



Engineering Virtual Learning

HS Introduction to
Engineering Design
Lesson #29

May 14, 2020

Objective/Learning Target:

Students will use Visual Design Elements
& the Design Process to Create a Child's Toy.

(Day 4 of a 4 Day activity)

Day 1 - Research and Design ✓

Day 2 - Gather Materials & Construct ✓

Day 3 - Evaluate and Redesign ✓

Day 4 - Presentation of Product

Learning Practice: Child's Toy Creation

You now have a Child's Toy that you have Designed, Built and Re-Designed, but what do you do with it?

You need to Market it so you can sell it.

Create a Folded Brochure using Word, Publisher, or your own Paper.

<https://www.youtube.com/watch?v=lZltyts11Mg> (folded brochure videos)

<https://www.youtube.com/watch?v=zjpVsUM2MPQ>

Your Goal is to “sell” your item to whoever reads your brochure.

Once you have your brochure finished, present it to a family member to see if they would like your toy after reading your brochure and seeing the prototype.

Reflect on this project in your engineers notebook.

Child's Toy Specifications:

Your toy needs to follow these specifications as closely as possible

1. The toy must be made up of at least 5 parts.
2. The toy must have 1 separate moving parts.
3. The toy must have 1 additional feature that functions as an accessory.
4. The toy should be approximately 6" depth x 6" wide x 6" tall.
5. The toy must comply with U.S. Consumer Safety Commissions child safety regulations.

<https://www.cpsc.gov/Regulations-Laws--Standards/Voluntary-Standards/Topics/Toys>

<http://www.toyassociation.org/ta/advocacy/federal/standards/toys/advocacy/federal/us-safety-standards.aspx>

Visual Principles and Design Elements:

Visual Design Elements:

Eight integral components used in the creation of a design

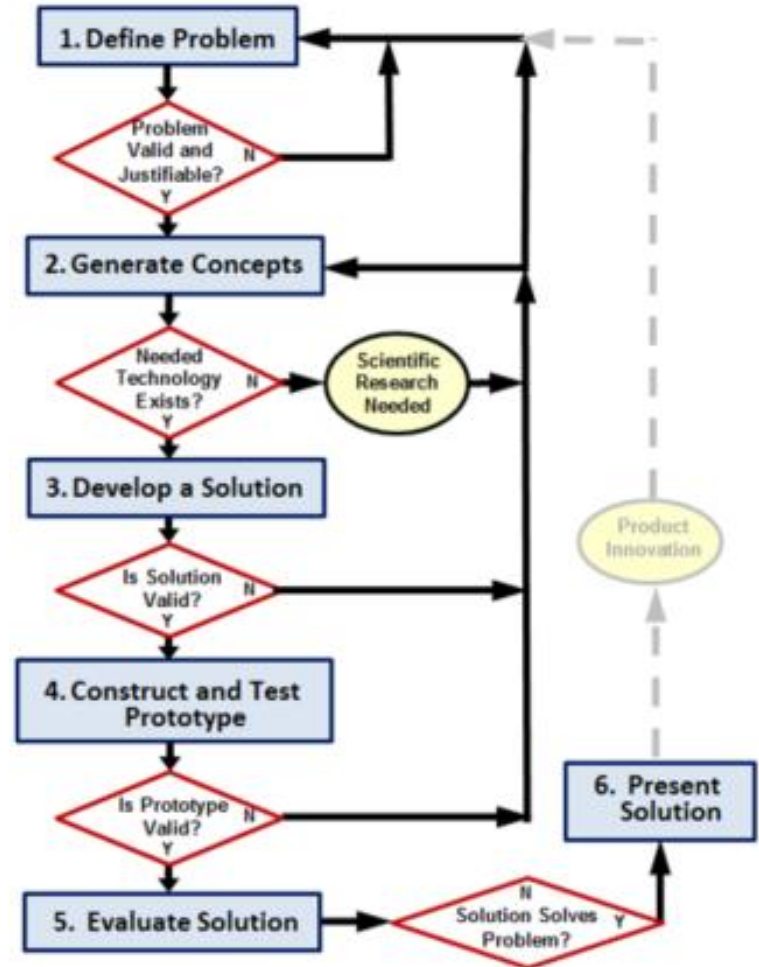
Point, Line, Color, Value, Shape, Form, Space, Texture,

Principles of Design: Many principles add to an interesting design

Balance, Emphasis, Contrast, Rhythm, Proportion, Unity, Economy

Make sure you follow the Design Process.

1. Define the Problem
2. Generate Concepts
3. Develop a Solution
4. Construct and Test a Prototype
5. Evaluate the Solution
6. Present the Solution



Learning Resource Links:

Design Elements:

<https://www.youtube.com/watch?v=JfViOv77pfQ> (PLTW)

https://www.youtube.com/watch?v=JZD_3zp7v2A

Toy Safety:

<http://www.toyassociation.org/ta/advocacy/federal/standards/toys/advocacy/federal/us-safety-standards.aspx>

<https://www.cpsc.gov/Business--Manufacturing/Business-Education/Toy-Safety-Business-Guidance-and-Small-Entity-Compliance-Guide>

<https://www.cpsc.gov/Regulations-Laws--Standards/Voluntary-Standards/Topics/Toys>