

# Introduction

The design process is a mix of intuitive and deliberate actions. Starting a project can include personal rituals like a long walk or a hot shower, or structured endeavors like interviewing the client or distributing a questionnaire. Many designers begin with *brainstorming*, an open-ended search for initial ideas that helps refine the problem and broaden how one thinks about it.

Brainstorming, invented in the 1950s, quickly became a popular way to help people think creatively—even people who don't consider themselves creative at all. Brainstorming remains a powerful tool, but it is just the beginning in a designer's quest for useful and inspiring ideas. This book explores over two dozen methods for thinking and making, organized around the three main phases of the design process: defining problems, getting ideas, and creating form. You can mix, match, and adapt these techniques to fit the projects and personalities at hand.

Nearly any person can learn to improve his or her creative abilities. Talent may be a mysterious entity, yet the creative process tends to follow predictable pathways. By breaking down this process into steps and implementing conscious methods of thinking and doing, designers can open their minds to vibrant solutions that satisfy clients, users, and themselves.

Design is a messy endeavor. Designers generate countless ideas that don't get used. They often find themselves starting over, going backward, and making mistakes. Successful designers learn to embrace this back-and-forth, knowing that the first idea is rarely the last and that the problem itself can change as a project evolves.

This book reflects the diversity of contemporary graphic design practice. Designers today work in teams to address social problems and business challenges. They also work individually to develop their own visual languages through the creative use of tools and ideation techniques. In classroom settings, design training tends to emphasize personal development, owing to the structure of schools and the expectations of students. In the workplace, however, collaboration is the norm, demanding designers to continually communicate with clients, users, and coworkers. The exercises featured in this book include team-based approaches as well as techniques that help designers expand their individual creative voices.

"Once a new idea springs into existence it cannot be unthought. There is a sense of immortality to a new idea."

Edward de Bono

The concept “design thinking” commonly refers to the processes of ideation, research, prototyping, and user interaction. Alex F. Osborn's *Applied Imagination* (1953) and Edward de Bono's *New Think* (1967) helped explain and popularize methods of creative problem solving. *The Universal Traveler*, published by Don Koberg and Jim Bagnall in 1972, presented readers with numerous ways to embark on the nonlinear path to problem solving. Peter G. Rowe applied the term design thinking to architecture in 1987. More recently, Tom Kelley, Tim Brown, and their colleagues at the design firm IDEO have developed comprehensive techniques for framing problems and generating solutions, emphasizing design as a means for satisfying human needs.

While some of these approaches encompass design in the broadest sense, our book focuses on graphic design—as a medium and as a tool. Ideation techniques often involve capturing ideas visually: making sketches, compiling lists, diagramming relationships, and mapping webs of associations. All of these modes of inquiry are forms of graphic expression—a point made in Dan Roam's excellent book *The Back of the Napkin* (2008). Designers of products, systems, and interfaces use narrative storyboards to explain how goods and services function.

In addition to presenting techniques for framing problems and generating ideas, this book looks at form-making as an aspect of design thinking. Whereas some advocates of design thinking de-emphasize the formal component of design, we see form-making as a crucial element of the creative process.

This book was authored, edited, and designed by students and faculty in the Graphic Design MFA program at Maryland Institute College of Art (MICA). *Graphic Design Thinking: Beyond Brainstorming* is the fifth in a series of books published by Princeton Architectural Press in collaboration with MICA's Center for Design Thinking. Producing these books helps students and faculty expand their own knowledge of design while sharing ideas with a community of designers and creative people working around the world. Our classrooms are practical laboratories, and these books are the results of our research. *Ellen Lupton*

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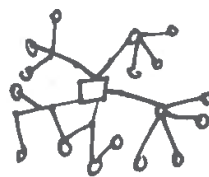
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## DEFINING THE PROBLEM



