

SENSE - IT! IN ACTION

Facilitator's Guide





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The header features a collection of hand-drawn geometric shapes in blue, yellow, and pink. These include several hexagons of varying sizes, some complete and others partially cut off by the edges of the frame. There are also blue curved lines and segments that resemble parts of larger shapes or stylized letters. The shapes are scattered across the top half of the page.

INTRODUCTION

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ABOUT SENSE-IT!

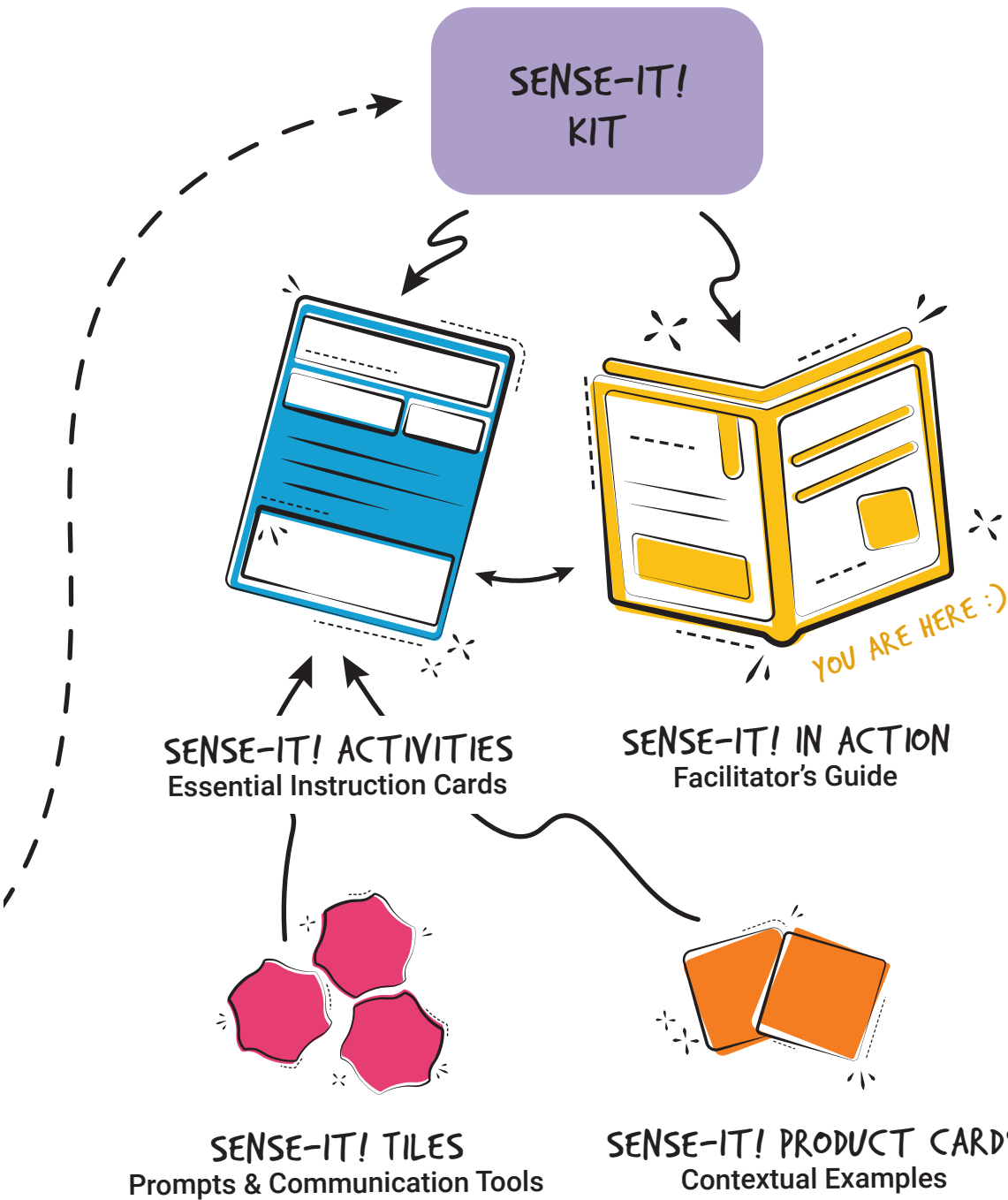
Sensory design is the key to enriching and mediating people's lived experience... but not all designers have had the opportunity to explore the multisensory aspects of design.

This is why we developed the *Sense-It!* Kit—for exploring, communicating, and learning about sensory design in a fun and interactive way. The kit includes: this Facilitator's Guide, Activity Cards, Product Cards, and Tiles. Each of these resources stem from concepts explored in the book: *Sense-It! Insights into Multisensory Design*.

