

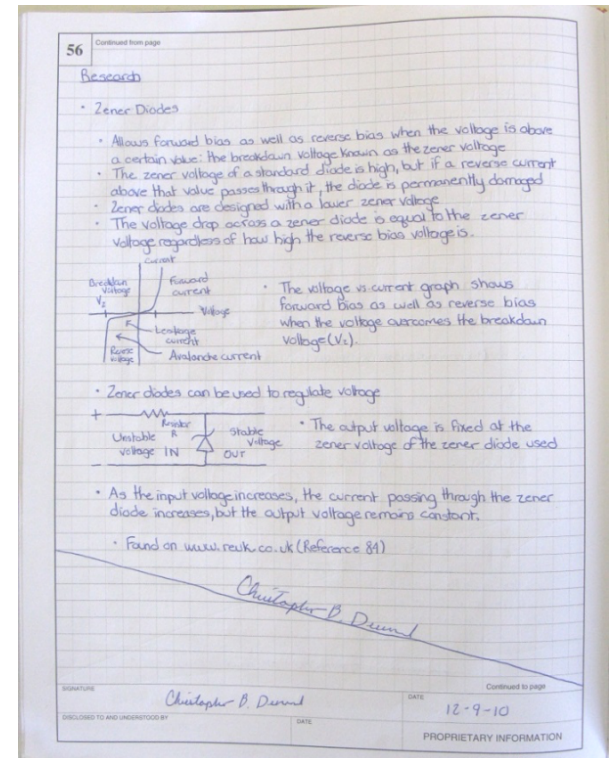
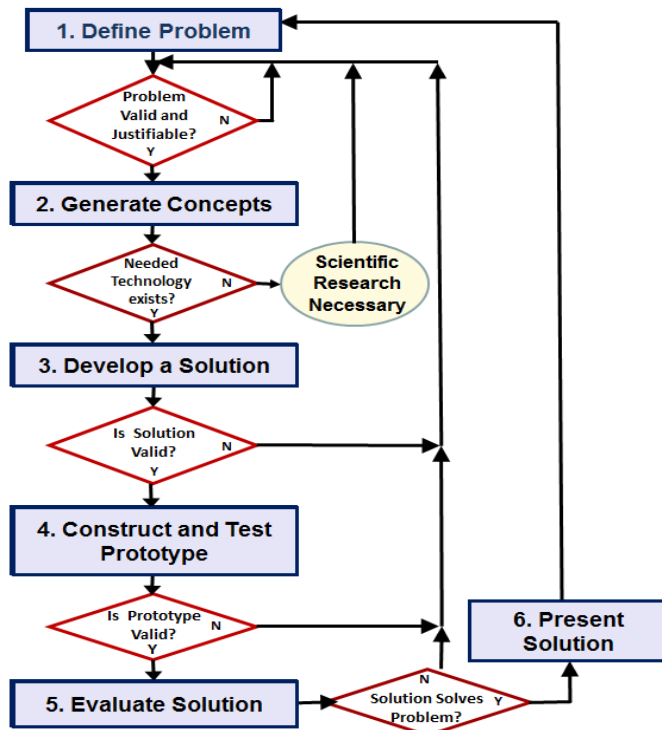


Not-So Instant Design Challenge

Design Process and Engineering Notebook

- Use the engineering design process
- Document the steps in your engineering notebook

A Design Process



Design Process Documentation

- Process will occur quickly
- Focus on the process

Equipment for the Challenge

- **Engineering notebook**
- **Pencil**
- **Tape**
- **Scissors**
- **Box Cutter**
- **(1) nail or screw**
- **(3) drinking straw**
- **(3) coffee stirrers**
- **1/4" Foam Board**
- **(3) nuts or washers**
- **3/16" or 1/4" Dowels**
- **Glue gun and glue sticks**
- **(1) small cardboard box or shoe box**
- **(3) unsharpened pencils and/or bamboo skewers**
- **Picture of your 3 favorite cartoon characters (related)**

