



# One-Finger Coffee Mug

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# Why do this?

This product specifically targets individuals with only one finger, but it allows others with different disabilities to safely and conveniently drink coffee.

# Mission Statement

Our task was to create a product that would allow disabled people that only have one finger on their hand to safely and conveniently drink coffee. By using the engineering process we were able to pinpoint the exact design elements and constraints that would define our mug.

# Past Patents/ Products



T Handle Mug



# Customer Needs

1. Portable (.11)
  - a. Lightweight (.0825,.75)
  - b. Fits cup holders (.0275,.25)
2. User friendly (.41)
  - a. easy to hold (.0615,.15)
  - b. stable (.0615,.15)
  - c. easy to put on (.066,.162)
  - d. doesn't burn their hand (.043,.106)
  - e. easy to clean (.057,.14)
  - f. microwavable (.0185,.045)
  - g. Safe (.103,.25)
3. Flexible (.25)
  - a. able to fit any size (.06,.24)
  - b. keeps temperature stable(.05,.2)
  - c. be used by all age(.055,.22)
  - d. Used by people with other disabilities(0.675,.27)
  - e. stackable(.015,.06)
4. Durable(.19)
  - a. Shatterproof(.07,.368)
  - b. Non-melting(.08,.421)
  - c. Reliant (.04,.211)
5. Environmentally Responsible (.05)
  - a. Recyclable (.05,1)



# Classification Tree



	safe	Dishwasher safe. 100% Acrylic
One Finger Mug		Heat resistant, thick walls
	Light weight	ABS Plastic (.038 pounds per square inch)
		Paper Cups

# Classification Tree



	Non-melting	Microwavable (starbucks)
		Glass
One Finger Mug	Shatter proof	Shatter Proof Glass (100% Acrylic)
		Shatter Proof Plastic
	Usable for people with other disabilities	Fits to all size
		only requires wrists

# Concept Selection (Screening)

1. (1st) Dishwasher safe, plastic lightweight, microwavable, only requires wrist.
2. (2nd) Dishwasher safe, paper lightweight, microwavable, fits to all size
3. (2nd) Dishwasher safe, plastic lightweight, microwavable, shatter proof plastic, fits to all size
4. (2nd) Heat resistant, plastic lightweight, microwavable, shatter proof plastic, fits to all size
5. (2nd) Dishwasher safe, plastic light weight, shatterproof plastic, only requires wrist.





# Concept Selection (Scoring)

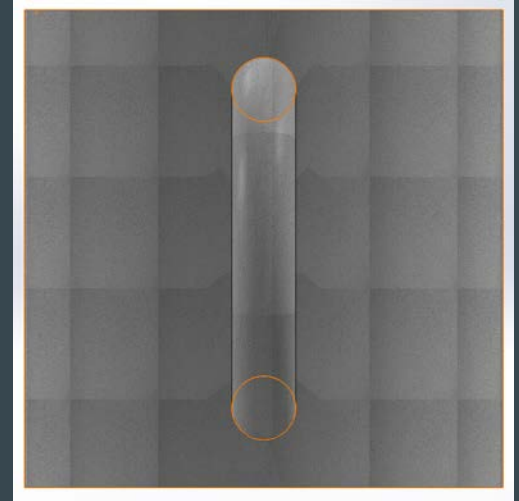
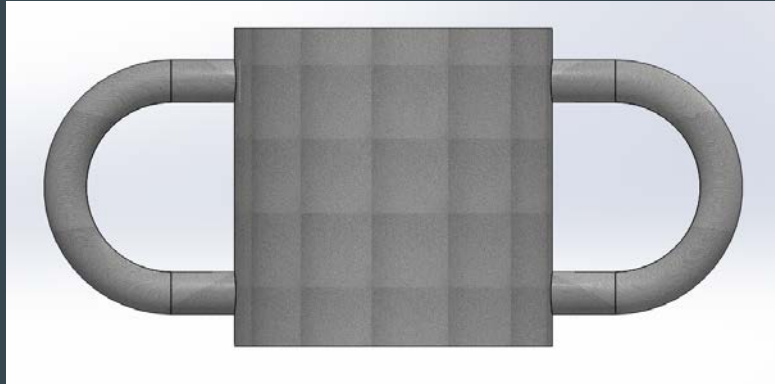
(2nd) Dishwasher safe, plastic light weight, microwavable, shatterproof plastic, only requires wrist.

Total Score 3.55



# Prototype and Testing

- White Acrylic  
Texture



# Engineering Ethics

Consequentialism:

Materials impact on environment

Reusability



# Difficulties

Prototyping with a worse type of clay at first

Personally have no relation to having only one finger

Trying to match the customer needs

# What we learned

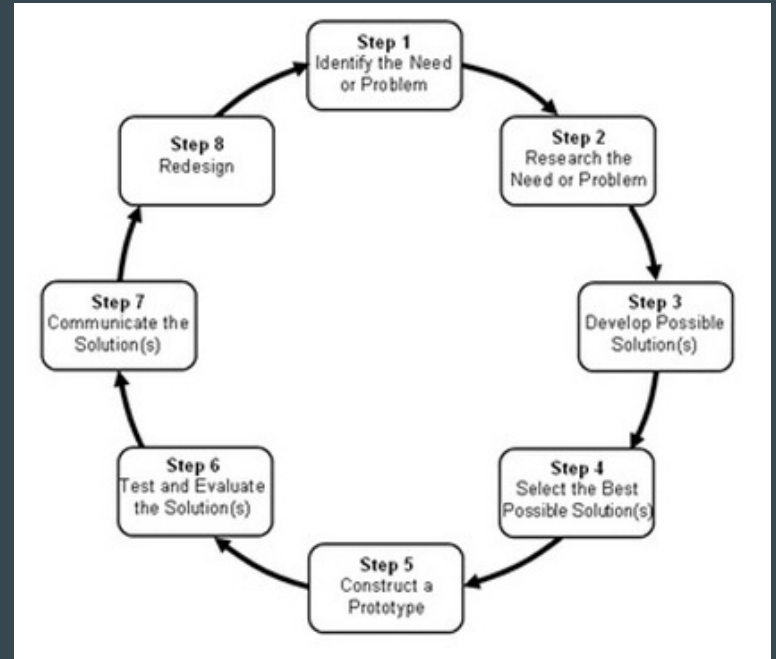
Engineers complete complex process

Initial model almost never final product

Many factors to consider

Tedious process

Group



# Citations

Bumpy white texture. (n.d.). Retrieved October 6, 2015.

Miller, K. (2010). United States Patent No. US 2010/0102070 A1 .