Brainstorming



Mind Mapping



Interviewing

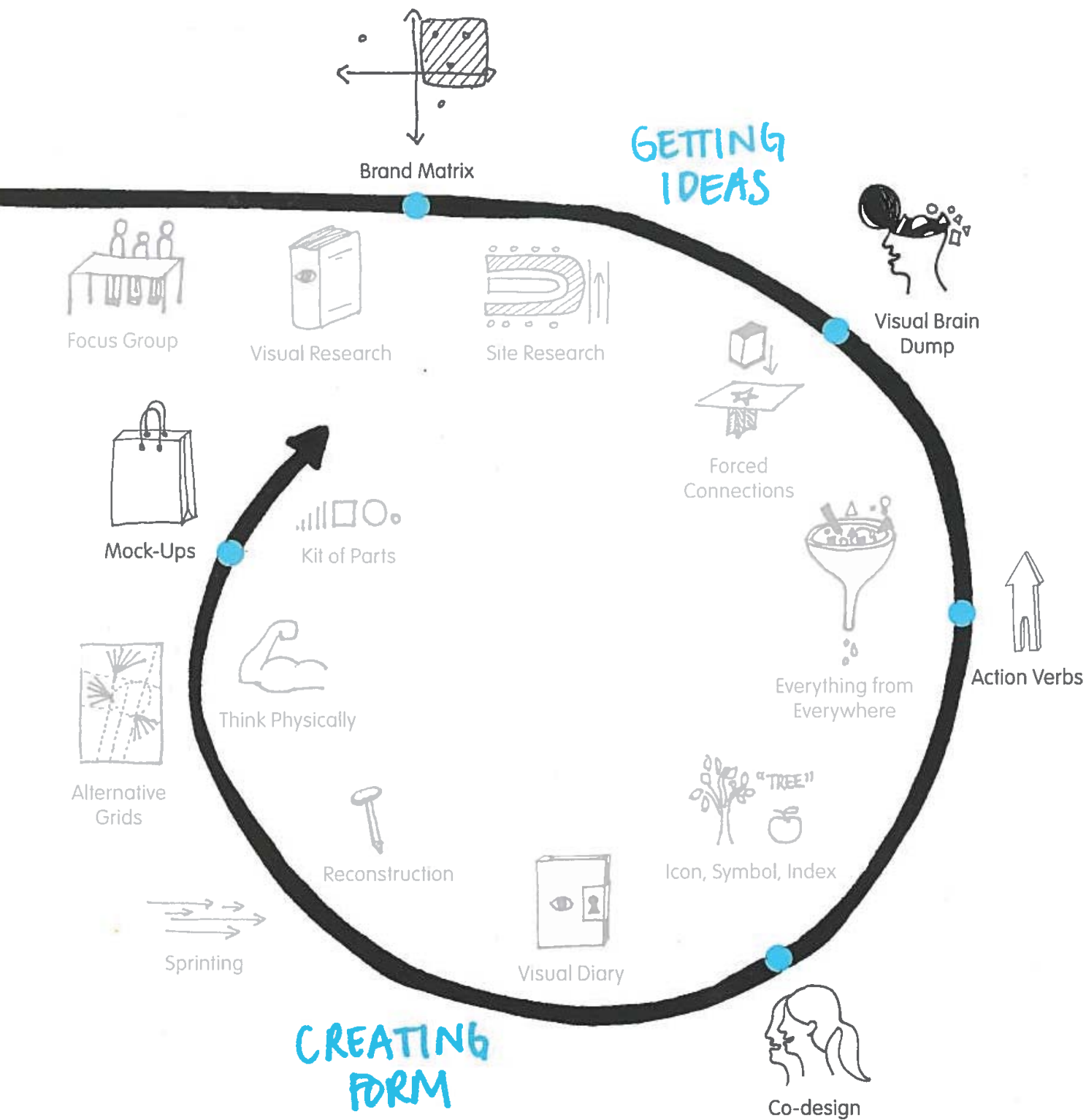
# The Design Process

This chapter follows one real-world project through each phase of the design process, from researching the problem to generating ideas to creating form. Along the way, the design team employed various techniques of design thinking that are explored in more detail later in the book. The project was conducted by students in the Graphic Design MFA program at MICA. A team of designers, led by Jennifer Cole Phillips, worked with client Charlie Rubenstein in an effort to raise awareness of homelessness in the local community. Knowing that they could not address all aspects of homelessness in a single project, the team worked to narrow their scope and create a project that could be successfully realized with available resources.

In 2008 Baltimore City documented 3,419 homeless people living within its limits. The team built their campaign around the number 3419, signaling both the scale of the problem and the human specificity of the homeless population. Working in conjunction with the client, the design team conceived and implemented a project that aimed to educate middle school students about homelessness. *Ann Liu*

*"The design process, at its best, integrates the aspirations of art, science, and culture"*

*Jeff Smith*



# Defining the Problem

*Interview with Charlie Rubenstein*

**Interviewing.** Designers talk to clients and other stakeholders to learn more about people's perceived wants and needs. Shown here are highlighted excerpts from a videotaped conversation with Charlie Rubenstein, the chief organizer of the 3419 homeless awareness campaign. *See more on Interviewing, page 26.*

Paired with his body language, Charlie's comments showed that he was dissatisfied with the current state of homeless services but also recognized their value.

Here, Charlie started talking more quickly and with more animation in his tone and body language, indicating his passion for treating homeless people like real people instead of just a number.

People often need time to get to the bottom line. After forty-five minutes, we were finally able to hear the core of what the client was trying to achieve with the 3419 campaign.

**If we are talking about 3419 as an organization, where do you see it five years from now?**

Well, I want to redesign the way we treat homelessness in the city. I don't want to do it from a nonprofit, third party level, I want to do it from the inside out.

My biggest problem with Baltimore's homeless services, or whatever you want to call it, is that they don't go very deep. **There isn't enough reach.** For me, it isn't that they are doing it wrong, there just needs to be a new way to do it.

