



# Somerset Berkley Regional High School

Robotics Engineering with LabView

**Objective: To support the development of metacognitive skills and habits of reflection for effective problem solving**

**Planning ; What should step one be? What do I know about the problem?**

**Goal setting Set realistic goals. How much time do I have?**

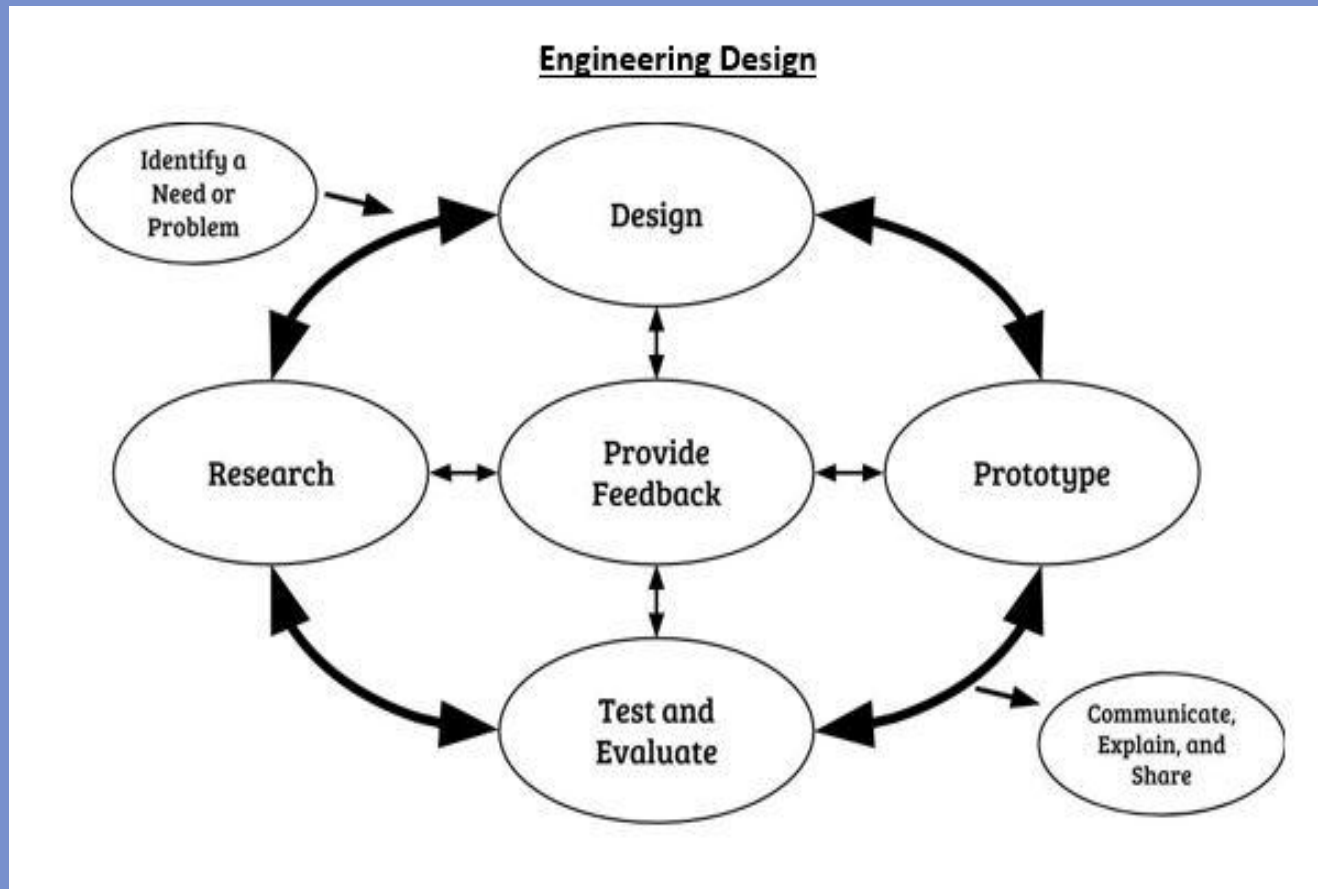
**Monitoring progress Am I on the right track?**