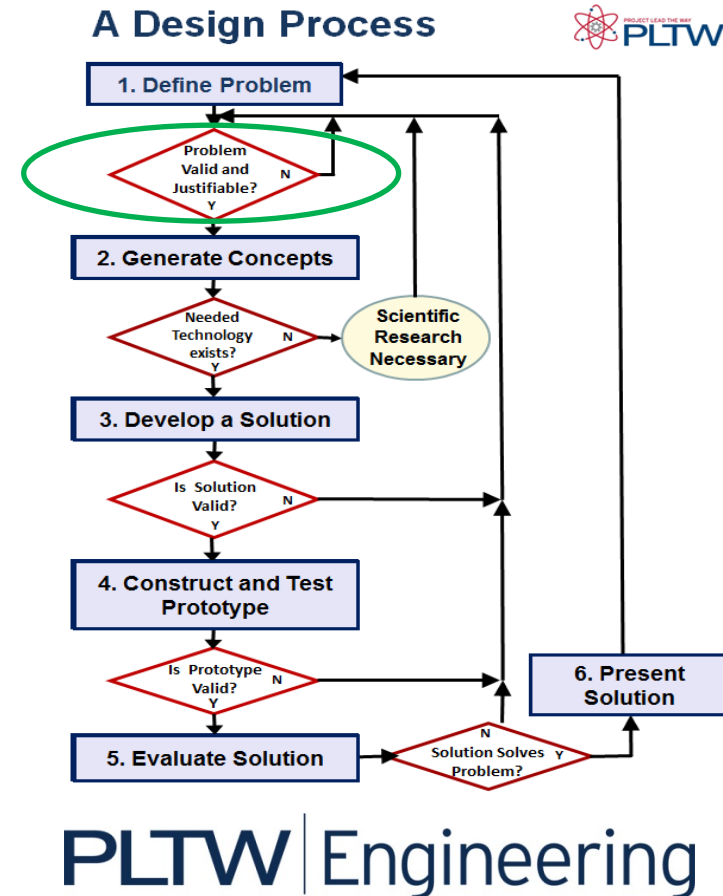
Engineering Notebook: Title

Automaton

(pronunciation: /ɔ:'tɒmətən/)

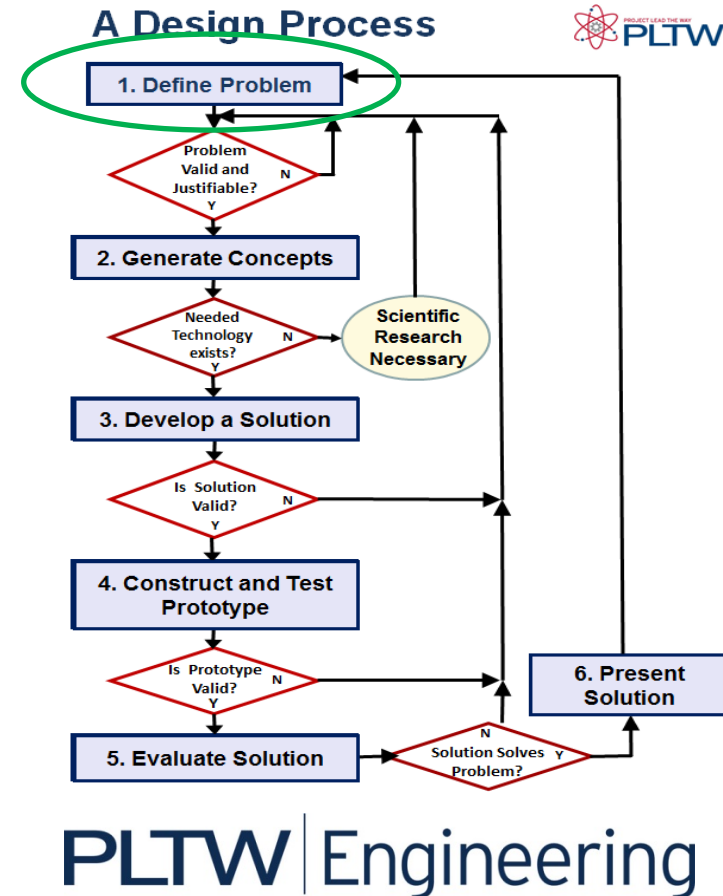
(plural: **automata** or **automatons**)

