



Wynn's Gizmos and Gadgets

Gadgets for Fun!

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Mathematics Connections:

GPS

- Math 1

- Math 2

QCCS

- Euclidean Geometry

- Algebra I



Standards Addressed:

CTAE Standards

- ACT-IED 2
- ACT-IED 3
- ACT-IED 4

Math Standards:

- P1, P2, P3, P4, P5
- M6M2, M6G1
- M7G1
- M8G1
- MM2G1
- MM2G3

Introduction of Project Concepts to Students





Gadgets:

- A **gadget** is a small mechanical device that usually created for a particular function, but is often thought of as a novelty.



RFP

- **A Request for Proposal (RFP)** is an invitation for suppliers, through a bidding process, to submit a proposal on a specific commodity or service.



RFP (cont.)

- A bidding process is one of the best methods for leveraging a company's negotiating ability and purchasing power with suppliers.



RFP (cont.)

- The Request process provides clarity to the terms of the bid and proposal.



RFP (cont.)

- Professionals ensure the solution chosen for the company is beneficial to the company.



Project Scope:

- The project will teach students about the process involved in proposing and creating a product of a simple mechanical nature.



Project Scope:

- The CTE concepts to be demonstrated are based on creation of basic mechanical parts. The concepts included are: Demonstrating the use and care of drafting equipment and Identifying and accurately constructing the proper geometric figures.



Project Scope (cont.):

- Students will work in groups consisting of members of their choice. The group will create the company, its logo, and history. The group members will create a Request for Proposal (RFP) and a bid to address the RFP.



Project Scope (cont.):

- The requirements of the project are to produce a typed Request for Proposal following the given template, a brief creative bid responding to the proposal and creating a drawing of a simple mechanical device that accompanies the bid.



Project Scope (cont.):

- The guidelines for carrying out the project are as follows: Everyone in the group will participate. Each member will be responsible for a portion of the RFP being created. The members will come to a consensus on which mechanical device to draw.



Actual Assignment:

Students will work collaboratively on the following components to this unit plan project:

- Create a Company
- Create an RFP
- Create a Bid
- Create drawings to accompany the Bid



Resources Required:

- Drafting Tools: T-Square, Scale, Compass, Pencil, Eraser, Eraser Shield, Protractor, Paper "B" size, Triangles.
- Textbook: Technical Drawing
- RFP samples and reference websites



Reflections:

- The students learned a number of concepts in this unit plan project that encompassed math, writing, and technical skills. Specifically, the students were able to identify basic math and geometry in this project through the geometric construction and measuring assignments.



More Reflections:

- The students were able to practice their reading, writing, and typing skills by creating and typing their RFP's and Bids for the project.



More Reflections:

- Overall, the project exposed students to the world of manufacturing and engineering. The project brought to light the process from a situation being presented to a solution for the situation.



More Reflections:

- When teaching this unit in the future, the RFP would be provided and the Bid would be created by the students.
- This would allow the students to interact with more math than the original project.



Student Reactions:

- There was no significant reaction observed from the students, possibly due to the obvious math embedded in the geometric construction techniques.



Student Reactions:

- The majority of the students had not taken geometry, but were able to identify that math was involved with the geometric construction techniques.



Difficulties:

- Proximity: We work in different buildings, meeting together was challenging.
- The Engineering Drawing Class had just started the unit in question, eliminating the possibility of a pre-test.



Difficulties:

- Math EOCT and Advanced Placement testing considerations prevented the Geometry class from reviewing concepts already visited until after the EOCT. The math lesson will be taught the week of May 12th.



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Difficulties:

- We did not have students in common.
- We did not have common planning times.



Collaboration:

- Project ideas created together.
- Standards explored together.
- Lesson ideas created together, lesson implementation completed individually.