**Adjusting What did I learn. Did I get the results I was expecting?  
If I could do this over again I would.....**

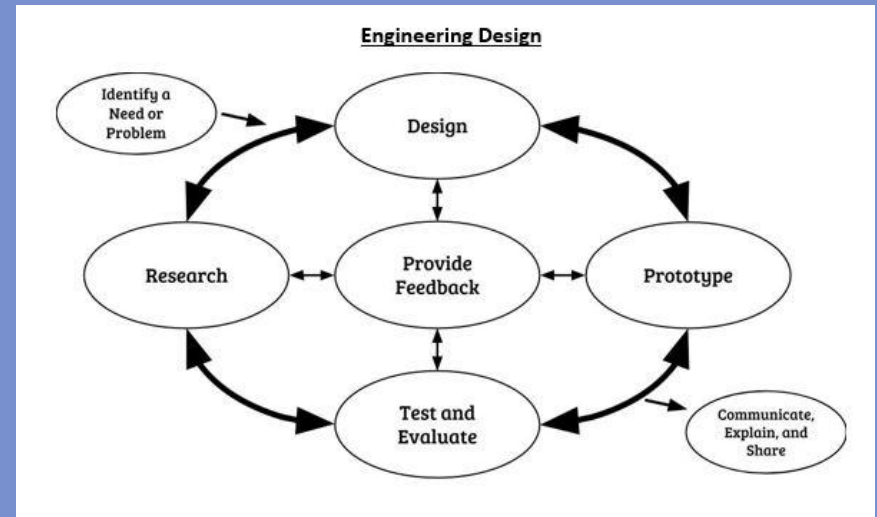
# Standard 1.1

## Engineering Design Process

2016 Revised Massachusetts State Framework



Identify the need or problem



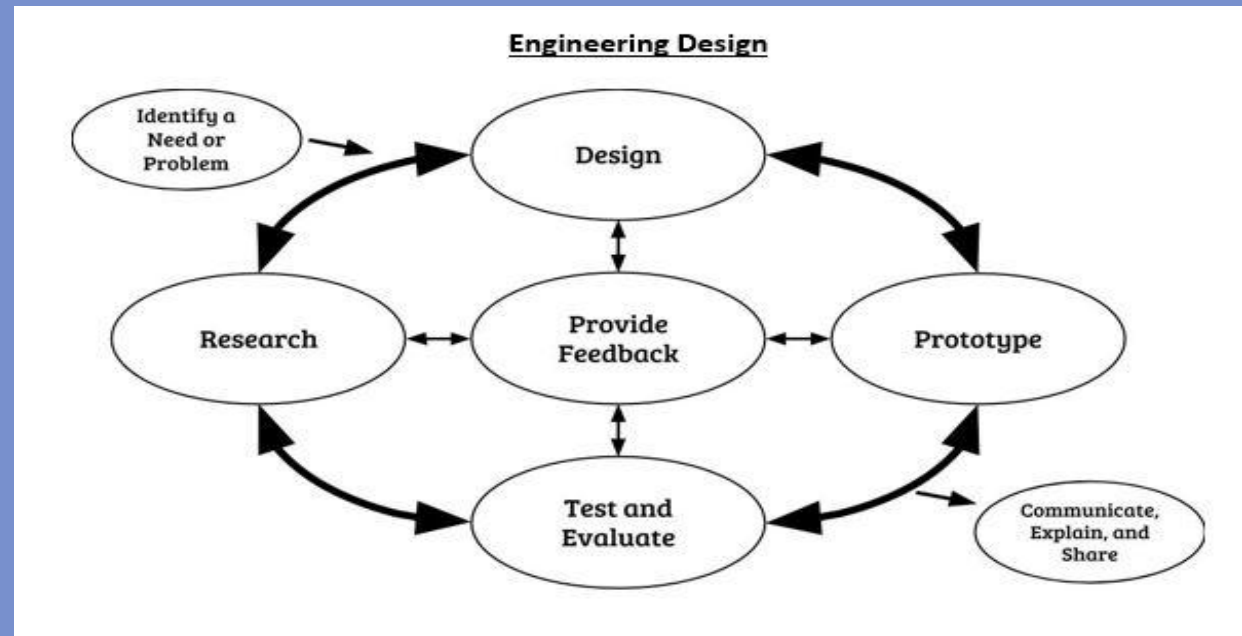
**Identify a need or a problem.** To begin engineering design, a need or problem must be identified that an attempt can be made to solve, improve and/or fix. . This typically includes articulation of criteria and constraints that will define a successful solution.