is a self-operating machine, or a machine or control mechanism designed to follow automatically a predetermined sequence of operations, or respond to predetermined instructions.



Engineering Notebook: Define the Problem (8 Minute)

Design a mechanical system that will produce realistic motion of a figure(s) or object(s) resulting from the rotation of an axle that involves the interaction or coordinated movement of at least two separate objects. Design for a child between the ages of 5 and 12 years old.



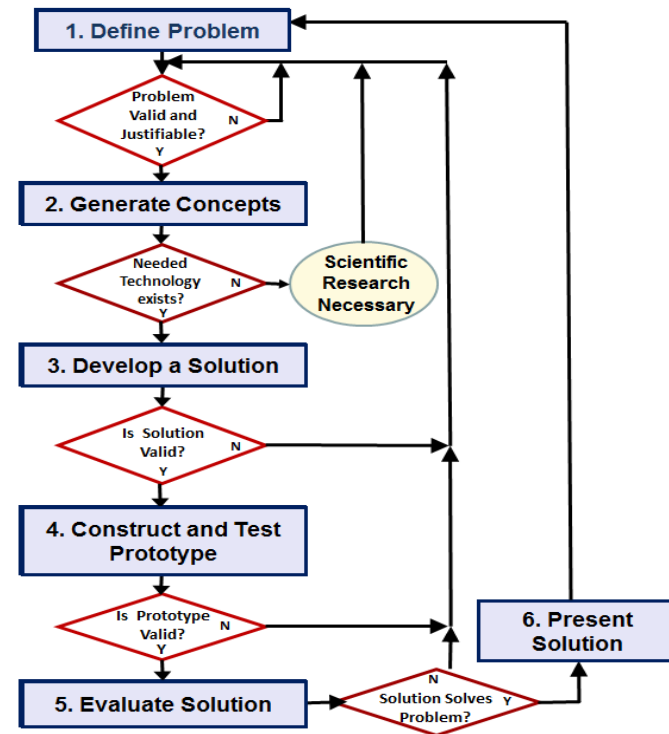
Engineering Notebook: Constraints

(8 Minute)

Constraints

1. The design of the system must have four walls
2. The mechanical system must be human powered.
3. The system must produce repetitive motion.
4. The mechanical system must include at least three cams.
5. The system must operate as designed for at least one minute at a sustained speed of one revolution per second without damage to any component of the design.

