

Product Design

OIDD 415/515
MEAM 415
IPD 515

**Basics of Design
& Aesthetics**

Product Design

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IPD 515

- **What is “Good Design?”**
- Basics
- 3 Dimensional Design

**Good design can be achieved
through following established
conventions and rules of how we
psychologically process what we
see.**

*We Dislike
Uncertainty.*

Product Design

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- What is “Good Design?”
- **Basics**
- 3 Dimensional Design

Basics

Building Blocks

- **Line**
- **Shape**
- **Value**
- **Color**
- **Gestalt Principles**

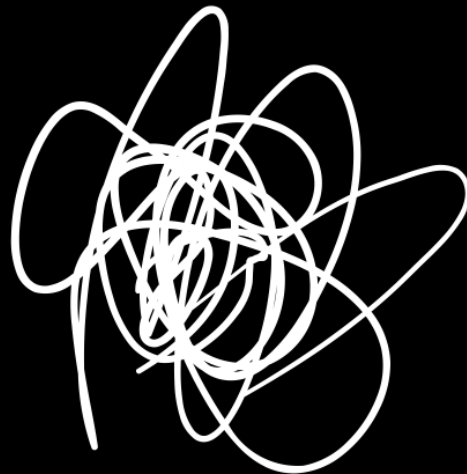
Line: the most basic element, a descriptor of many things



weight

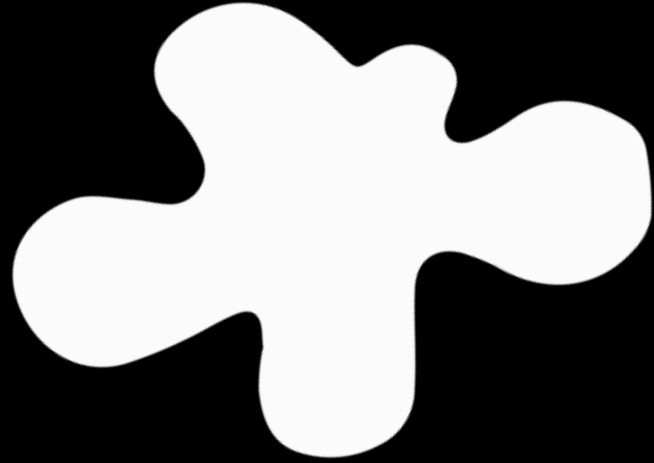
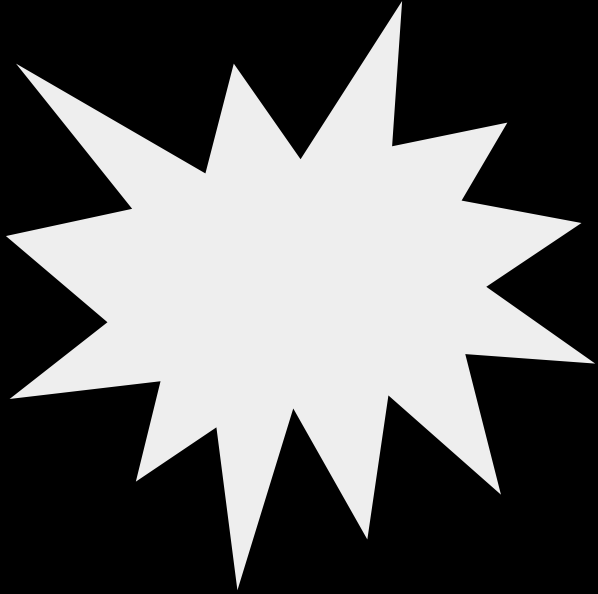


organic / angular

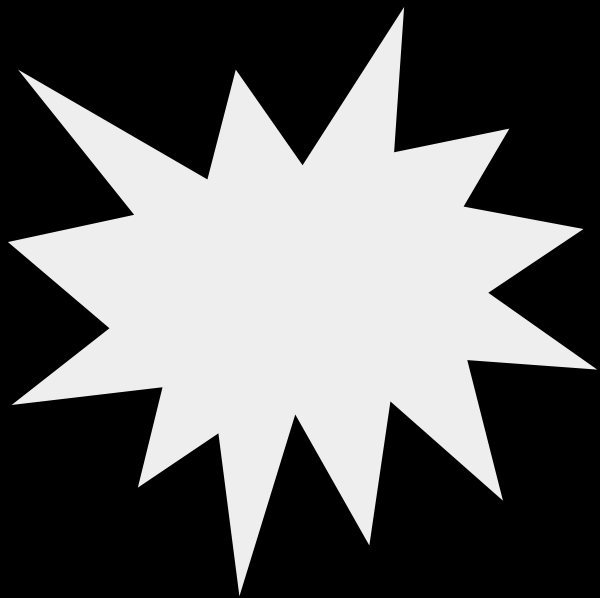


energy / emotion

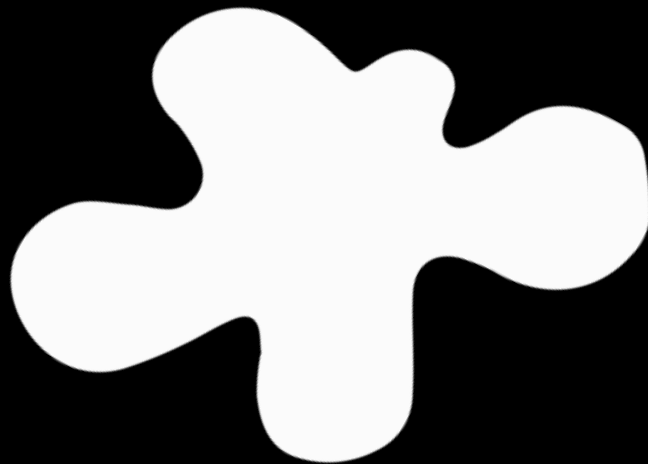
Shape: energy & emotion



Which is “Bouba” and which is “Kiki”?