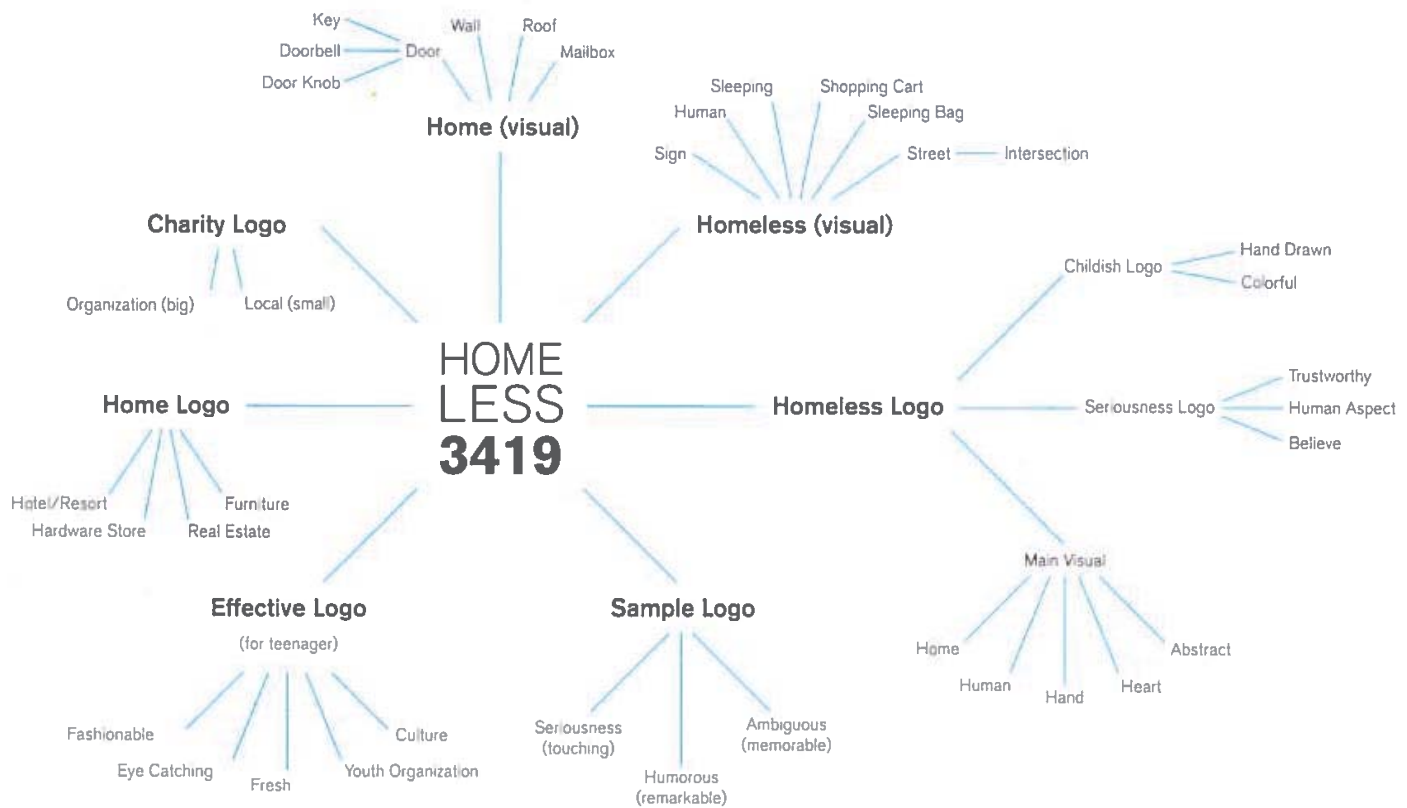
**Can you give me a specific example of a new way?**

Sure. There needs to be more qualitative research done. There are more quantitative studies around than you could read in a lifetime.... So, if you have a policy, **its biggest problem is that it's singular** and won't work for everybody. The biggest problem is that, even institutionally, we are treating people as numbers. We are treating people as a genre, as if they are faceless, heartless. Like they are just 3419.

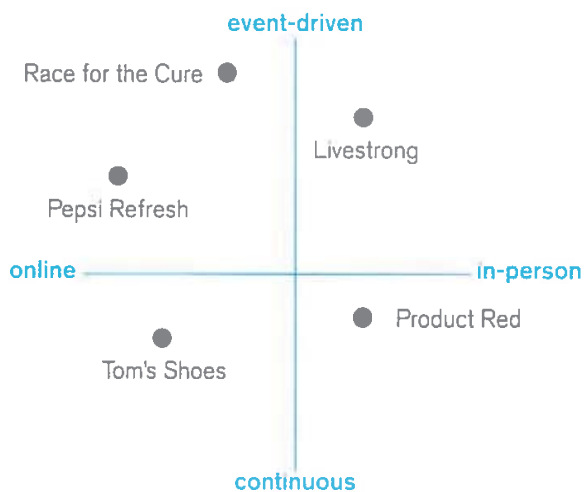
**I want to create a people-based program.**

Because we are talking about people, and there are so many different kinds of them. So, what if we tried to understand who each of these people are? Where they came from and what their names are... I want to do a six-month qualitative research study where we actually go out and interview over five hundred homeless people. And not just one time but over a period of time, so we can understand who these people are.