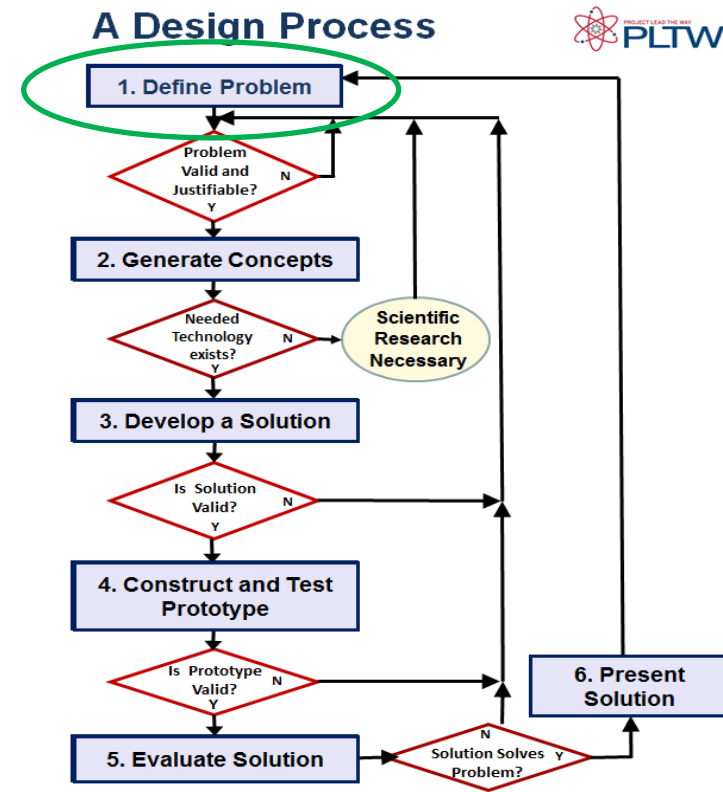
A Design Process



Engineering Notebook: Prior Solution Attempts (10 Minutes)