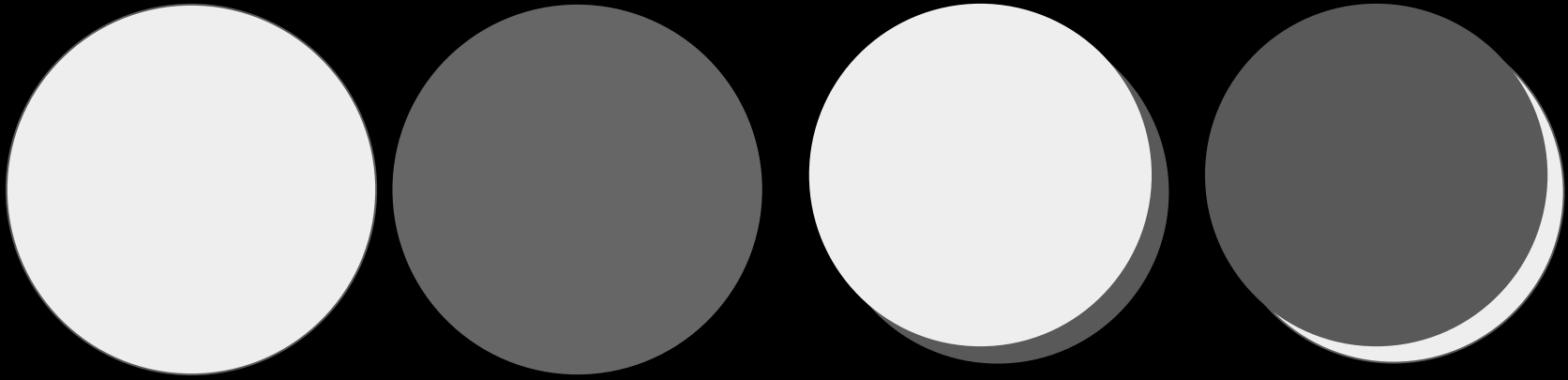
(left)



(right)

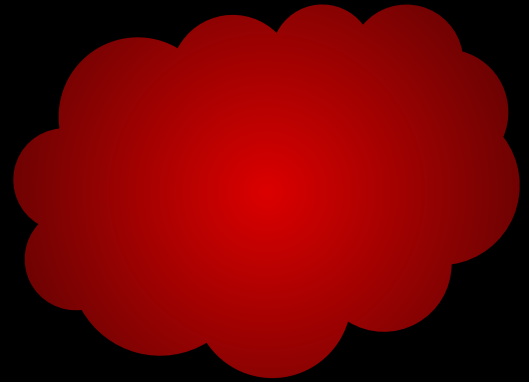


Value: relative darkness and lightness of shapes



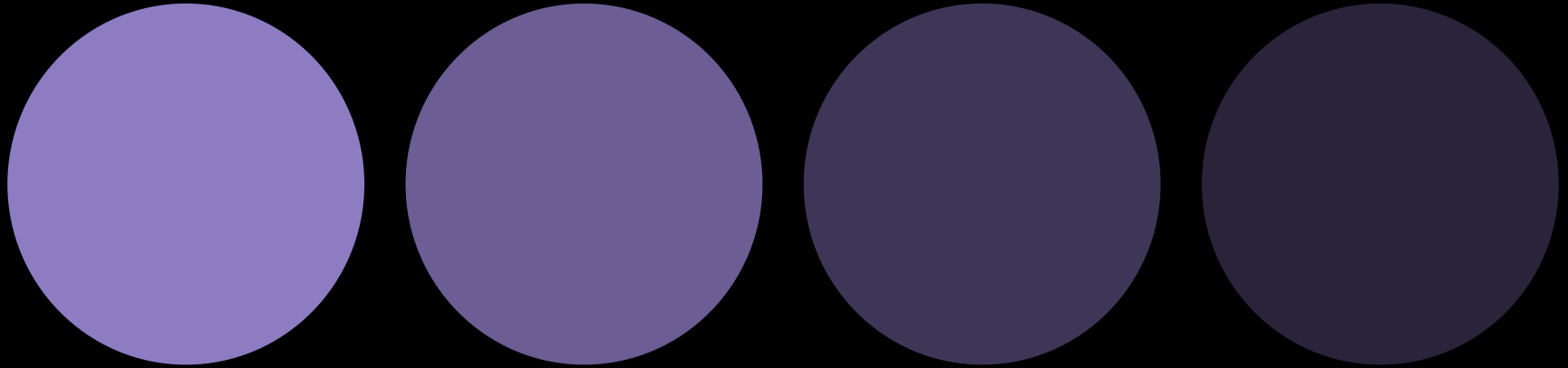
lighter colors tend to come “forward”

Color:



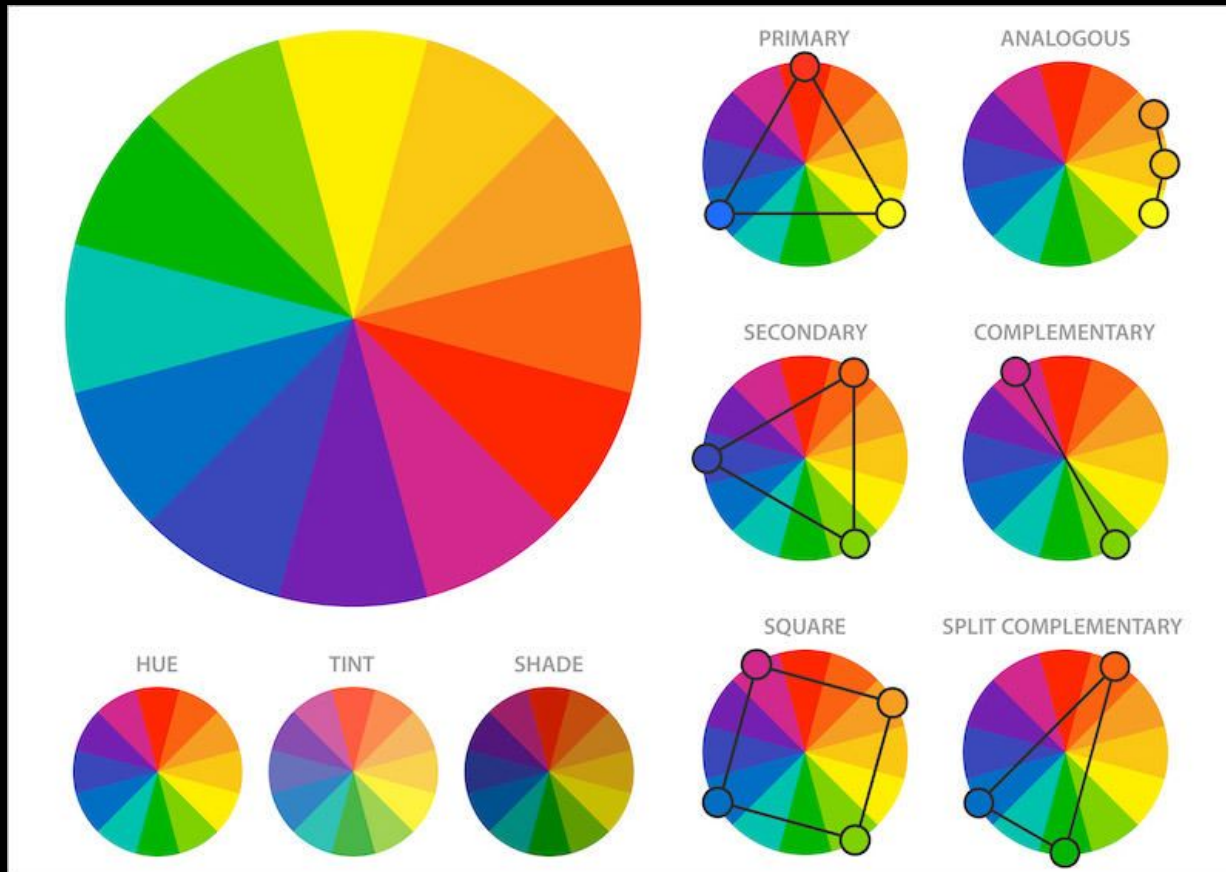
color can prompt us to react differently