**Evidence** : Add slide and describe what you already know about the problem. This helps to build an understanding of the problem

**Describe the knowledge you will need to solve this problem.**

- The problem we already know about is we need to get the robot to follow the line, and not fall/ break.
- Also to go up a ramp and touch a button that makes a sound when you hit it.

Research the problem



**Research.** Research is done to learn more about the identified need or problem and potential solution strategies.

Decide what information is needed.

What should step one be?

Use appropriate tools and strategies to access the information

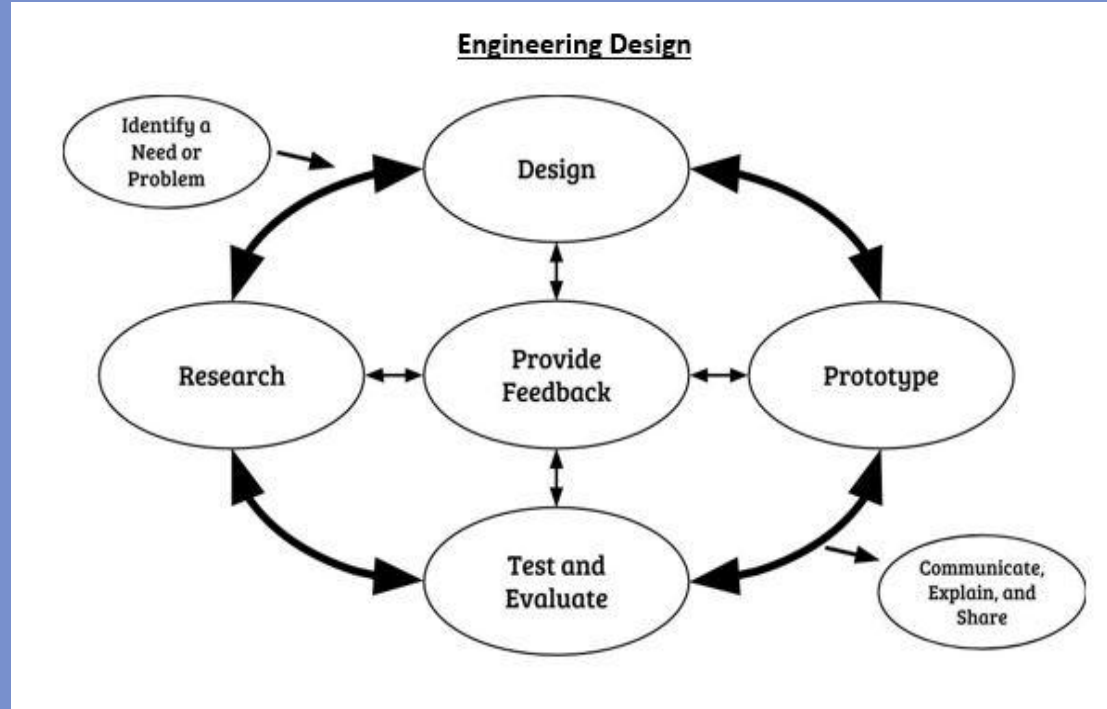
Analyze the information gathered and its sources.

