

Design Requirements

The design requirements for your project will be unique to your specific problem and the product that you are designing. Therefore, you will develop your own constraints and criteria for this project. Your constraints and criteria should be specific and directly related to meeting the needs of your product's end user.

Example:

If you are designing a baseball bat that meets high school regulations, your design requirements might include the following.

Constraints:

- The bat can not be more than $2\frac{5}{8}$ inches in diameter
- Its “drop” (inches of length minus ounces of weight) must be no more than 3.
For example, a 34 inch bat must weigh at least 31 ounces.
- Made out of a material approved by the league

Criteria:

- Able to hit a baseball without breaking
- Comfortable grip
- Visually appealing

Constraints vs. Criteria	
<i>Constraints</i>	<i>Criteria</i>
Constraints are limits that may hinder your creativity or design freedom.	Criteria are the requirements or specific outcomes that must be met to be successful.
Constraints are restrictions that keep something from being the best that it can be.	Criteria are desirable characteristics that would be preferable in your final design solution.
Constraints are often based on resources available (time, tools, materials, etc.), rules or regulations, and environmental conditions.	Criteria are often based on the goals for your design solution.
<i>Questions to Consider:</i> What might interfere with your creativity? What rules do you need to adhere to? What might make the problem difficult to solve ?	<i>Questions to Consider:</i> What do you want your product to do? What are you trying to accomplish ? How will you determine if your product is successful ?
<i>Examples:</i> budget safety regulations environmental conditions	<i>Examples:</i> visual appeal ease of use comfort

Things to Remember:

- There is no perfect design.
- Different solutions may satisfactorily solve a problem, there is not one correct design solution.
- **The best designs optimize the desired criteria within the given constraints.**