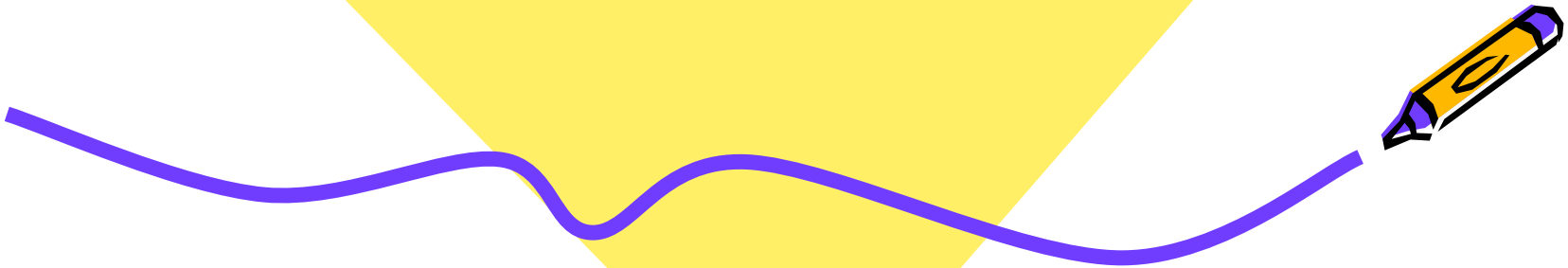
Candy Dispenser Challenge

ENGR 7-2 Lesson 3



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CTAE RESOURCE NETWORK

GPS:

- ENGR-II-4: Students will invent or innovate a technological product.
- ENGR-II-6: Students will develop leadership skills and work ethics.

Critical Knowledge/Elements

B. Construct a simple technological system

C. Explain how your technological system operates

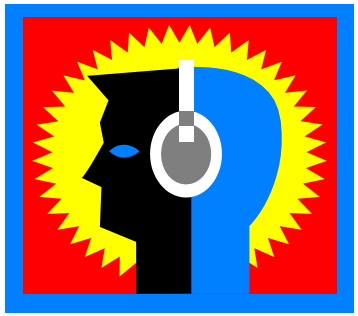
C. Describe the steps of the Engineering Design Process

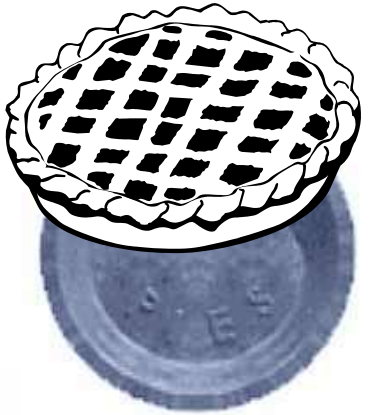
Essential Question

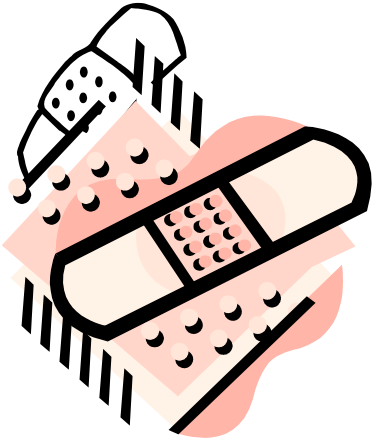
What steps are necessary to invent and construct a simple technological system?

Great Thinkers and Their Inventions

- Chester Greenwood
- Earle Dickson
- Clarence Crane
- William Russell Frisbee







Images were retrieved from http://z.about.com/d/inventors/1/0/P/5/frisbee1.jpg, http://www.candydirect.com/mints/Lifesavers-Rolls-CrystOMint.html, and the Microsoft Clip Art Gallery

What's so important about all of this stuff?

- People of every generation all around the world have increased their capability to do work and live well by inventing and innovating.

- The development of any kind of technology is a human activity and is the result of someone having a problem, needing something new to fix the problem, and creating a solution.

What's so important about all of this stuff (continued) ?

- Invention requires a lot of patience and perseverance.
- Technology is closely linked to creativity, which has resulted in innovation.
- Invention is a process of turning ideas and imagination into devices and systems.

What's so important about all of this stuff (continued) ?

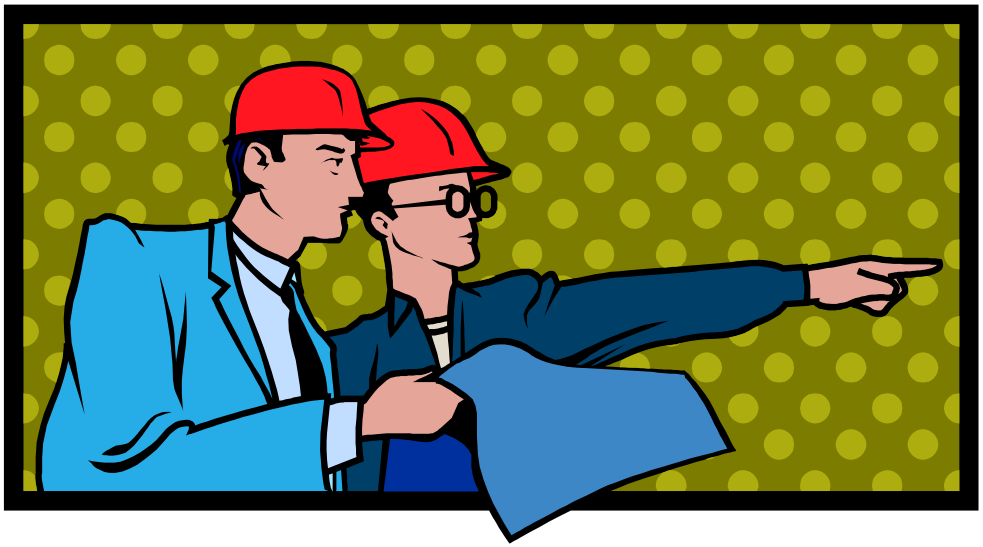
- Innovation is the process of modifying an existing product or system to improve it.