If there is more than one good answer to the problem, list the positives and negatives of each of the findings.

On your PowerPoint file show add a slide to show what you did for research. \*Evidence

- We need to know how to get the robot to follow the line
- Step one is building the robot to use the light sensor correctly
- There is only one answer to the problem... use the light sensor to get on the line and stay on it

# Design



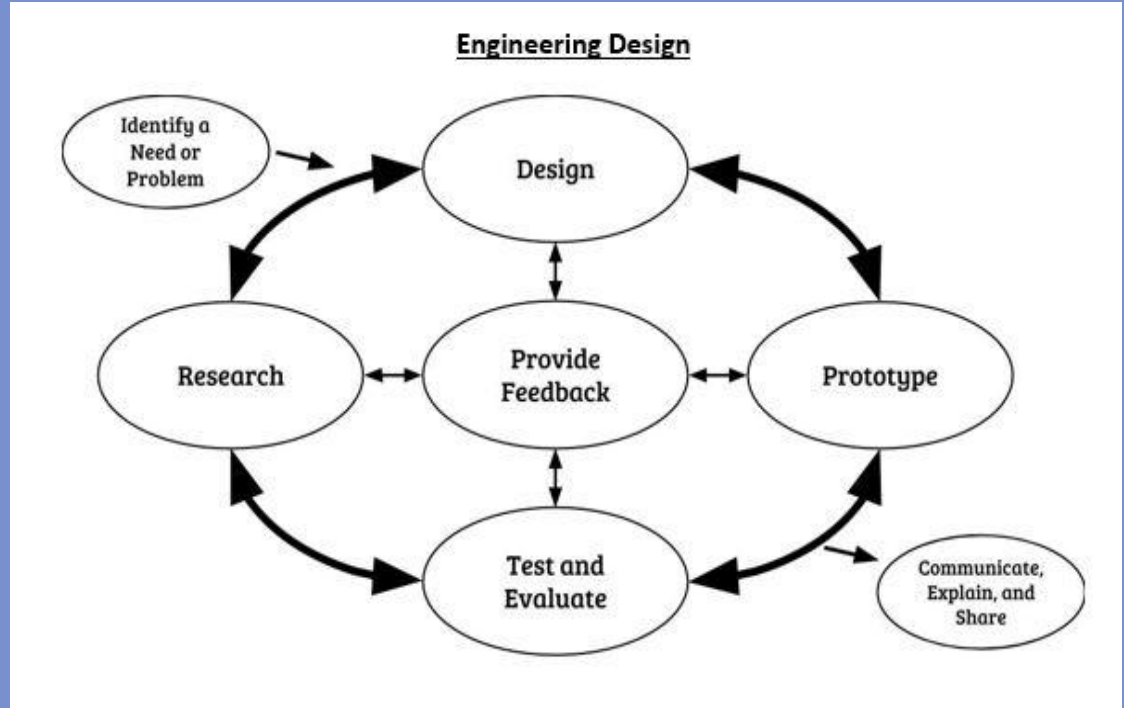
**Design.** All gathered information is used to inform the creations of designs. Design includes modeling possible solutions, refining models, and choosing the model(s) that best meets the original need or problem.

**Evidence** : Clarify the roles of each team member, taking advantage of individual strengths.  
List the role of each member on the team



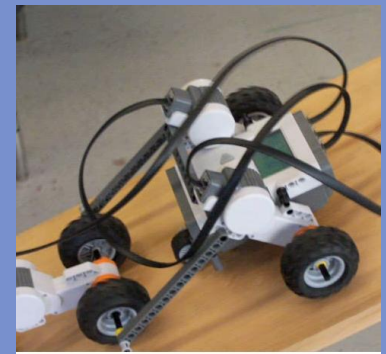
- tyler has to program and test the robot
- i am responsible for building the robot and fixing it when it gets broken