Research

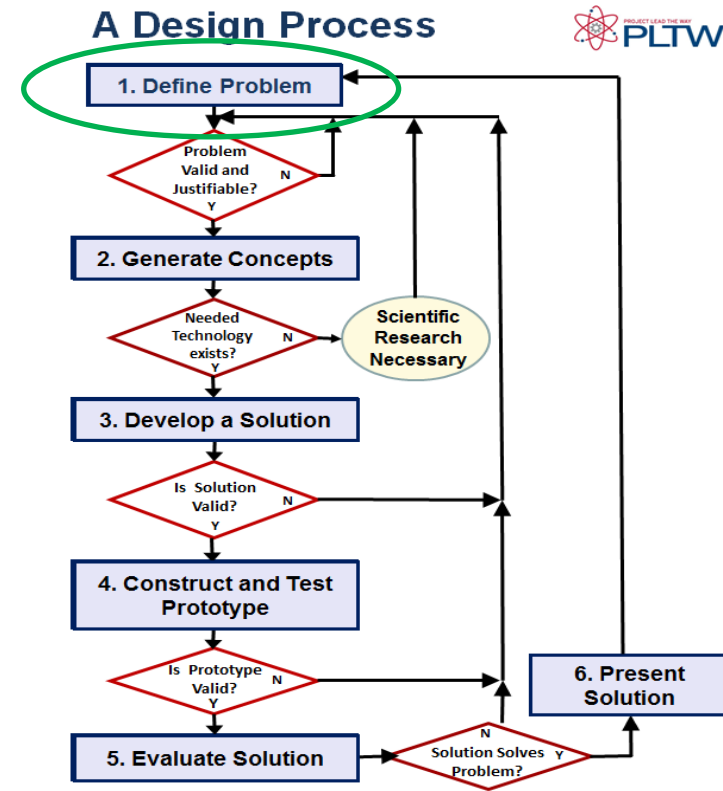
List at least 3 URLs



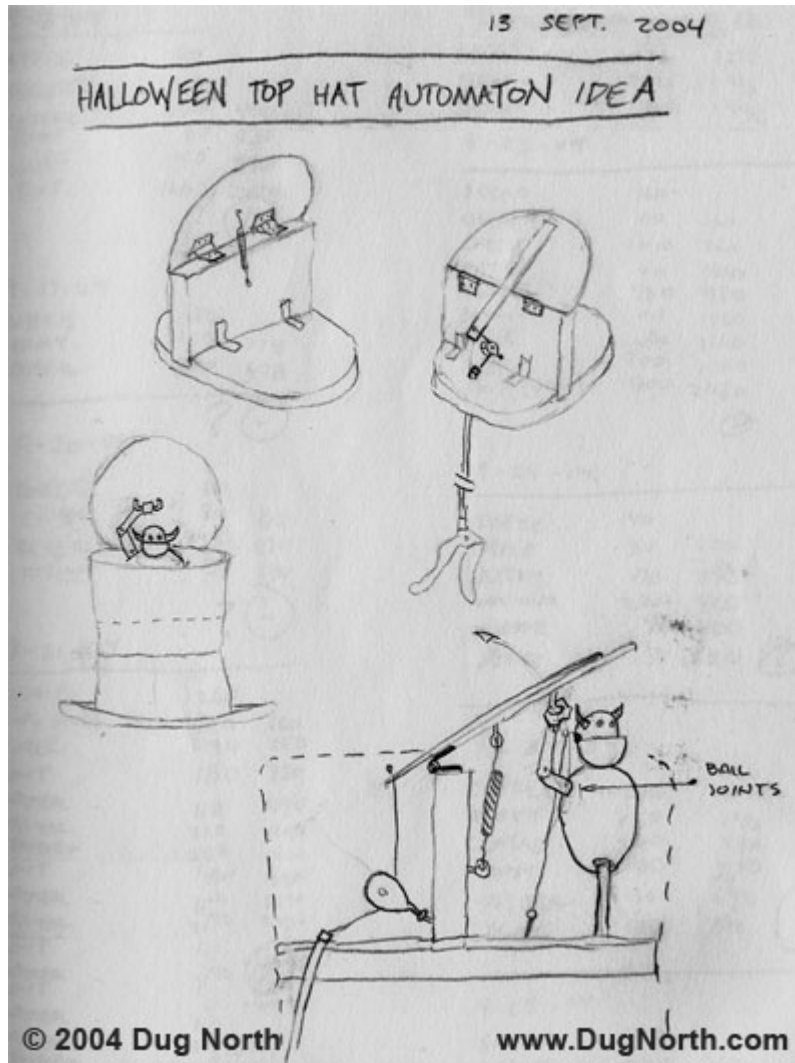
Engineering Notebook: Prior Solution Attempts (5 Minutes)

Research

Share research with your partner

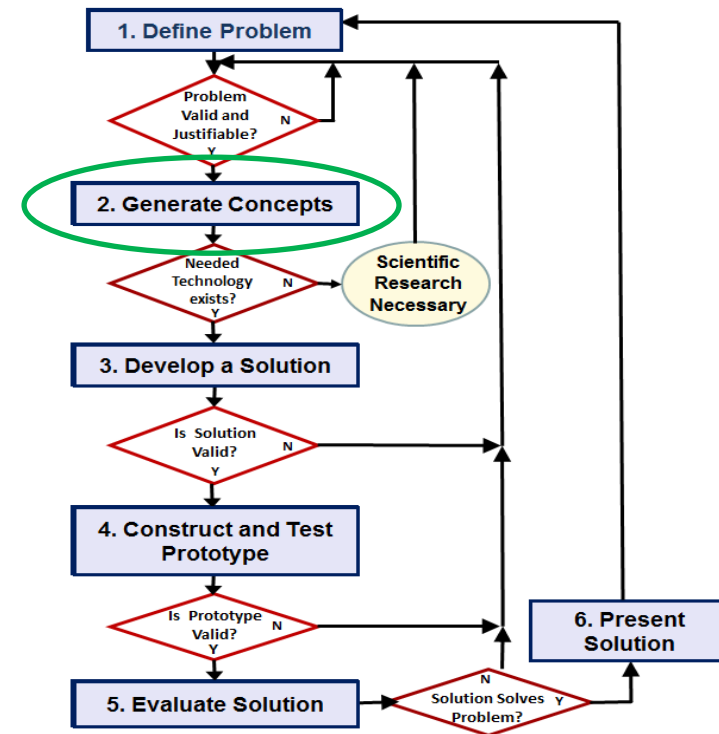


Engineering Notebook: Generate Concepts (15 Minutes)

