product
form
Prototyping Techniques
Next Play Testing

MITxMake, April 21st
Z Center
More details to come!
Product form

Sensory perception

Why do we like certain things?

Is this subjective?
Power of form

Pleasing forms enable you to work better. Products and systems that make you feel good are easier to deal with and produce more harmonious results.

—Adapted from Norman
Which do you prefer?
Which do you prefer?
People will buy what makes them feel better as long as they believe it works well enough.
People will buy what makes them feel better as long as they believe it works well enough and if it looks really good, it doesn’t even need to “function”
Importance of product form

Makes me feel a certain way about myself

Makes others feel certain ways about me

Shelf presence
Complexity of product form

Laymen

Experts
Complexity of product form

Laymen

Experts
Complexity of product form

Laymen

Experts

Not much!
Syntax
consistency of form vocabulary
Syntax

consistency of form vocabulary
Syntax
consistency of form vocabulary
Syntax
form language
Syntax

form language

\[ C^0 \]

Positional

\[ C^1 \]

Tangent

\[ C^2 \]

Curvature
Symmetry

it is natural to find symmetry aesthetically pleasing
Symmetry

it is natural to find symmetry aesthetically pleasing

TOYOTA
Symmetry
why?
Symmetry and Balance

symmetry

balance
Symmetry and Balance
Balance
Proportion
Golden Ratio 1: 1.618
Proportion + Form language
Consistency!
Form

Color
Color

- Primary
- Complementary
- Secondary
- Tertiary
- Analogous

Contrasting

Complementary
Color Pairing

Complementary

Analogous
Color Branding

Coca-Cola (analogous)
Target (complementary)
John Deere (analogous)
The Home Depot (complementary)
IKEA
Color Branding
Color in Toys

*Gender Assignment based on findings of Blakemore and Centers in “Characteristics of Boys’ and Girls’ Toys”, 2005*
Pink vs. Blue

Where does that come from?

Mamie Eisenhower, 1953

Gender-based color differentiation began in 20th century

a masculine color (1800s)
Form and color in Toys!
Form and color in Toys!
Design for different ages

< 1 Year Old
Gross-Motor & Visual Development
Recognizing Faces

Bright Colors (especially red and yellows)

Contrasting

Soft, simple forms, rounded corners & easy grips
Design for different ages

1-3 Years Old

Understanding Cause and Effect
Entering Pretend Play

Bright & Contrasting Colors

Complex, more detailed forms

Toys that represent familiar objects
Design for different ages

4-7 Years Old

Understanding Representation
Developing rules and logic

Objects with more realistic detail

Colors that match familiar objects
Design for different ages

4-7 Years Old

Understanding Representation
Developing rules and logic
Design for different ages

8-12 Years Old
Skill Development
Shift from cartoons to real life

Objects with even more detail

More complex color schemes appropriate to product
Now its your turn!

For your team’s toy concept, sketch three versions

One for a 2 year old, one for a 6 year old, one for a 12 year old

Consider form, color, and details!

Bring them to your lab!
Form Color
Form

Color

+ more
Multi-sensory products
Multi-sensory products

Taste + Smell
Multiple senses
Narrative + sound (or not)
Multiple senses

Sound + sight
Lab this week

Mockup work time!

Bring laptops for Solidworks
Mockup Consulting Review

Next Wednesday April 18\textsuperscript{th}, during lecture

As a team, build two more-refined models:

- a works-like
- a looks-like

what's the main technology?
Mockup Consulting Review

Next Wednesday April 18\textsuperscript{th}, during lecture

As a team, build two more-refined models:

- a works-like

+ a looks-like

At least one model is play-able for play testing on April 21\textsuperscript{st}
Attendance

Showing up is 80% of life.
—Woody Allen

Toy Design is 125% of life.
—2.00b Staff

∴ Showing up is 100% of Toy Design.
—Transitive Property

Attendance in lab is critical to the course, and three missed or late arrival at labs (more than 15 minutes) without prior arrangement will result in an F grade.
product form questions?