Color: depth and focus



similar to value, can create depth

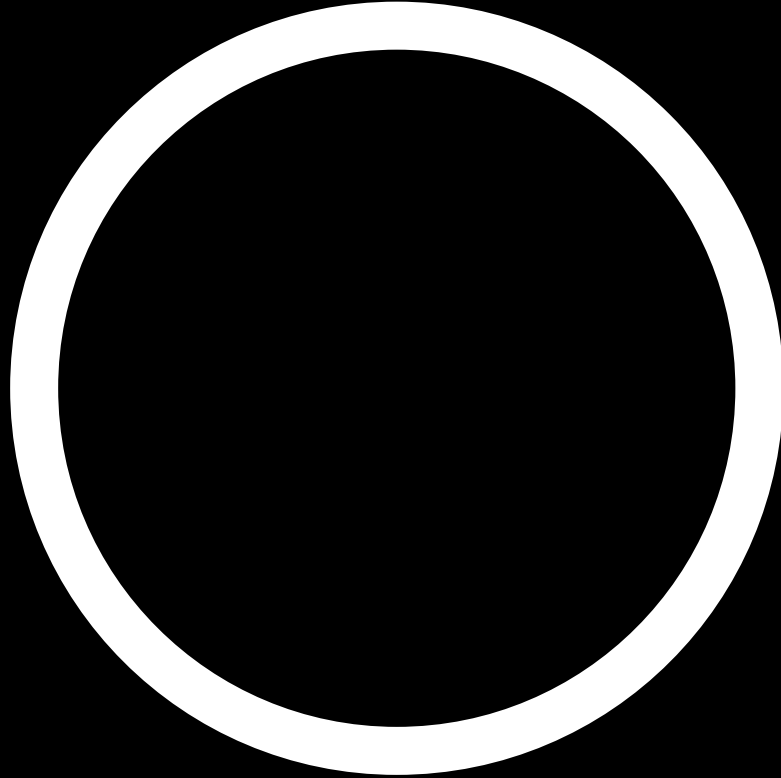
Bonus! Color compositions



Gestalt Principles:

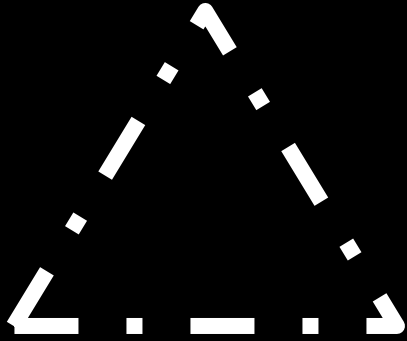


Gestalt Principles:

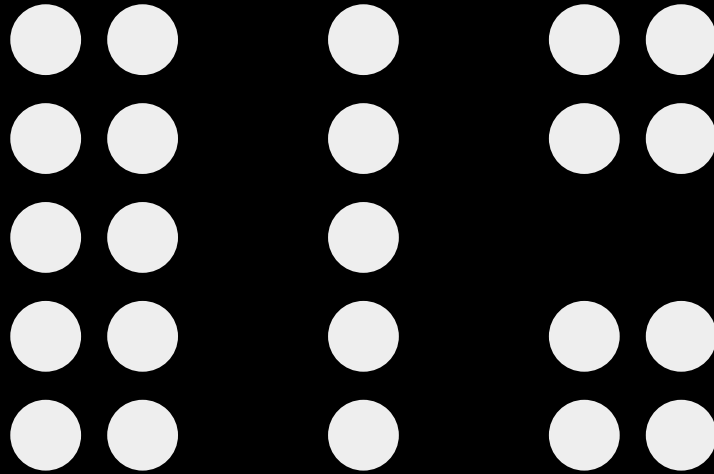


Gestalt Principles: we innately close gaps, create connections, and infer meaning from the relationships between elements of design.

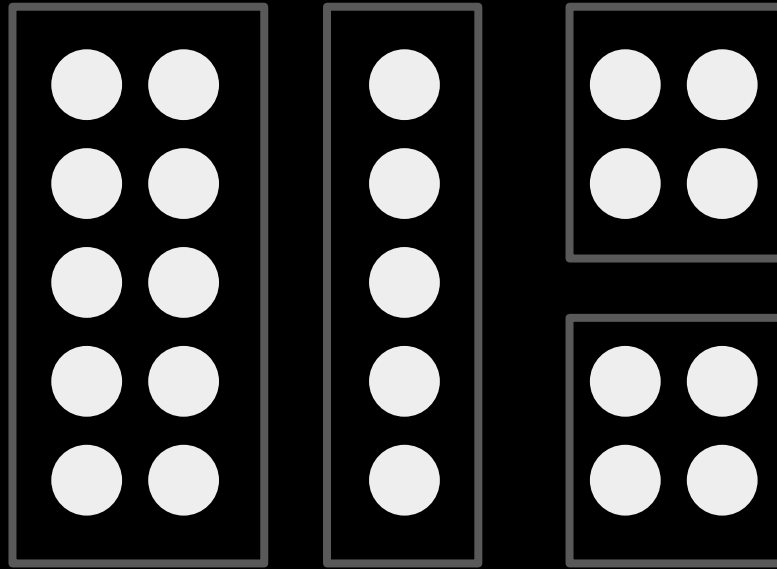
Gestalt Principles: Closure, we prefer completeness