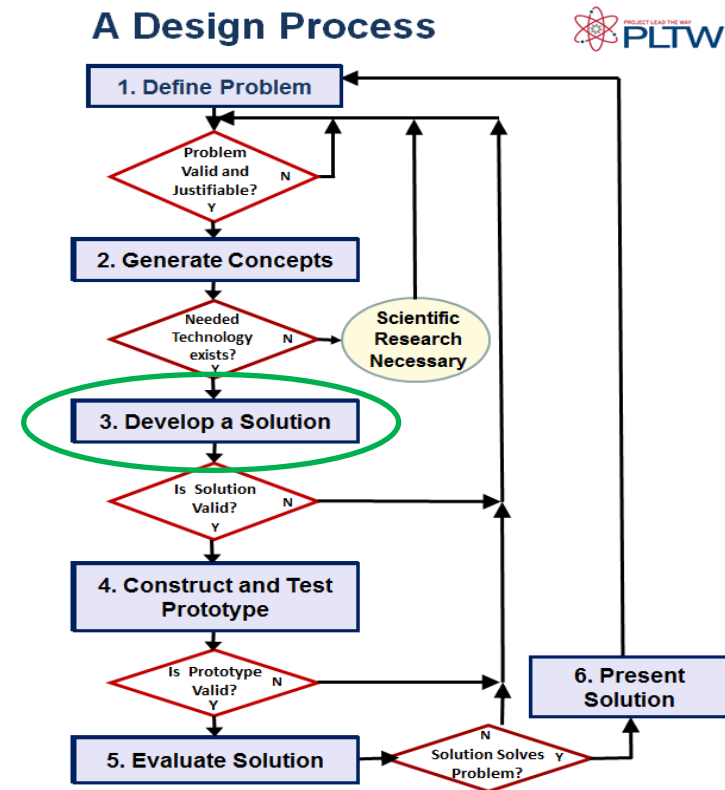


15 minutes to complete 3 sketches
(In future more time will be given)