This toolkit offers a unique set of activities that aim to enhance the creative process. Our hope is that through engaging in these experiential activities, designers, as well as non-designers, will access information and gain an appreciation for the complexity of human experience that influences design decisions.



SENSE-IT! INSIGHTS INTO MULTISENSORY DESIGN
Main source of information



ACTIVITIES

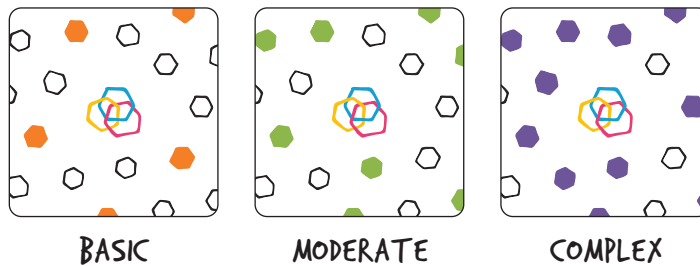
The *Sense-It!* Kit can be used to introduce students to sensory design, reinforce concepts, and provide opportunities to apply what they have learned. This forms the basis of the Catalyze, Learn, and Apply (CLA) model used to categorize the **Sense-It! Activities**.

Catalyze activities help engage participants; they are fast paced, exciting, and are designed to spark students' interest and get their gears turning. These cards are useful for breaking the ice, introducing a new topic, and capturing participants' attention to encourage them to participate during the lecture or discussion about a topic.

Learn activities help participants understand how principles from *Sense-It! Insights into Multisensory Design* chapters are expressed in the design of and interactions with everyday products. They are tools for analysis and help solidify lecture principles by demonstrating concrete examples. These activities are useful directly after a chapter module to help participants retain the information they learned.

Apply cards take the learning further. Ultimately, designers should use what they know about sensory aspects of design to create more sophisticated, useful, and long-lasting products. These activities ask participants to apply principles of sensory design to products through sketching, brainstorming, and creating. These cards are useful when coming to the end of a topic and can act as prompts for class projects.

Sense-It! Product Cards provide visual examples of products that are used as reference during many activities. The 3 groups are based on their perceived complexity of form and movement—ranging from simple to complex in order to suit the goals of each activity (see p.210 for more details).



Sense-It! Tiles showcase sensory attributes that are organized into groups of sensory modalities—each represented by a different colour. These tiles can act as prompts, introduce sensory vocabulary, and facilitate communication during activities (see p.208 for more details).



ACTIVITIES BY THEMES

The Activity Cards are organized here by themes corresponding to *Sense-It! Insights into Multisensory Design*.

INTRODUCTORY

MYSTERIOUS PRODUCT (P.60)

A fun ice-breaker that encourages participants to use sensory vocabulary to guess products.

SENSORY INVENTORY (P.64)

An immersive time of guided awareness and reflection on how different senses amalgamate to form rich experiences.

SEVEN! (P.68)

A race to find a variety of sensory attributes in everyday products.

CAUSE & EFFECT (P.102)

A competition where participants must use critical thinking to best link product attributes to the overall perception of a product.

DESIGN FOR EMOTION AND MEANING

ABSURD ATTRIBUTES (P.24)

A light-hearted exploration of absurd product concepts in order to create an appreciation for appropriate product attributes in design.

HIGH TENSION (P.38)

A fast-paced activity that creates a comfortable space to explore how conflicting attributes can co-exist in harmony.

LINE IT UP! (P.52)

An exercise in evaluating products through multiple sensory lenses by placing products along different spectrums.

MEANINGFUL DESIGN (P.56)

An iterative exploration of how existing products can be altered to make them more meaningful.

WHAT IF? (P.92)

A quick opportunity to practice iterating products that convey different semantic meanings.

SMELL MEMORIES (P.136)

An opportunity to reflect on personal memories and consider how smell plays a role in emotional attachment to products/environments.

SENSE SEMANTICS (P.170)

A fun thought experiment where participants attempt to give products specific personalities by altering their attributes.

SURPRISE ME (P.190)

A collaborative exercise in creating unexpected product sounds to evoke surprised reactions.

DESIGN AND VISUAL PERCEPTION

IN-FORM-ATION (P.44)

A simple exercise in analyzing formal product compositions.

COMPOSITION CREATOR (P.110)

A “sweet” way to learn about the relationships of elements within compositions and their proportions.

IN HARMONY (P.118)

An exploration in reorganizing product features using Gestalt Principles to alter the perceived harmony of products.

ACROSS DIMENSIONS (P.154)

A challenge to practice translating 2D compositions to 3D forms in a light-hearted way.