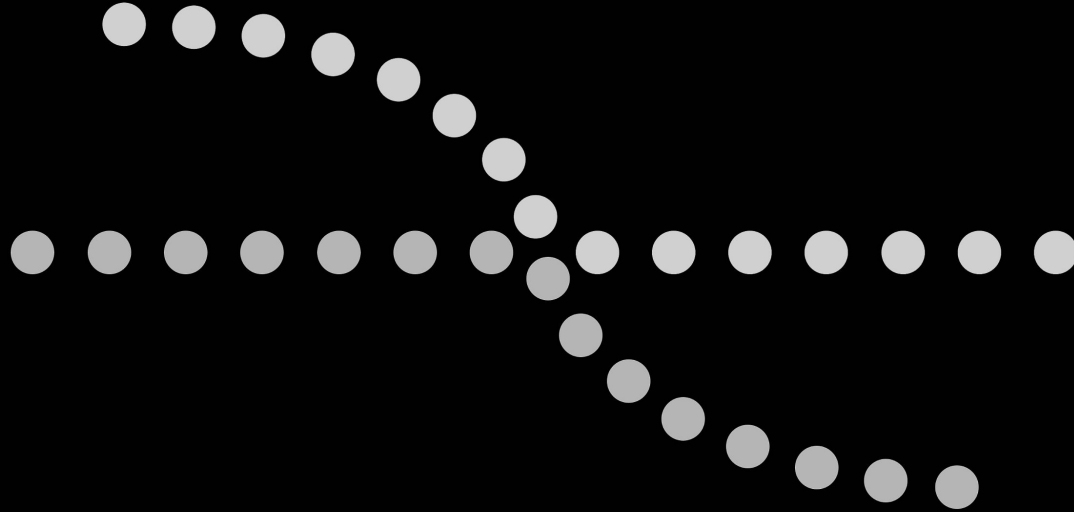
Gestalt Principles: Proximity



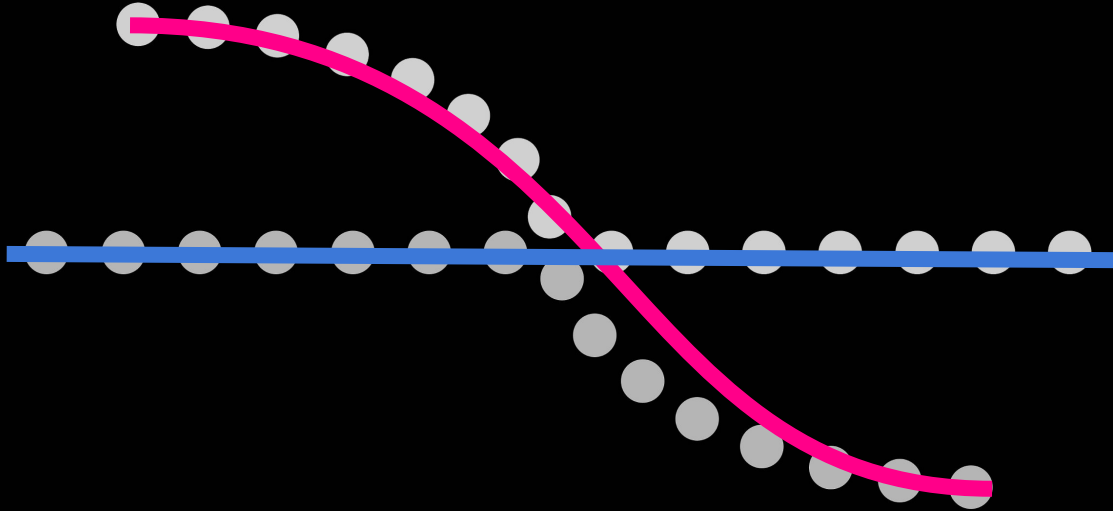
Gestalt Principles: Proximity, elements that are close together create groups



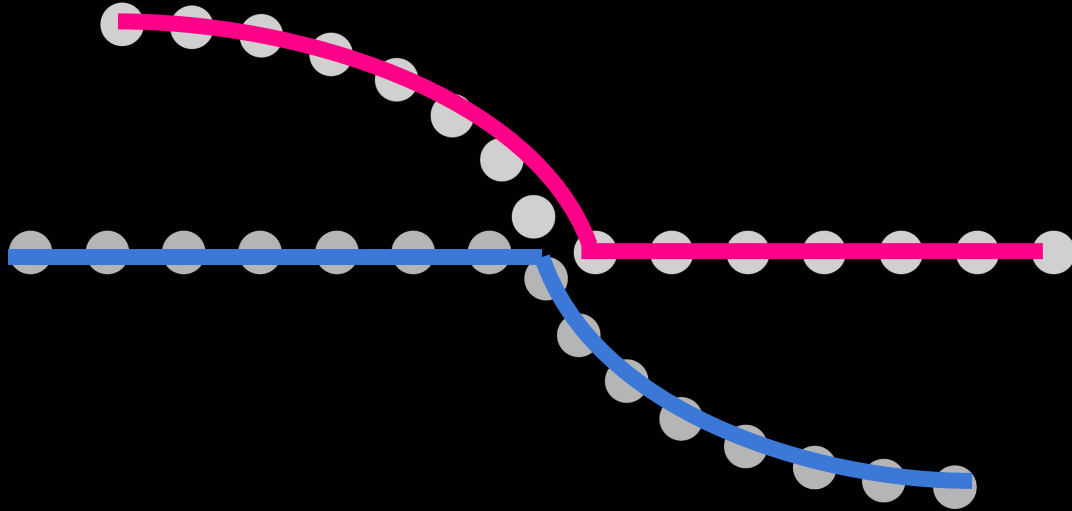
Gestalt Principles: Continuation: prefer to see a continuous flow of visual elements rather than separated objects



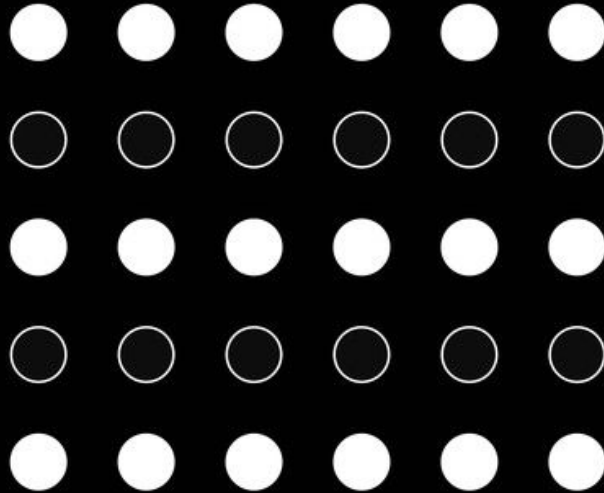
Gestalt Principles: Continuation, prefer to see a continuous flow of visual elements rather than separated objects



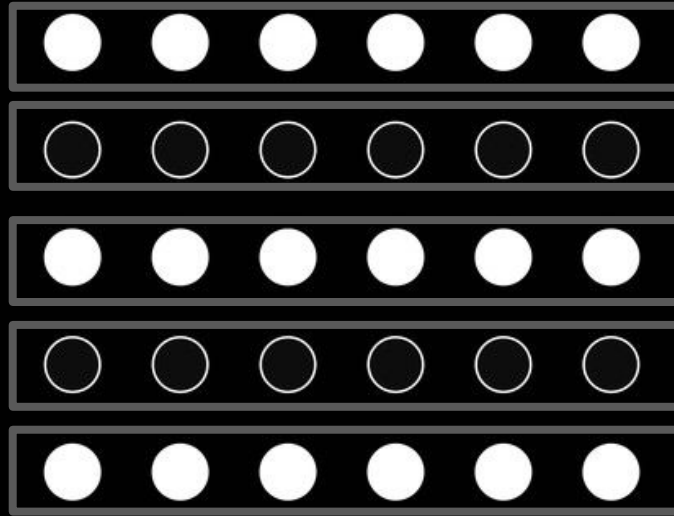
Gestalt Principles: Continuation, prefer to see a continuous flow of visual elements rather than separated objects