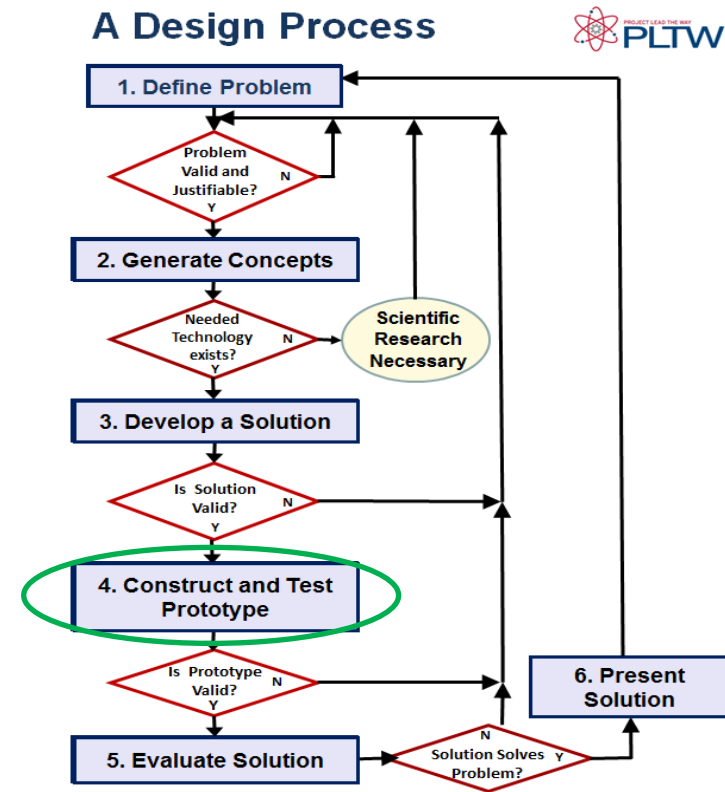
A Design Process



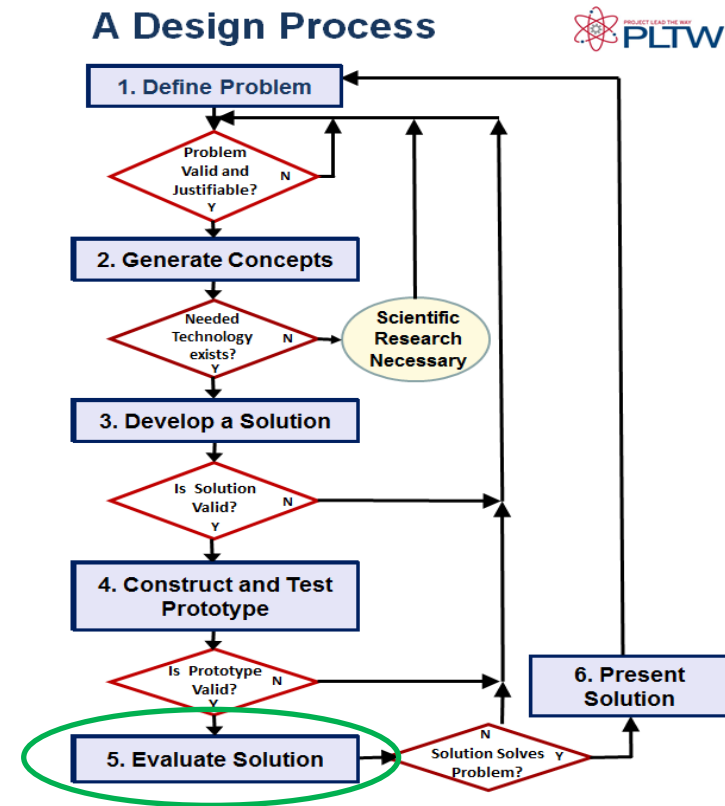
Engineering Notebook: Develop a Solution (10 Minutes)



Engineering Notebook: Construct and Test Prototype (90 Minutes)

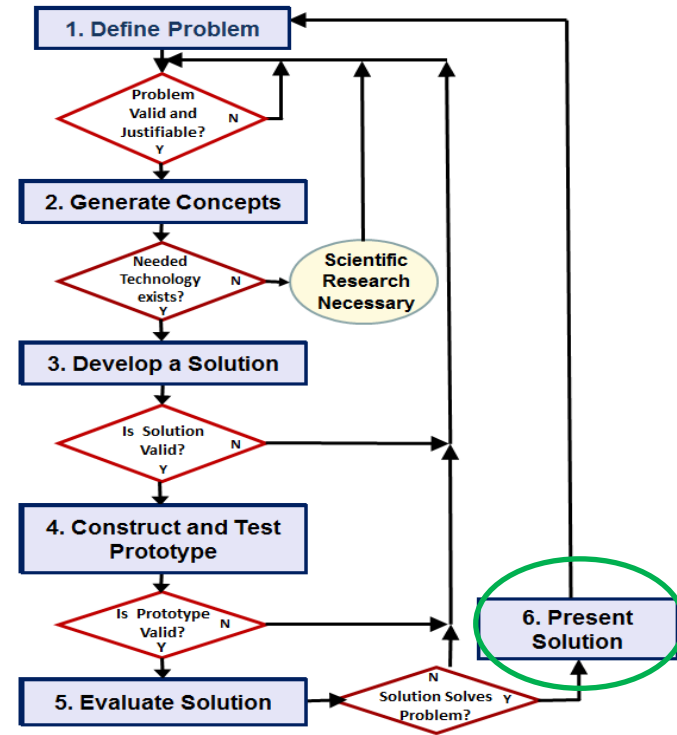


Engineering Notebook: Evaluate a Solution (10 Minute)



Engineering Notebook: Present Solution (15 Minute)

A Design Process



Compete Remaining Design Steps

Document remaining steps

A Design Process

