



Drexel-SDP GK-12 LESSON

- ***Creative Engineering Presentation***
- *Engineering Module*
- Subject Area (Unit): ***Engineering***
- Concept: Engineers
- Objectives: *Students create engineering firms and make a creative engineered design to alleviate one of the world's problems. They create a poster of the design and present their ideas to the class.*
- PA Academic Standards: *3.1.7ABCE, 3.2.7ABC, 3.4.7AC, 3.6.7BC, 3.7.7E*
- Grade Level: **6**
- Setting/Group Size: Classroom split into small groups of 3-4.
- Duration/Time Required: ***2 60 minute sessions***
- Materials List: Poster board, drawing paper, construction paper, markers, colored pencils and other poster related items.

Context: *This is a continuing part of the engineering module that gives students a sense of what engineers do. The goal is to present engineering as a creative profession that does not solely rely on math and science but is more of an art where math and science are the tools they use.*

- **Methods and Procedure:**

1. Begin with a discussion of some of the worlds problems i.e. pollution, hunger, poverty, violence, etc. Create a list on the board and then attempt to attached solutions that have alleviated the problem in some manner that were created by engineers. For example, pollution is alleviated somewhat by more fuel efficient cars and alternative fuels created by engineers.
2. Ask each group to create a grid, listing 3 problems they would like to see changed and then 3 solutions for each problem. Remind them to be as creative as possible and not to consider whether something is “possible” or not.
3. Move around as each group completes their grid and make suggestions or comments. Once the grid is complete, help each group select one solution that is the most “engineering” and instruct them to flesh out the details. How much would it cost, what exactly does it do, who would use it, would it create an other problems?
4. Have each group then create a poster to present to the class that details what the design would be, what problem does it solve and other constraints involved. Tell them that they are creating to poster to present to a group of supporters who might fund their project.
5. Have each group present their idea and design to the class. Allow the class to ask questions about the poster and engage in a discussion of how effective it would be. Complete each presentation with a comment on the legitimacy of the design and perhaps similar ideas that are being worked on.
6. End the project with a short classroom discussion that stresses how engineers change the world for the better and how creativity plays a enormous role in good engineering.

- Assessment: *Evaluation of the poster and presentation*

- Keywords: Engineering

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