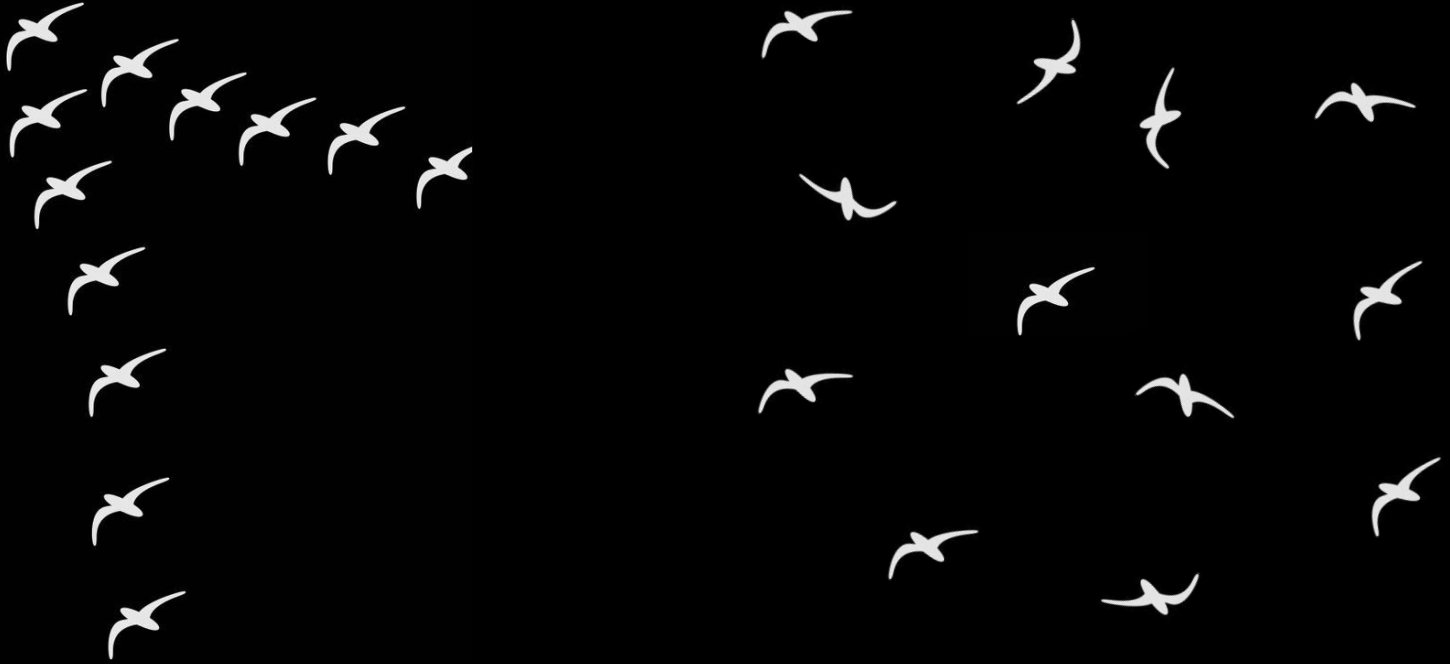
Gestalt Principles: Similarity



Gestalt Principles: Similarity, elements that look similar create groups



Gestalt Principles: Common Fate, when elements point in the same direction we see them as a group



3Dimensional

Building Blocks

- Form Language
- Proportion
- Texture
- Material
- Color

Best Practices

- Balance
- Repetition and Rhythm
- Proportion
- Gestalt Principles

Form Language: what type of elements or “rules” does the form inhibit



Philippe Starck - Juicy Salif



Aldo Rossi - Il Conico Kettle

Material: creates meaning and emotion, augments functionality



preciousness



whimsy



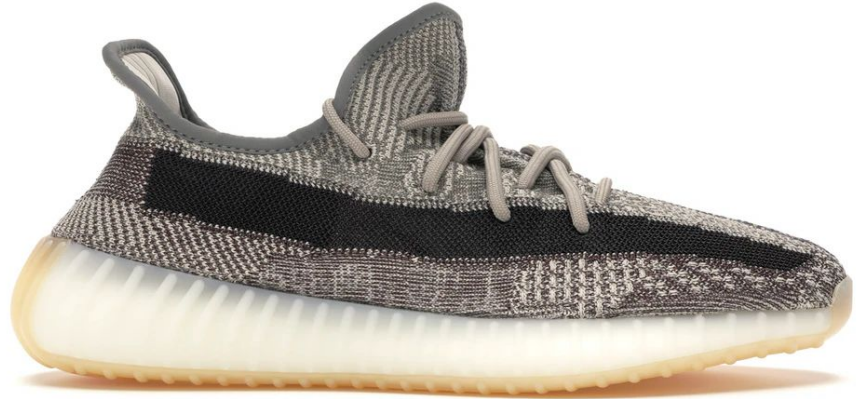
comfort

Texture: creates emphasis, distinctiveness, and indicates affordances (how to use it)



Yuzo Watanabe for Global Knives, 1985

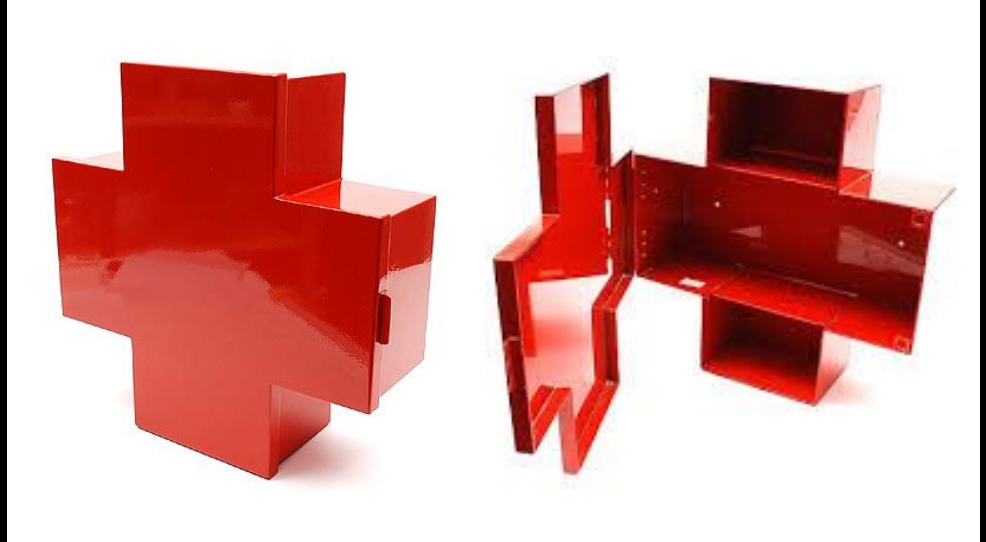
Yeezy FZ1267, 2020



Color: emotional response



Karim Rashid for Method



*Thomas Ericksson for Cappellini, Red
Cross Medicine Cabinet, 1992*

Color: emotional response should match context



3Dimensional

Building Blocks

- Line & Silhouette
- Form Language
- Proportion
- Texture
- Material
- Color

Best Practices

- Balance
- Repetition and Rhythm
- Proportion
- Gestalt Principles
- Material
- Juxtapositions