# Prototype



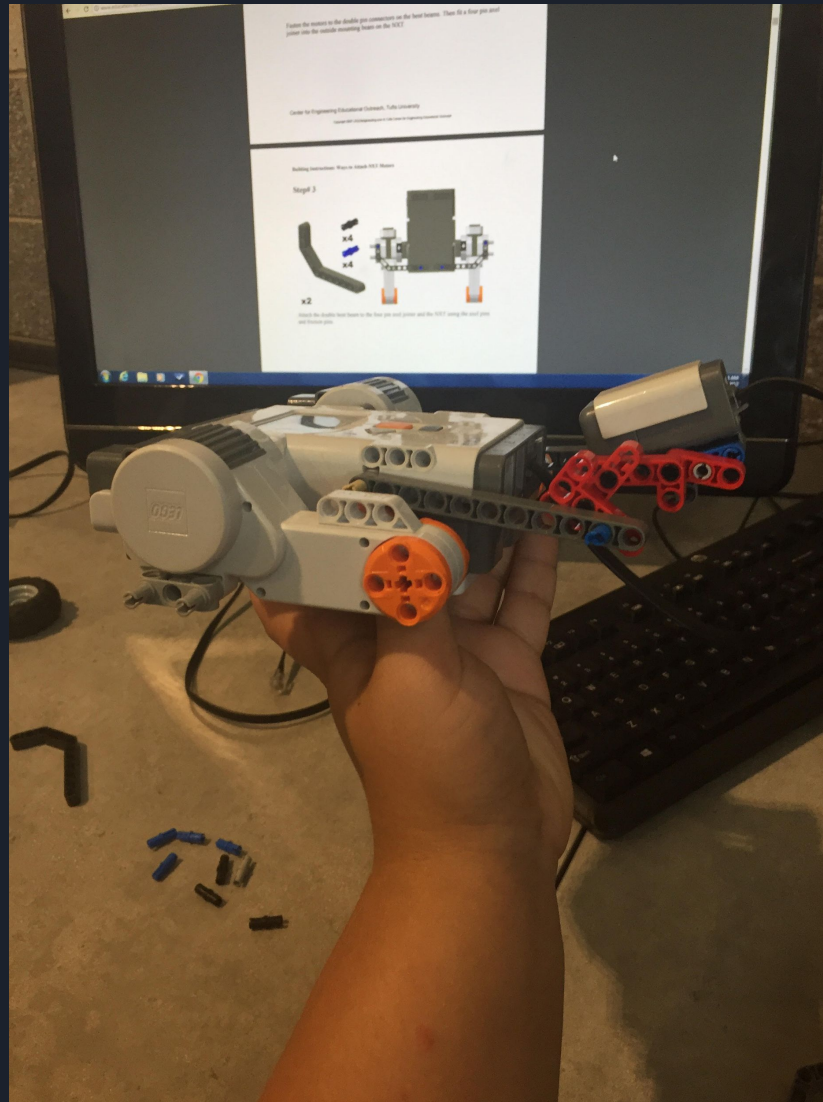
A prototype is constructed based on the design model(s) and used to test the proposed solution. A prototype can be a physical, computer, mathematical, or conceptual instantiation of the model that can be manipulated and tested.

**Evidence** : Execute the plan, (build your robot) modifying as needed.





# 1st picture



# 2nd picture



Communicate the solution(s)

Provide the YouTube link of your video that shows how your robot meets the challenge.

YouTube video link :

## Reflection

Think about your professional destination. What skills and or knowledge are you going to need that you don't have or have enough of. Add a slide and make a list  
Reflect on your latest assignment in robotics and describe how what you just did supports what is on your list.







# Letter

In the light sensor project there is a lot of work for it. If you know how to program the system for the light sensor the project will be easy and you will go right through the it. If you don't know it will be kinda hard to do. we had to program it to follow a line. then we had to program it to go up a ramp. when it gets to the top of the ramp it touches a button and makes a sound. To future student in robots you will have fun in robotics class if you do the project and build your robot correctly.

# youtube video

<https://youtu.be/-Rto2x4oUZQ>

<https://youtu.be/3iV544Tngl4>