CONCINNITY MAPPING (P.158)

A critical look at what makes a product composition feel too perfect or unsettling, and by extension how to make it feel “just right”.

DESIGN FOR COLOUR AND LIGHT PERCEPTION

BRANDING COLOURS (P.30)

An opportunity to play with different colour schemes in order to highlight the communicative properties that colours possess.

COLOUR COMMUNICATION (P.106)

An exploration of how one can use colour to give meaning to products and clues as to how to use them.

SIGHTSEEING (P.174)

A task to re-colour everyday products for different applications in order to foster an understanding of how to use colour with purpose.

DESIGN FOR TACTILE PRODUCT INTERACTIONS

FEELING SKETCHY? (P.34)

A joint effort to describe and interpret products using only tactile vocabulary by isolating one's sense of touch.

THE MATERIAL IS RIGHT! (P.88)

A fun challenge to guess materials by reflecting on their properties.

JUST ADD TEXTURE (P.122)

A hunt for unique textures in which participants then explore how textures can affect user-product interactions.

PERFECT IMPERFECT (P.132)

A reflection on the appropriateness of different materials for specific products and their perceived value throughout the product journey.

VIBRATIONAL PATTERNS (P.198)

A playful creation of patterns by which participants can explore how to communicate through the use of haptic language.

DESIGN FOR AUDITORY EXPERIENCES

WHY SOUND? (P.96)

A fun brainstorm of how changing or incorporating new sounds into products can enhance person-product interactions and perceptions.

SOUND COMIC (P.140)

An opportunity to practice expressing sound experiences in different product interaction scenarios.

SOUNDSCAPE (P.144)

An auditory performance of unique sound environments that allows participants to deconstruct how people experience sound.

SOUND THE ALARM (P.186)

A fun opportunity to compose an arrangement of sounds that enhances the experience of a particular environment.

VOCAL SKETCH (P.202)

A vocal performance that teaches participants how to communicate through the use of emotion and tone of voice.

DESIGN FOR SMELL AND TASTE EXPERIENCES

SMELL SPECTRUM (P.72)

A comparison of personal perceptions of smells using spectrums.

SMELL WALK (P.76)

A mindful and immersive walk on which participants have the opportunity to practice describing different smells.

TASTE LAYERING (P.84)

A delicious way to explore personal rituals and appreciate the layers of food experience.

TASTE THEORY (P.148)

A thought experiment into the world of taste, its interplay with other senses, and its role in user experience.

SMELL JOURNEY (P.178)

A journey into exploring and understanding how layers of smell come together to form overall smell perceptions within certain environments.

SMELL MATCHING (P.182)

A quick matching game where participants practice strengthening product-smell connections by establishing associations.

DESIGN FOR MULTISENSORY AND KINETIC EXPERIENCES

KINETIC CHARADES (P.48)

A fun and fast version of charades where participants take a stab at embodying products only through their movements.

SYNAESTHETIC STORIES (P.80)

A more abstract exercise in which participants consider how the same experience can be expressed through different sensory lenses.

HIERARCHY (P.114)

A highly immersive task in which participants become aware of the different stages of sensory dominance during product usage.

KINETIC ACTIONS (P.126)

A deep dive into the attributes of product movement and their affects on user-product interactions and perceptions.

KINETIC COMMUNICATION (P.162)

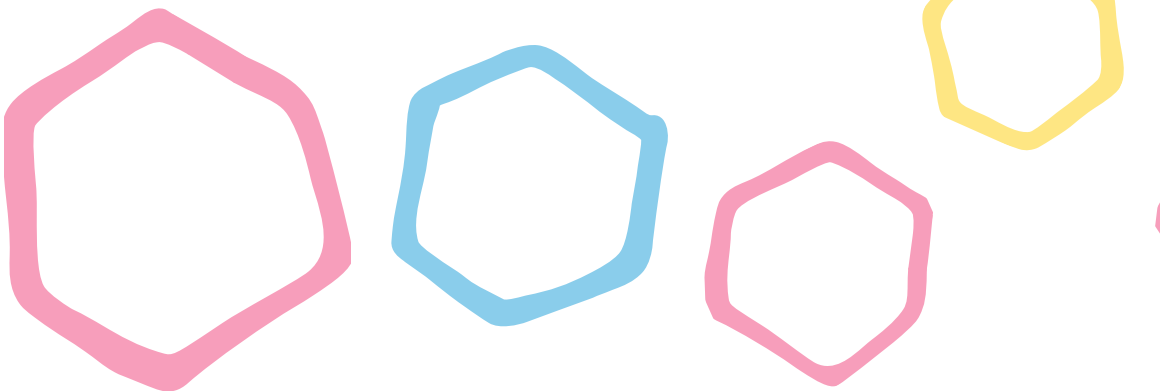
A fun application of the attributes of movement where participants try making products come to life through the use of gestures.