Balance: a/symmetry



Charles & Ray Eames, Molded Plastic Side Chair c. 1950



Charles & Ray Eames, La Chaise 1948

Repetition: rhythm, pattern, flow

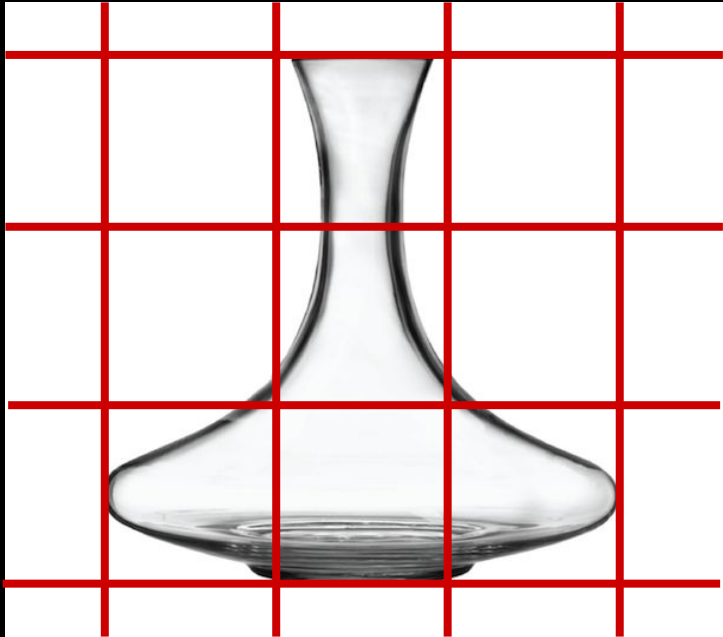


Marc Newson for Magis, "Dish Doctor", 1998



Frank Gehry for Vitra, "Wiggle Chair", 1972

Proportion: Logical proportional relationships (Odd Numbers, Thirds)