- Innovation often involves decreasing the overall capabilities of a product or system in order to increase its ability to perform a more narrow or specific task very efficiently. This process is called **specialization of function**.

What's so important about all of this stuff (continued) ?

- New products and systems can be developed to solve problems or to help do things that could not be done without the help of technology.

Career Areas Associated with Invention and Innovation



- Construction
- Engineering
- Marketing
- Science
- Technology
- Manufacturing

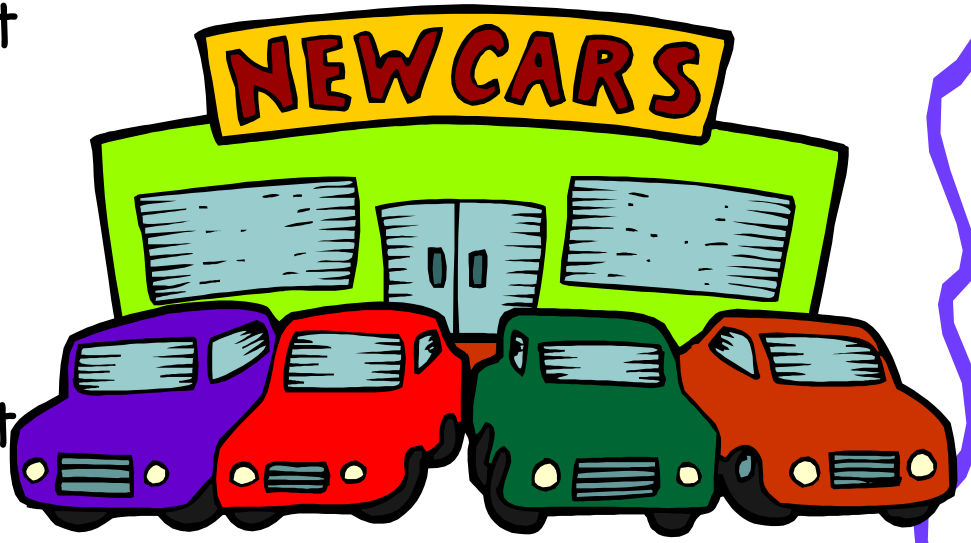
Engineering Design Process

The steps in the process include:

- Defining the challenge
- Explore ideas
- Plan & Develop
- Test idea
- Present the solution

Prototypes

- A prototype is a full-size working model used to test a design.
- Prototypes are often used in the automobile industry to develop new car and truck ideas to their fullest potential while carefully evaluating the designs' strengths and weaknesses.



Working in groups of 3 or 4, you will use the engineering design process to invent a new Candy Dispenser.

See the ***Candy Dispenser Design Brief***.

Think Safety!

Design Brief: Candy Dispenser Design Brief

Group Work

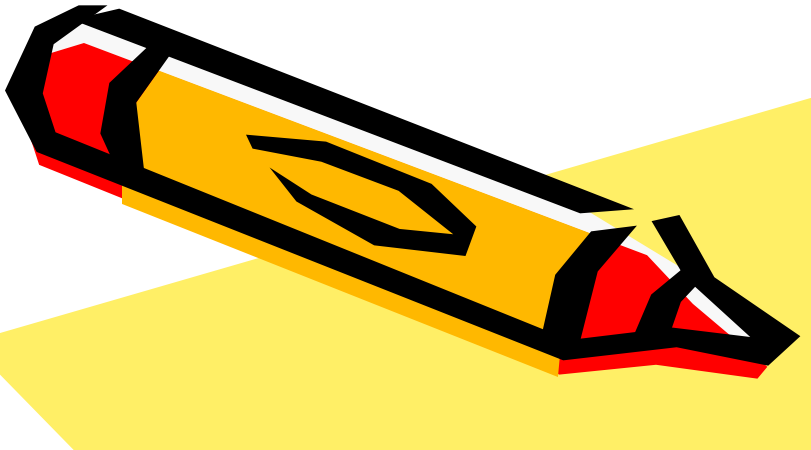
- Working together in collaborative and cooperative ways is not always easy.
- Sometimes you'll have to work with people, who aren't your friends.
- Finding common ground is the best way to get the task done well.

Complete your Candy Dispenser to the class.

Present your Candy Dispenser to the class.

Essential Question

What steps are necessary to invent and construct a simple technological system?



Conclusion

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