**Mind Mapping.** Designers use associative diagrams to quickly organize possible directions for a project. Design: Christina Beard and Supisa Wattanasansanee. [See more on Mind Mapping, page 22.](#)

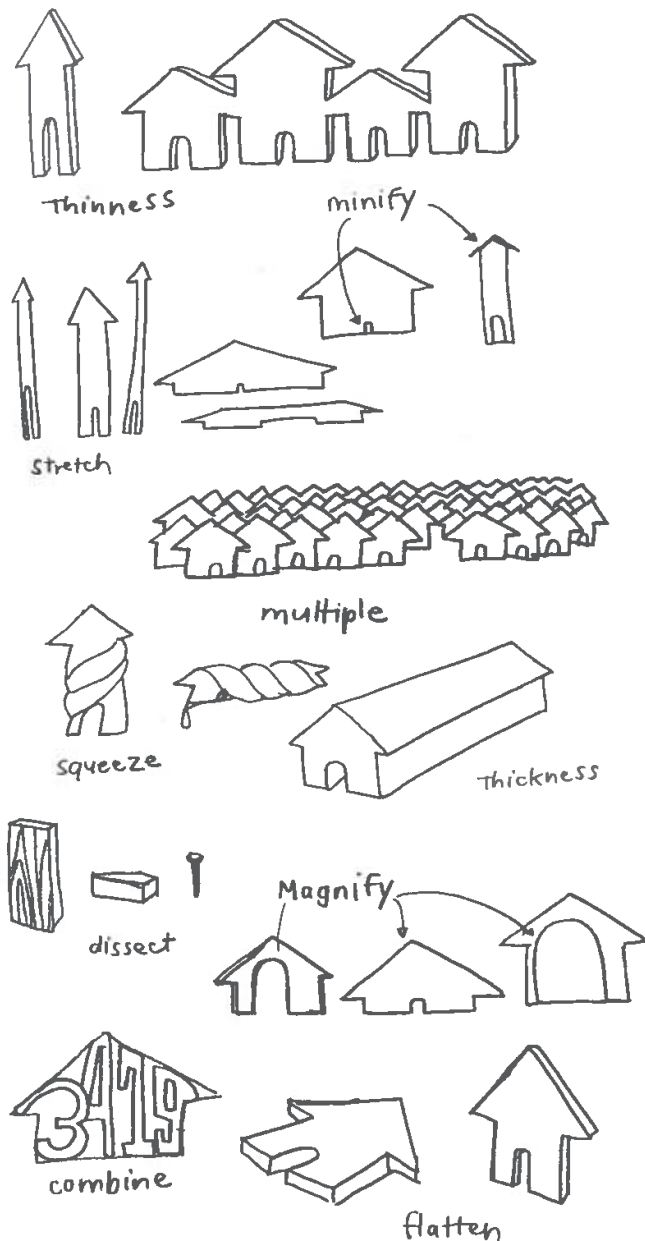


**Brand Matrix.** This diagram shows relationships among different social change campaigns. Some are single events, while others take place continuously. Some happen online, others, in person. [See more on Brand Matrix, page 42.](#)

CAN	WANT	ARE
WALK	BE HAPPY	MUSICIANS
WORK	BE SAFE	ARTISTS
SMILE	SUCCEED	VETERANS
FEEL		WORKERS

**Brainstorming.** By focusing the campaign on what homeless people have and not what they materially lack, designers chose "can," "want" and "are" as the voice of the project. [See more on Brainstorming, page 16.](#)

# Getting Ideas



3419 3419

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**Action Verbs.** A fun way to quickly produce visual concepts is to apply action verbs to a basic idea. Starting with an iconic symbol of a house, the designer transformed the image with actions such as magnify, minify, stretch, flatten, and dissect. Design: Supisa Wattanasansanee. [See more on Action Verbs, page 74.](#)

**Visual Brain Dumping.** Designers created various typographic treatments of 3419 and grouped them together in order to find the best form for the project. Design: Christina Beard, Chris McCampbell, Ryan Shelley, Wesley Stuckey. [See more on Visual Brain Dumping, page 62.](#)

# Creating Form



**Collaboration.** The stencil form was shared with a different team of designers to explore ways that users could transform it. Design: Paige Rommel, Wednesday Trotto, Hannah Mack. [See more on Collaboration, page 92.](#)



**Mock-Ups.** Making visual mock-ups showing how concepts, like a pillowcase poster, could be applied in real life helps make it concrete for clients and stakeholders. Design: Lauren P. Adams. [See more on Mock-Ups, page 136.](#)