Carafe Surcouf (1950s) - La Rochere Design Team



La Conica - Aldo Rossi

Gestalt Principles: *Grouping of Elements*

*Dieter Rams for Braun,
ET66 Calculator, 1987*



proximity & similarity

Material Juxtapositions: interest and affordance

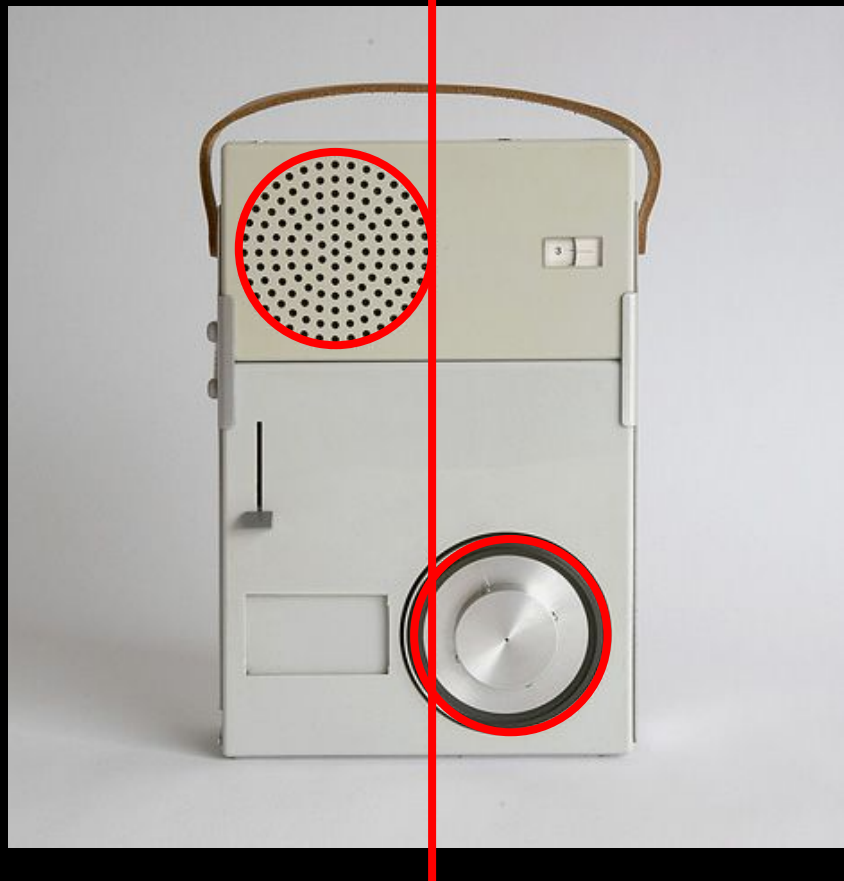


Deconstructing the Designed World



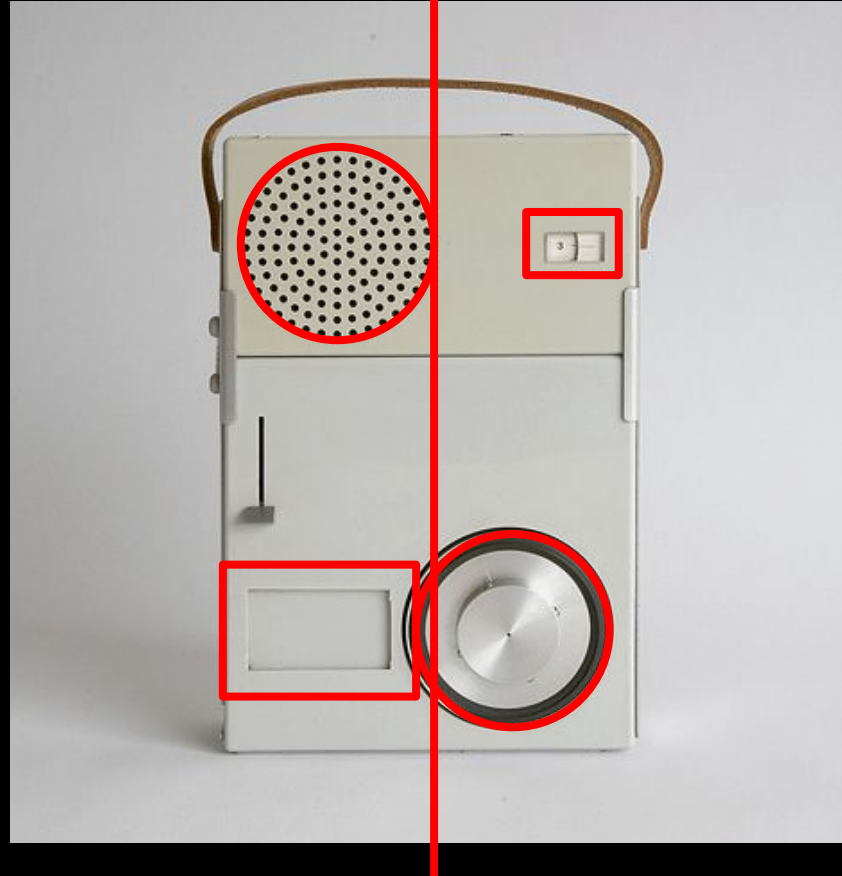
TP 1 radio/phono combination, 1959, by Dieter Rams for Braun

Balance



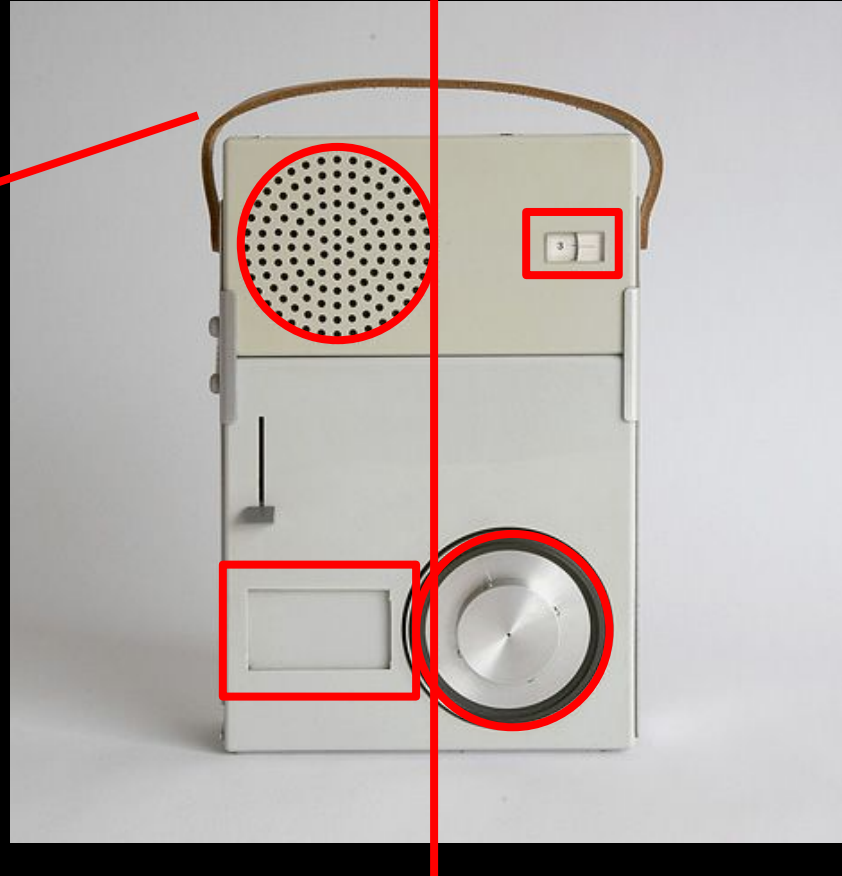
TP 1 radio/phono combination, 1959, by Dieter Rams for Braun

Balance Repetition



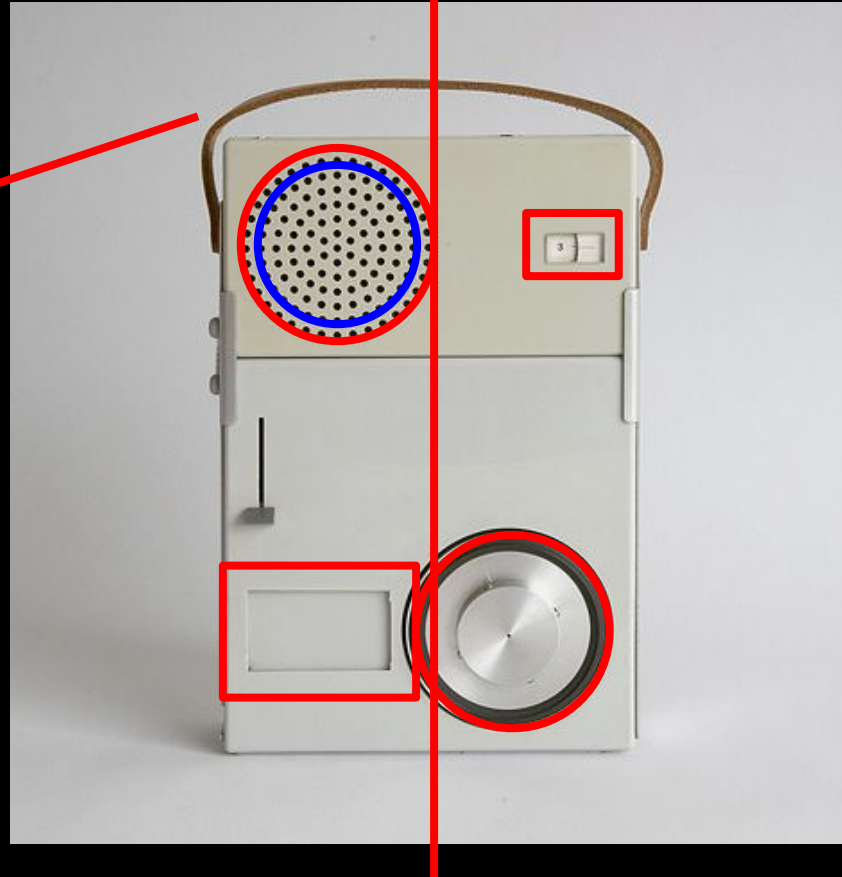
TP 1 radio/phono combination, 1959, by Dieter Rams for Braun

