

Objectives 8-15-05

- *The student will create their own company idea based on an immerging technology.*
- *The student will develop a product that addresses a specific need.*

Bell Work

Why is drafting considered a universal language?

Create your own product!

- Get in Groups of 3
- First, discuss changes in technology in the past 100 years. Think about the changes in transportation, communication, design, construction, etc.
- Write down a list of careers that have evolved because of changes in technology.

Objectives 8-16-05

- *The student will create their own company idea based on an immerging technology.*
- *The student will develop a product that addresses a specific need.*

Bell Work

Quickly get in your groups and begin working on your reports!

Objectives 8-17-05

- *The student will create their own company idea based on an emerging technology.*
- *The student will develop a product that addresses a specific need.*
- *The student will present their ideas to the class.*

Bell Work

Quickly get in your groups. You have 25 minutes until you present your business plans.

Objectives 8-18-05

- *The student will be able to identify and describe the steps of the design process, and discuss reasons why each phase is important.*
- *The student will discuss how this process relates to real life products.*

Bell Work

Why do you think there needs to be a process for engineering design?

The Design Process

Step 1: Basic design idea is conceived or assigned to the design engineer.

Step 2: Design engineer carefully analyzes the need for the product.

Step 3: General and specific objectives are set for the design. Manufacturing and marketing are considered at this point.

Step 4: Serious consideration given to the actual physical design.



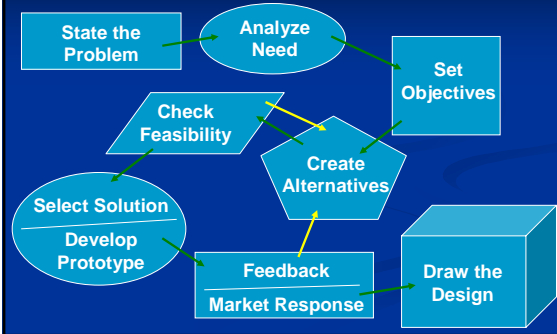
The Design Process

- Step 5: Various designs are checked for feasibility.
- Step 6: Best and most feasible solution is selected, and prototype is constructed.
- Step 7: Prototype is submitted to select group of consumers to check the market response. If change is needed, the process loops back to step 4.
- Step 8: Final drawings are prepared, along with specs and all other documentation required for manufacture.

Food for Thought

- Which phase of the design process do you feel is the most important? Why?
- Which stage of the design process would you most likely take part in?
- What are some products that you use that have been through this process?

Since you put it that way...



Functional Design

- The aspect of design that implies that the product will perform in the manner in which it was intended.
- It asks the question, “Will the product solve the problem at hand?”

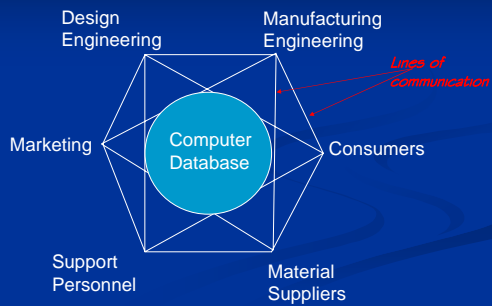
Aesthetic Design

- The aspect of design that deals with the form or overall appearance of the product.
- Involves characteristics such as color, line, style, space, contrast, proportion, and balance.
- What features on a sports car can we relate to this type of design?

Engineering Design

- This type of design is the problem solving process discussed earlier.
- It takes into consideration both functional and aesthetic design, and in the end, must be a financial success.

Concurrent Engineering Design



- What benefits do you see with the concurrent design model?

Engineering Design Today

- Today's designs are driven by three things apart from quality and technology:
 - Cost
 - Market Trends
 - Customer Service
- Read pages 134-135 in the textbook. What are some qualities that today's engineer or designer must have to make it in the field? Be prepared to discuss your answer.

Objectives 8-19-05

- The student will be able to explain the importance of freehand sketching for communicating technical ideas.
- The student will sketch different objects using freehand multiview and pictorial sketches.

Bell Work: Why is freehand sketching such an important part of the design process? At what stages of the process would the designer or engineer use sketching?

9 Important Reasons to Sketch

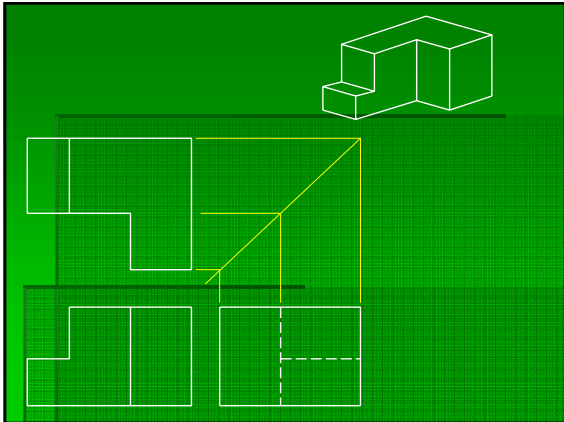
- Persuade people that an idea is good
- To develop a refined sketch of a proposed solution to show to a client
- To clarify complicated detail of a drawing
- To give design ideas to drafters so they can do the detail work
- To develop ideas for refining a new product or machine part
- To develop and analyze the best methods and materials for making a product
- To record a design improvement on an existing product
- To show that there are many ways to look at or solve a problem
- To spend less time in drawing

Multiview Sketching

- Showing an object in more than one view
- You draw sides of an object and relate them to each other
- Orthographic Projection- The system by which views of an object are in relation to each other.

One-View Sketching

- This type of sketching can be done if the object can be described in two dimensions. Thickness would normally be noted instead of drawn.



Three Primary Views

- Front
- Top
- Right Side