3419

Original DIN Bold

3419

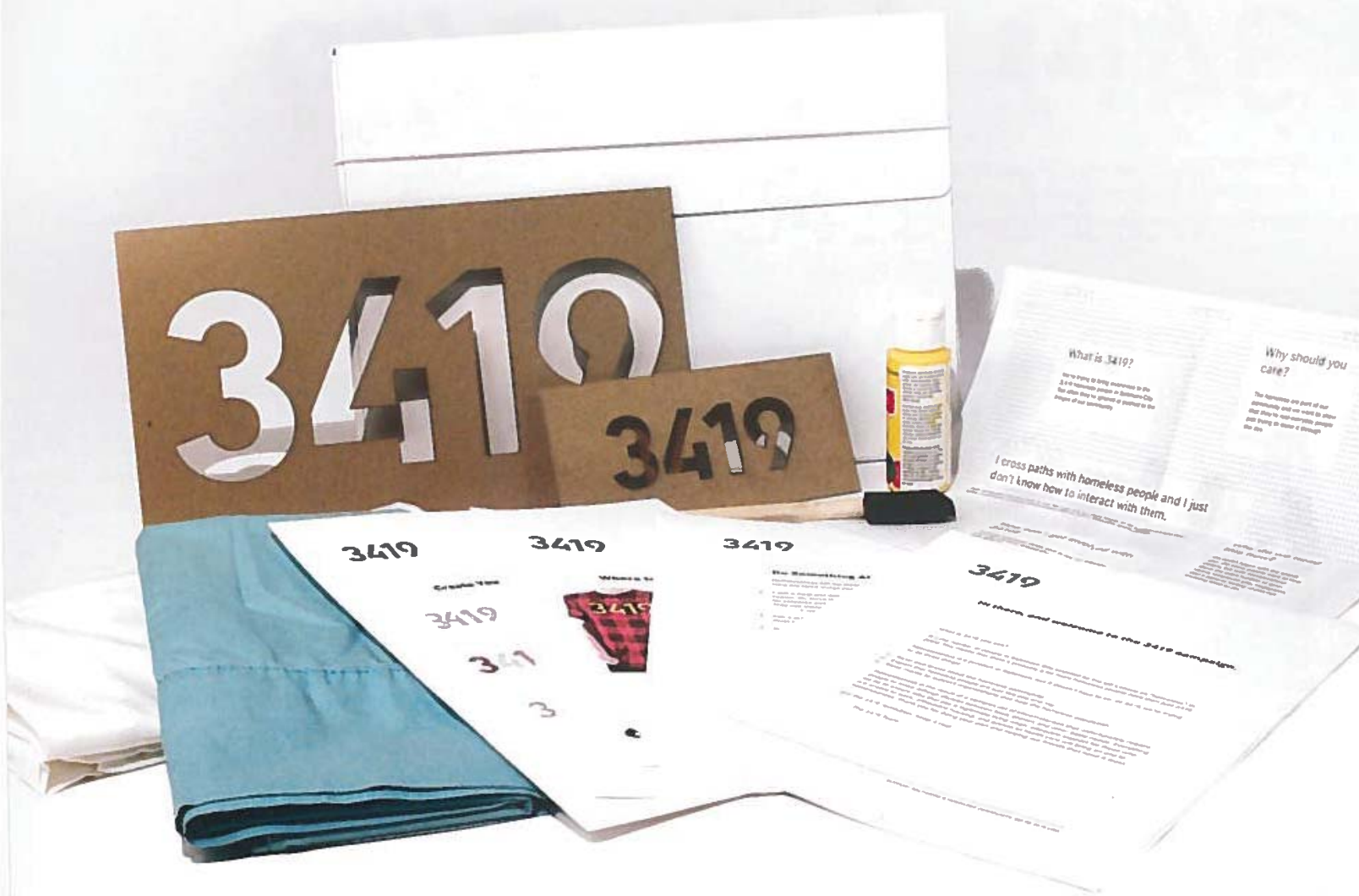
Simplified visual weight

3419

Modified for stencil

**Ready for Reproduction.** Having decided that a stencil would be part of the 3419 identity, the designer modified letters from the typeface DIN to create a custom mark that could function as a physical stencil. Design: Chris McCampbell.





**The Whole Kit and Kaboodle.** Designers created a poster and worksheets to teach kids about homelessness in Baltimore and what they can do to help. The kit also includes two stencils, two pillowcases, a bottle of paint, and a brush. The kit invites students

to create their own pillowcase posters, engaging them actively in thinking about the problem and what it means to go to sleep without your own bed. Design: Lauren P. Adams, Ann Liu, Chris McCampbell, Beth Taylor, Krissi Xenakis.