Balance
Repetition
Material



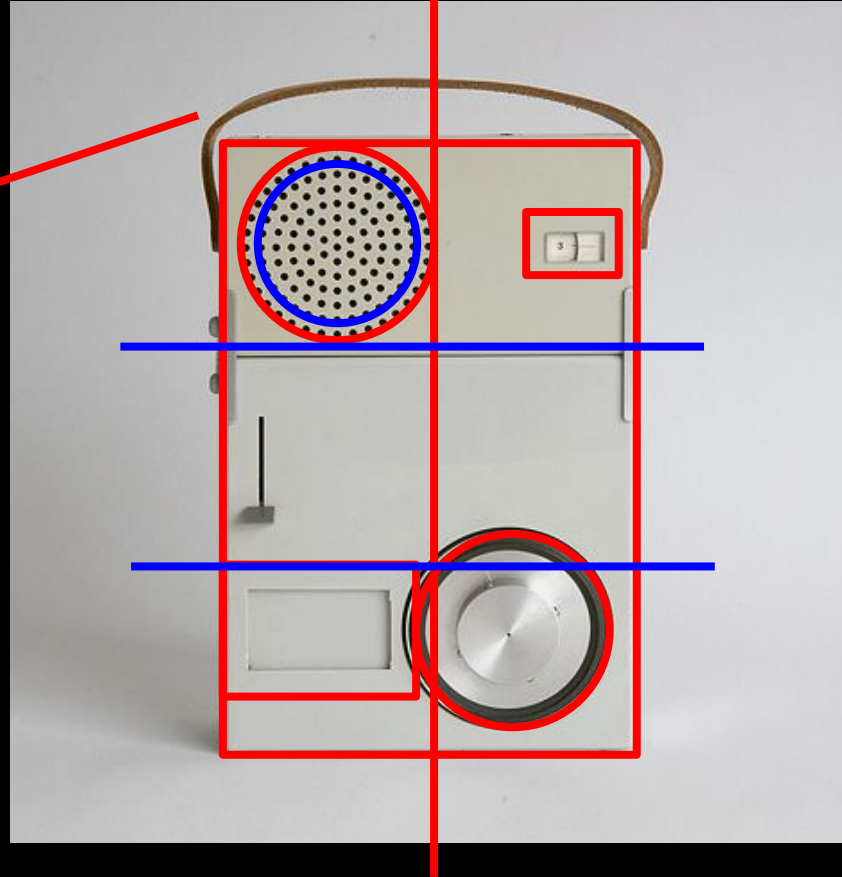
TP 1 radio/phono combination, 1959, by Dieter Rams for Braun

Balance
Repetition
Material
Gestalt



TP 1 radio/phono combination, 1959, by Dieter Rams for Braun

Balance
Repetition
Material
Gestalt
Proportion



TP 1 radio/phono combination, 1959, by Dieter Rams for Braun

1958



2001



Key Takeaways

- **“Good Design” follows an established set of rules:** use basic building blocks of design + best practices
- **Aesthetic design choices should all be intentional:** every line, shape, color, form, etc should have a reason behind it
- **Aesthetics can convey an infinite amount of things to the user:** what a product is, how to use it, and how it makes us feel

Deconstructing the Designed World

- Get together with your table and grab a product
- Deconstruct the design of your product (next slide)
- Is it beautiful or ugly?
- If it's ugly, how would you improve it?
- How does it make you feel?

- **Line**
- **Shape**
- **Value**
- **Form Language**
- **Proportion**
- **Texture**
- **Material**
- **Color**

- **Balance**
- **Repetition and Rhythm**
- **Proportion**
- **Gestalt Principles**
- **What emotion does it evoke?**

Is it beautiful or ugly?
What would you change?



4:46

Product Design

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1. Empathy
2. Define
- 3. Ideate**
4. Prototype
5. Test

Coming Up:

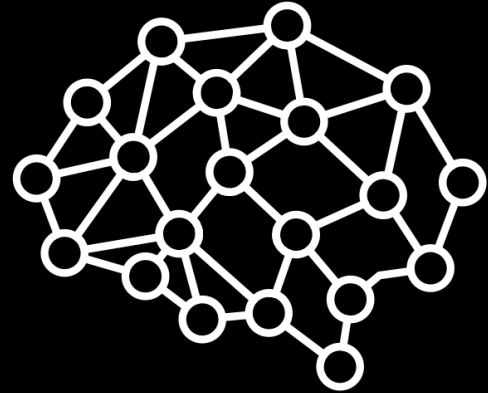
- Between this class and next class: submitting 5 ideas to Darwinator and rating 50 ideas
- Choose your best idea and prepare a pitch for next class

Brainstorming

- Think back to your user research activity, the insights you identified, and the In Way Way Might We Statements you formulated.
- Draw (sketch pictures!) of physical products that solve the problem you identified.
- Remember project criteria: college student market, retails for under \$50, less than ten components

Brainstorming Rules

- Defer judgement.
- Encourage wild ideas.
- Build on the ideas of others.
- Be visual.
- Go for quantity.



....the best ideas generated by the hybrid structure are better than the best ideas generated by a team structure. This result is driven by the fact that the

...hybrid structure generates about three times as many ideas per unit of time, and that these ideas are of significantly higher quality on average.

Up Next...

5

**Minutes
Individual**

20

**Minutes
Group**

(Get something to draw with and something to draw on)

5 Minutes for Individual Ideation



Think back to your insights and needs!

- Draw pictures - no words!!
- Go for Quantity
- Go for wild ideas!

20 Minutes for Hybrid Ideation

- Build on each other's ideas
- Defer judgement
- Encourage wild ideas!



Coming Up

- **This is a big week with lots to do**
- **Next class is Opportunity Pitch!**
- **Submitting and evaluating ideas in Darwinator**
 - **Everyone will get an email after class**
 - **Username should be your PENN EMAIL**

Deliverable 1

- **SUBMIT 5 ideas to Darwinator**
 - **For Monday section - due Thursday at midnight**
 - **For Tuesday section - due Friday at midnight**
 - **For Wednesday section - due Saturday at midnight**

Deliverable 2

- **EVALUATE at least 50 ideas to Darwinator**
 - **For Monday section - due Saturday at midnight**
 - **For Tuesday section - due Sunday at midnight**
 - **For Wednesday section - due Monday at midnight**

Deliverable 3

- **Opportunity Pitch Slide**
 - **Due day of your section at 10 AM! No exceptions!**
- **Submit a 2 page PDF, exported from Powerpoint or Google Slides:**
 - **Page 1: Your name, a descriptive title, outline your research and product idea**
 - **Page 2: Explain your product idea with a sketch**
 - **No videos or animations**
- **You will have 60 seconds to pitch! Practice!**

Deliverable 3

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 - **Page 2: Explain your product idea with a sketch**
 - **No videos or animations**
- **You will have 60 seconds to pitch! Practice!**

All Deliverables

TOTAL LIST:

- **Submit 5 ideas to Darwinator**
- **Rate 50 ideas in Darwinator**
- **Opportunity Pitch Slides**
- **Lecture: Far Horizon Innovation**