feedback Session #1– November 23th
Student teams will receive feedback on their lesson from the CDM representative. Student teams meet with CDM representative one at a time.

Lesson Plans Due to Mr. Kubisak– December 1st
Students will turn in their lesson plans to Mr. Kubisak.

CDM Feedback Session #2 – December 3rd
Student teams will receive feedback on their lesson from CDM representative. Student teams meet with CDM representative one at a time.

Final Presentations – December 14th
Students will present their lessons plans for final approval to CDM representatives.

Lesson Implementation – January – March 2015
Students will teach approved lessons in local elementary schools.

Common Assessment

STEM School Chattanooga

STEM PBL Rubric

PBL Unit: #2 CDM
Student: _____
Date: _____

	Advanced	Proficient	Needs Improvement
Math Components: **Algebra II/ Geometry**	Teams with **Math Standard** focus: ✓ A fifth station must be created and included in lesson plans that connects the chosen elementary-level standard to a current STEM School Algebra II or Geometry Learning Target*. ✓ This station must present the high school-level standard in a developmentally appropriate way. (**For this reason, students wishing to achieve "Advanced" must be in homogenous math groups.*)	Teams with **Math Standard** focus: Lesson Plan Elements: ✓ Four learning stations must be created and connected to an elementary-level math standard of your choice. ✓ One station must connect the chosen math standard with science. ✓ One station must connect the chosen math standard with technology. ✓ One station must connect the chosen math standard with engineering. ✓ One station must connect the chosen math standard with mathematics. ✓ Math standards and learning targets are relevant for chosen grade levels. ✓ The proposed station activities relate clearly to the math standards.	
Science Components: **Chemistry**	Teams with **Science Standard** focus: ✓ A fifth station must be created and included in lesson plans that connects the chosen elementary-level standard to a current STEM School Chemistry Learning Target. ✓ This station must present the high school-level standard in a developmentally appropriate way.	Teams with **Science Standard** focus: Lesson Plan Elements: ✓ Four learning stations must be created and connected to an elementary-level science standard of your choice. ✓ One station must connect the chosen science standard with science. ✓ One station must connect the chosen science standard with technology. ✓ One station must connect the chosen science standard with engineering.	

			✓ One station must connect the chosen science standard with mathematics. ✓ Science standards and learning targets are relevant for chosen grade levels. ✓ The proposed station activities relate clearly to the science standards.	
	Language Arts Components: **English II**	✓ Lesson plans must be edited and refined in a way that has the lesson plans publish ready. ✓ Learning targets are written so that interest is ignited and opportunities for further inquiry are present.	✓ Lesson plans must be presented in a Tennessee state accepted format. ✓ Presents measurable learning targets that are tied to state standards for the grade level. ✓ Lesson has measurable outcomes for each station.	
	Social Studies Components: **U.S. History**	✓ Introduction contains a consistent flow with no sustained pauses. ✓ Introduction should be able to captivate the audience and get the student's excited about the projects and/or goals. ✓ Introduction should use devices to assist the students to remember and achieve the center's objectives.	✓ Introductions must contain a Hook, Background Information of Centers, and Goals for the Elementary Students. ✓ Introduction should be age appropriate.	
	Minimum Requirement Components: **Must be included to be graded**	General Requirements: ✓ Lesson plan is in the CDM format. ✓ Lesson plan includes four stations with one station connecting to each part of STEM. (Science, Technology, Engineering, Mathematics). ✓ Groups will choose either math *or* science standards to focus their lesson plan. ✓ Groups will have a maximum $50 budget for materials. ✓ Introduction should be at least one minute long but concise enough to keep the attention of the age group. ✓ All group members must participate in the introduction.		

Unit Learning Targets

Algebra II:

- Learning targets to be determined by students based on their chosen content.

Geometry:

- Learning targets to be determined by students based on their chosen content.

Chemistry:

- Learning targets to be determined by students based on their chosen content.

English II:

- I can develop and strengthen my writing by planning, revising, and editing with a focus on purpose and audience.
- I can use technology to produce, publish, and update my own work, and shared writing projects.

History:

- I can introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
- I can gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience

Vocabulary

Math: Algebra II	1. TBD by students' chosen content
Math: Geometry	1. TBD by students' chosen content
Science: Chemistry	1. TBD by students' chosen content

	Language Arts: English II	1. Audience 2. Conventions 3. Editing 4. Planning 5. Purpose 6. Revising 7. Rewriting	
	Social Studies: U.S. History	1. Audience 2. Theme 3. Hook 4. Thesis 5. Flow	