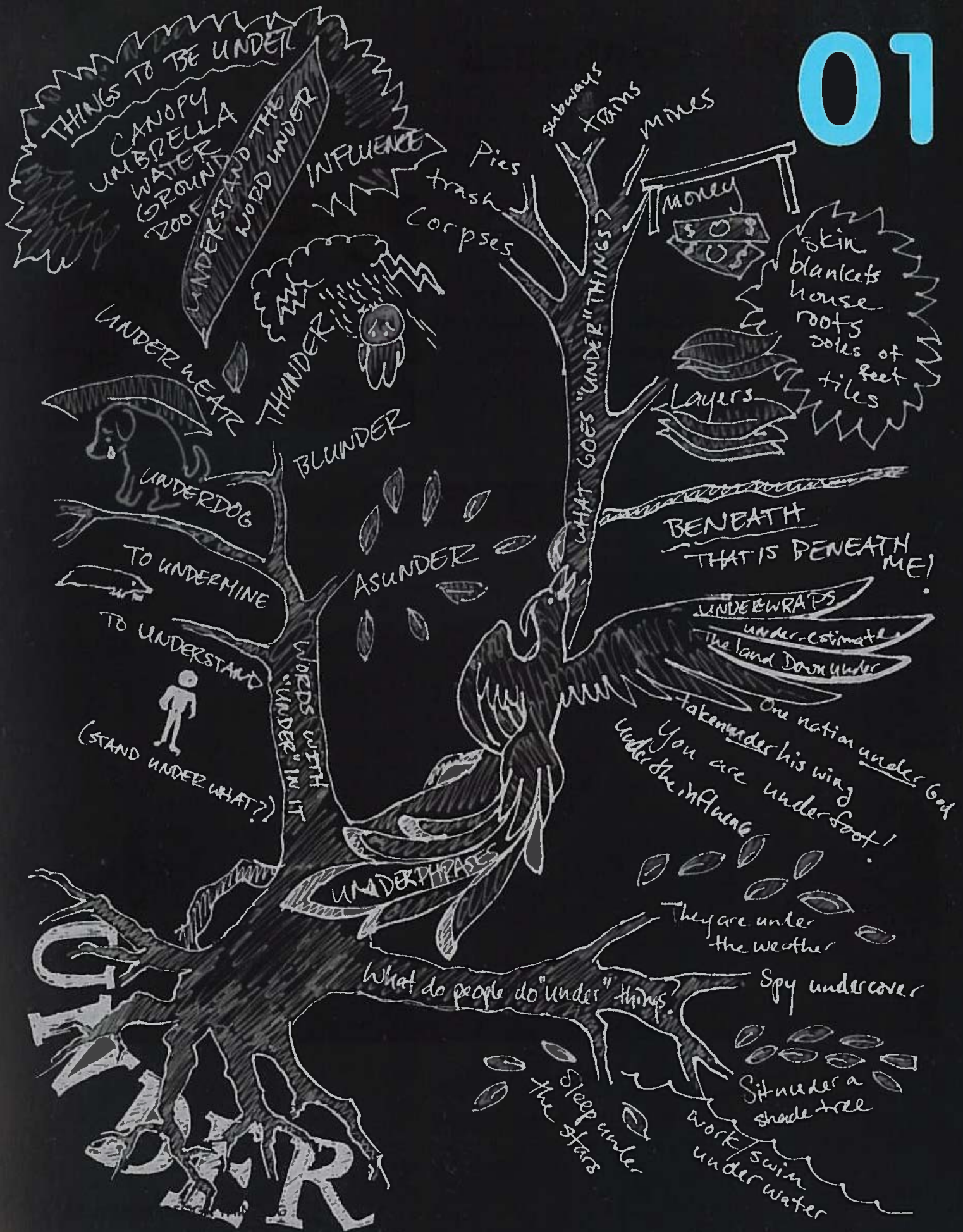
# The Cycle Continues

Design is an ongoing process. After a team develops a project, they implement, test, and revise it. For the 3419 homeless awareness campaign, the end result of the initial design phase was a kit for use in middle schools. The kit allowed the project team to interact with their audience, while the users created their own visual contributions with the materials provided and thus expanded the project's language. The design process began all over again.



**Co-design.** The 3419 design team conducted an afternoon workshop with local middle-school students in order to create pillowcases that would be used as posters to hang around their school and city. Co-design involves users in the creative process. [See more on Co-design, page 96.](#)





"A problem well-stated  
is half-solved."

John Dewey

# How to Define Problems

Most design projects start with a problem, such as improving a product, creating a logo, or illustrating an idea. Designers and clients alike often think about problems too narrowly at the outset, limiting the success of the outcome. A client who claims to need a new brochure may do better with a website, a promotional event, or a marketing plan. A designer who thinks the client needs a new logotype may find that a pictorial icon or a new name will work better for a global audience. A search for greener packaging may yield not just individual products but new systems for manufacturing and distribution.

At the beginning of the design process, ideas are cheap and plentiful, pumped out in abundance and tossed around with abandon. Later, this large pool of ideas is narrowed down to those most likely to succeed. It takes time to visualize and test each viable concept. Thus, designers often begin with a period of playful, open-ended study. It's a process that includes writing lists as well as sketching images. It involves mapping familiar territory as well as charting the unknown.

This chapter looks at techniques designers use to define (and question) the problem in the early phases of the creative process. Methods such as brainstorming and mind mapping help designers generate core concepts, while others (such as interviewing, focus groups, and brand mapping) seek to illuminate the problem by asking what users want or what has been done before. Many of these techniques could take place at any phase of a project. Brainstorming is the first step in many designers' process, and it is the mother of many other thinking tools, so we put it at the beginning.

Why are such techniques—whether casual or structured—necessary at all? Can't a creative person just sit down and be creative? Most thinking methods involve externalizing ideas, setting them down in a form that can be seen and compared, sorted and combined, ranked and shared. Thinking doesn't happen just inside the brain. It occurs as fleeting ideas become tangible things: words, sketches, prototypes, and proposals. More and more, thinking happens among groups working together toward common goals.

Alex F. Osborn developed the technique of brainstorming in his book *Applied Imagination: Principles and Procedures of Creative Thinking* (New York: Scribner's, 1953).

# Brainstorming

What picture comes to your mind when you hear the word *brainstorm*? Many of us conjure a dark cloud crackling with lightning and raining down ideas. The original metaphor, however, was military, not meteorological. The term *brainstorming* was coined by Madison-Avenue ad man Alex F. Osborn, whose influential book *Applied Imagination* (1953) launched a revolution in getting people to think creatively. Brainstorming means attacking a problem from many directions at once, bombarding it with rapid-fire questions in order to come up with viable solutions. Osborn believed that even the most stubborn problem would eventually surrender if zapped by enough thought rays. He also believed that even the most rigid, habit-bound people could become imaginative if put in the right situation.

Today, brainstorming is deployed everywhere from kindergarten classrooms to corporate boardrooms. Brainstorming and related techniques help designers define problems and come up with initial concepts at the start of a project. These processes can yield written lists as well as quick sketches and diagrams. They are a handy way to open up your mind and unleash the power of odd-ball notions. *Jennifer Cole Phillips and Beth Taylor*

"The right idea is often the opposite of the obvious."

