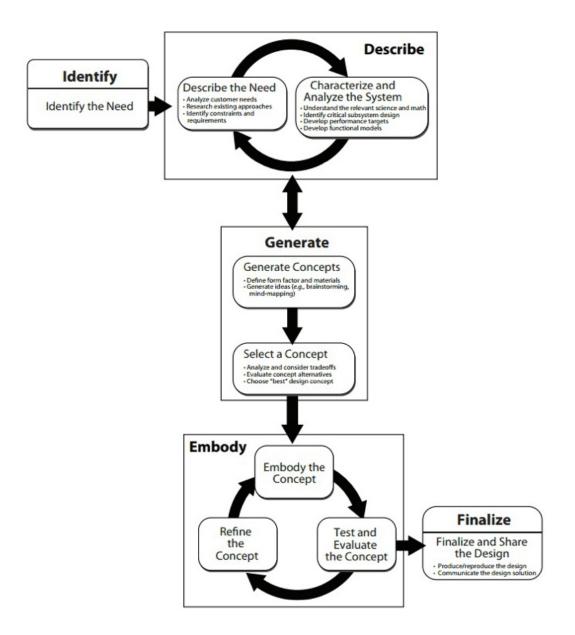
Unit 2: Discovering Design (Pinhole Camera)
Lesson 10: Reflect on Design 2.10.3 Handout 1_Engineer Your World Design Process



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Identify the need
What problem/question/challenge are you trying to overcome?
Create a challenge statement
Ex. Move blocks from loading area to crotes 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 gadgetioring not engineering
What approaches already exist? We're gauge ziting not engineering
Qualitative constraints, requirements
Characterize and Analyze the system
Produce a functional model
Quantify constraints, requirements
Divide project into subsystems
Understand equipment available (Tetrix/Robota)
Generate
Generate Concepts
Brainstorming - subsystem or project ideas
Organize/Group ideas
Concept sketching - bring ideas to life through simulation
Select a Concept
Apply 20 on Consess - linear / Invested Trush checks
Introduce and compare - principle point theres
Analyze and compare - binary/weighted pugh charts Which concept best satisfies challenge statement and requirements?

Fmbook
Build the concept
Better drawing of design
Better drawing of design Assemble materials list
Put it tagether
Translate function diagram into code
Actions to methods
Properties to variables
Test and evaluate concept
Refine Concept Probably not, so make changes to design or change real con Finalize
Probably not, so make changes to design or change real con
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