



Engineering Virtual Learning

HS Introduction to
Engineering Design
Lesson #28

May 13, 2020

Objective/Learning Target:

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

(Day 3 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

Every Product that has every been created has gone through a “Re-Design” phase.

Watch these videos on Re-Engineering or Re-Constructing products to make them better.

<https://www.youtube.com/watch?v=WbMV9qYIXqM>

<https://www.youtube.com/watch?v=25peayoZOfs>

<https://www.youtube.com/watch?v=Beqcsr1gEHQ>

Document any changes that you would like to make to your Child's Toy after building and testing.
Make those changes and document the results.

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

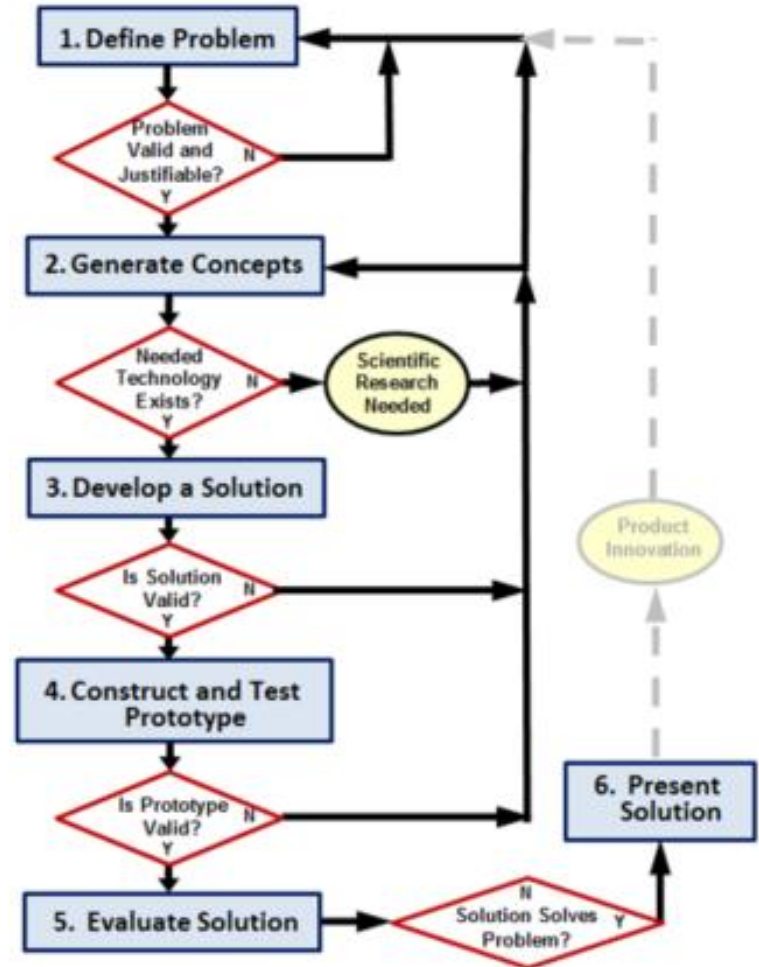
Point, Line, Color, Value, Shape, Form, Space, Texture,

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>