Alex F. Osborn





Photo: Christian Ericksen

# How to Brainstorm in a Group

**01 Appoint a moderator.** Using a whiteboard, big pads of paper, or even a laptop, the moderator writes down any and all ideas. The moderator can group ideas into basic categories along the way. Although the moderator is the leader of the brainstorming process, he or she is not necessarily the team leader. Anyone with patience, energy, and a steady hand can do the job.

**02 State the topic.** Being specific makes for a more productive session. For example, the topic "new products for the kitchen" is vague, while "problems people have in the

kitchen" encourages participants to think about what they do each day and what they might have trouble with. Breaking the topic down even further (cooking, cleaning, storage) can also stimulate discussion.

**03 Write down everything, even the dumb stuff.** Everybody in the group should feel free to put out ideas, without censorship. Unexpected ideas often seem silly at first glance. Be sure to record all the boring, familiar ideas too, as these help clear the mind for new thinking. Combine simple concepts to create richer ones.

**04 Establish a time limit.** People tend to be more productive (and less suspicious of the process) if they know the session won't drag on forever. In addition to setting a time limit, try limiting quantity (a hundred new ways to think about hats). Goals spur people on.

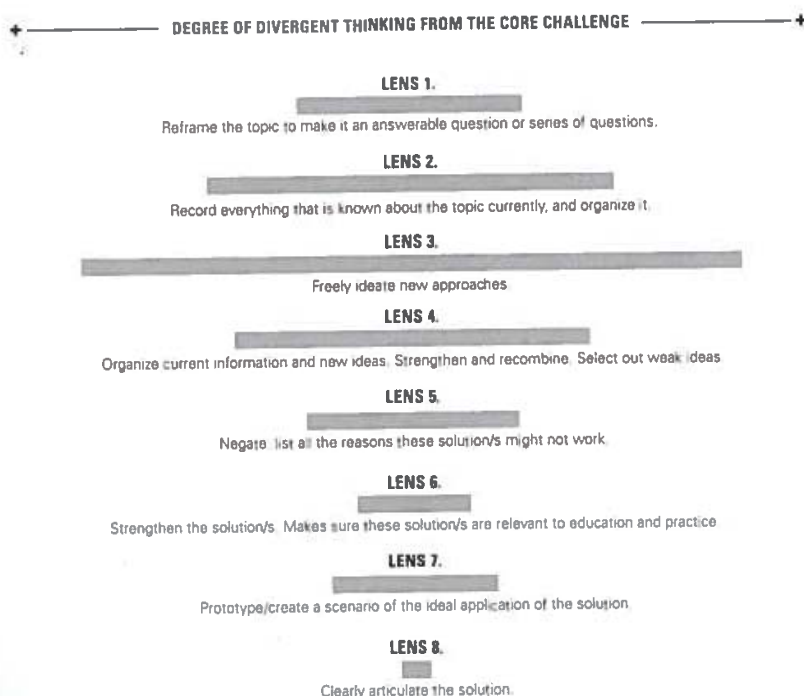
**05 Follow up.** Rank ideas at the end of the session or assign action steps to members of the group. Ask someone to record the results and distribute them as needed. The results of many brainstorming sessions end up getting forgotten after the thrill of the meeting.

# Case Study

## Designers Accord Summit

In the fall of 2009, the Designers Accord brought together one hundred global thought leaders for two days of highly participatory brainstorming, planning, and action around the topic of design education and sustainability. Valerie Casey, architect of the summit and founder of the Designers Accord, structured the event like a layer cake of short, small-group work sessions interspersed with lively lectures and opportunities for quality social time. The mix of activities helped prevent burnout and maximize productivity.

Participants worked in eight groups, and each group tackled the core challenge of the summit through a different lens. Groups rotated through the topics, allowing participants to refresh their perspectives and add to the collective wisdom of a larger endeavor. An efficient team of moderators and student assistants—plentifully equipped with Sharpies, Post-its, and whiteboards—kept conversations brisk and captured content along the way.



**Social Brainstorming** (above and opposite). Intense work sessions were interwoven with inspiring presentations and impromptu social gatherings. Moderators and student assistants worked to cultivate, capture, and cull ideas using every surface available: floors, walls, windows, and whiteboards. Photos: Christian Ericksen.

**Through the Lens** (left). A system of lenses for viewing the subject of sustainability and design education allowed for varying amounts of freedom and constraint. Diagram: Valerie Casey.









