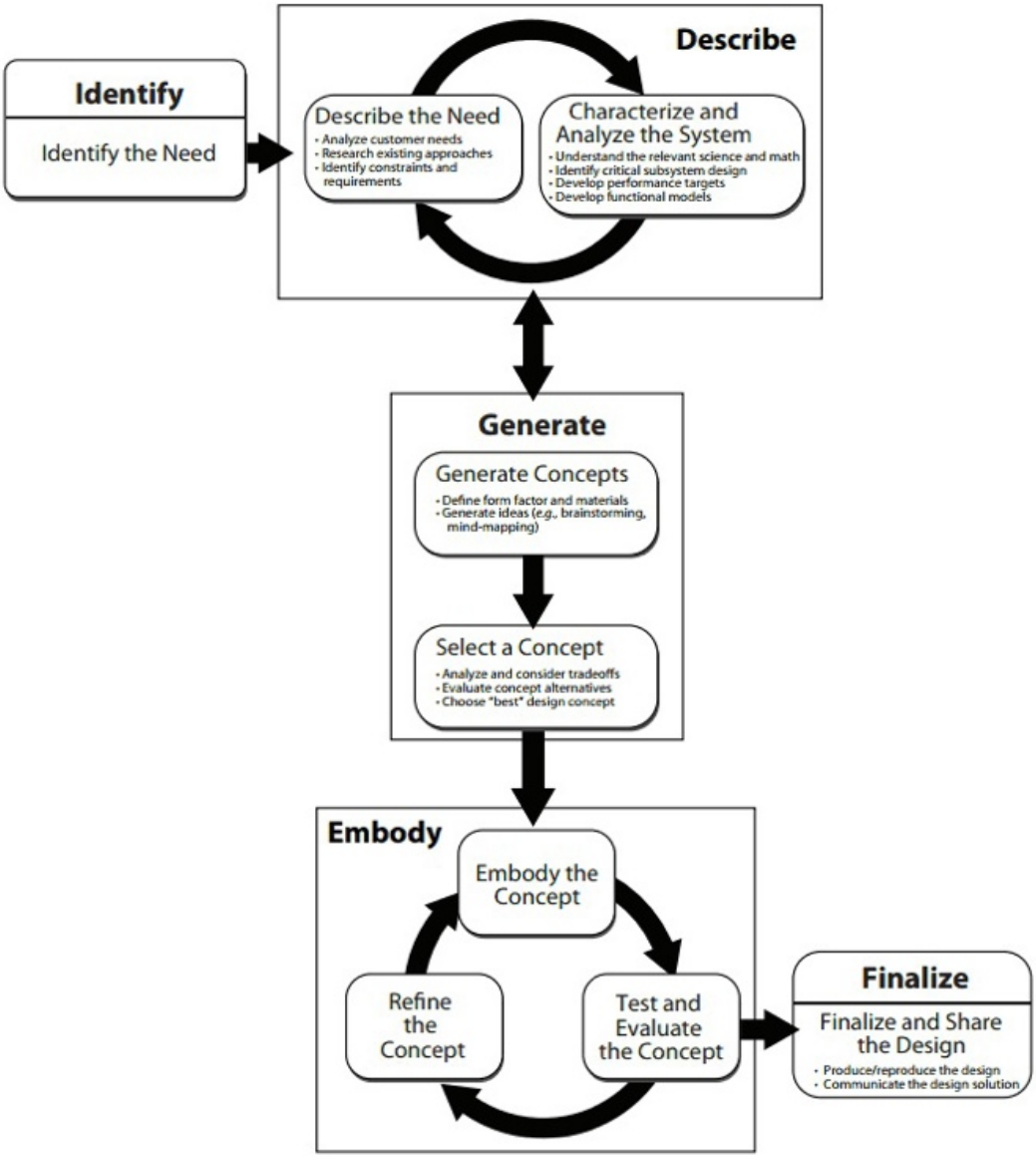

Identify the need

What problem/question/challenge are you trying to overcome?

Create a challenge statement

Ex. Move blocks from loading area to crates as efficiently and as simply as possible

Describe

Describe the need

What needs must we fulfill? ← If we're not fulfilling a need we're gadgeteering not engineering

What approaches already exist?

Qualitative constraints, requirements

Characterize and Analyze the system

Produce a functional model

Quantify constraints, requirements

Divide project into subsystems

Understand equipment available (Tetrix/RobotC)

Generate

Generate Concepts

Brainstorming - subsystem or project ideas

Organize/Group ideas

Concept sketching - bring ideas to life through simulation

Select a Concept

Analyze and compare - binary/weighted pugh charts

Which concept best satifies challenge statement and requirements? and constraints

Embody

Build the concept

Better drawing of design

Assemble materials list

Put it together

Translate function diagram into code

Actions to methods

Properties to variables

Test and evaluate concept

Does the product meet requirements and constraints?

Refine Concept

Probably not, so make changes to design or change req/con

since we made them not someone else

Finalize

Produce a set of building instructions, tips, and BOM

Create a presentation of your process and how your design works

Present to coaches, me, and Mr. Schlenker