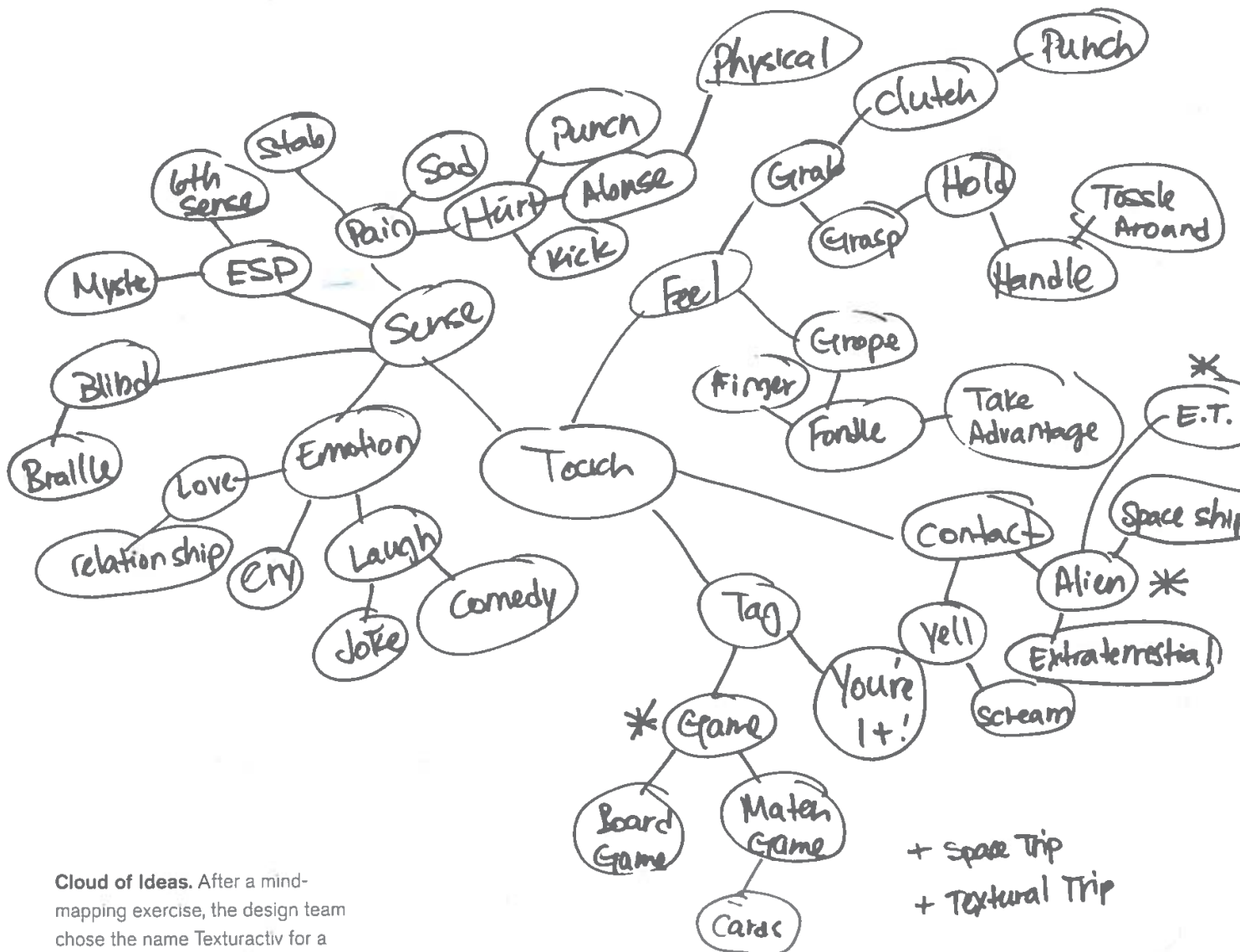




# Case Study

## Texturactiv Identity

During a two-day branding workshop, designers from Toormix encouraged a team of students to use mind mapping to develop a concept and naming system for a museum of textures. Toormix pushed the design team to keep searching for surprises.

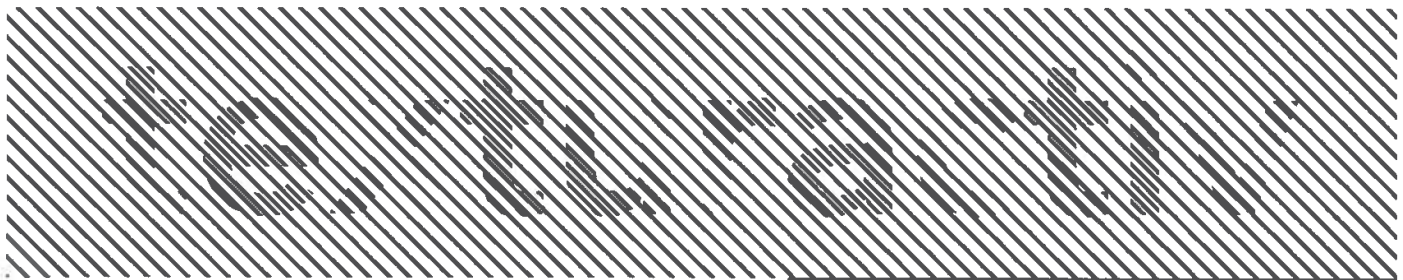


**Cloud of Ideas.** After a mind-mapping exercise, the design team chose the name Texturactiv for a museum aimed at English- and Spanish-speaking audiences. Design: Chris McCampbell.

# TEXTURACTIV

A TACTILE EXPLORATORIUM

**Image Solution.** This logo incorporates photographs of real-world textures. The designer used geometric forms to represent a jungle gym and used the letterforms to frame an image of grass. Design: Beth Taylor.



UNA EXPERIENCIA TÁCTIL

**Expressing Touch through Sight.** This solution draws on the words *invisible* and *waves*, concepts uncovered in the mind-mapping process. The stripes-on-stripes pattern undulates in and out of visibility, creating a visual texture. Design: Lauren P. Adams.



**Patterning.** Many trails in the designer's mapping session led to the word *pattern*. She created a simple patterned background for the logotype. Elements of the pattern move in front of the lettering, generating a sense of depth. Design: Krissi Xenakis.