RITUAL DESIGN (P.166)

A reflection of personal rituals and exploration into how they can be enhanced through innovative product design.

TASTE JOURNEY (P.194)

A novel activity that invites participants to try expressing their perceptions of an experience through taste.





HOW TO USE THIS GUIDE

THIS SHOWS YOU WHAT SENSE(S) AN ACTIVITY FOCUSES ON

The diagram illustrates the layout of an activity card. At the top, a pink bar contains icons for senses (eye, ear, hand, nose, mouth) and the word "CATALYZE". To the right, a box labeled "LEARNING OUTCOMES" contains three horizontal lines. Below the pink bar is the "ACTIVITY TITLE" followed by ten horizontal lines for text. At the bottom of the card, a pink box contains the text "EMOTION & MEANING", a clock icon with "30 MINUTES", and a group of four people icon with "TEAMS OF 4". Annotations with arrows point to these elements: "THIS SHOWS YOU WHAT SENSE(S) AN ACTIVITY FOCUSES ON" points to the pink bar; "THESE ARE THE LEARNING OUTCOMES OF AN ACTIVITY" points to the "LEARNING OUTCOMES" box; "WHAT AN ACTIVITY IS ABOUT & RELEVANT BACKGROUND INFORMATION" points to the activity title text area. Below the main card, three smaller cards are shown in yellow, light blue, and dark blue, each with a number in a hexagon (1 or 2) in the top right corner. Arrows from the text "REMEMBER! THE COLOURS TELL YOU WHETHER AN ACTIVITY IS CATALYZE, LEARN, OR APPLY" point to these colored cards.

ACTIVITY TITLE

LEARNING OUTCOMES

THESE ARE THE LEARNING OUTCOMES OF AN ACTIVITY

WHAT AN ACTIVITY IS ABOUT & RELEVANT BACKGROUND INFORMATION

EMOTION & MEANING

30 MINUTES

TEAMS OF 4

1

2

1

2

1

2

REMEMBER! THE COLOURS TELL YOU WHETHER AN ACTIVITY IS CATALYZE, LEARN, OR APPLY



RELATED CHAPTER(S)
FROM *SENSE-IT! INSIGHTS
INTO MULTISENSEORY
DESIGN*

APPROXIMATE
ACTIVITY
DURATION

RECOMMENDED
TEAM SIZE

ACTIVITY GUIDE

1. These are detailed instructions for how to lead activities
These are specific tips tailored to each activity
- 2.
- 3.

THESE STEPS AND
TIPS OUTLINE THE
RECOMMENDED WAY TO
RUN AN ACTIVITY

THIS PAGE SHOWS YOU
THE SUPPLIES YOU NEED
TO RUN AN ACTIVITY!

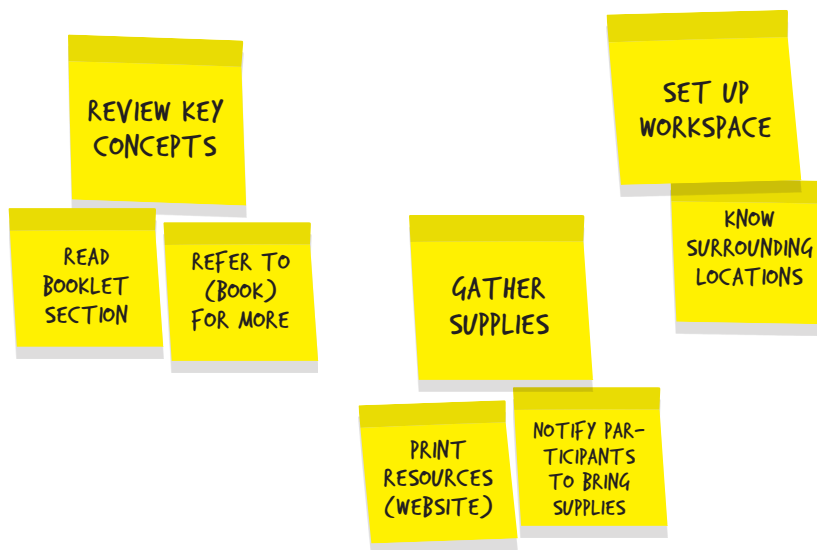


GETTING THE MOST OUT OF SENSE-IT!

Each *Sense-It!* Activity is unique, varying in structure and approach to the subject matter and outcome—meaning each one has different requirements for success. However, these general tips apply to most activities and are based on our experience and usability testing feedback. Remember that as the facilitator, you may modify activities as you deem necessary with respect to team size, timing, and even specifics of the activity.

Preparing

To ensure things go smoothly, some work needs to be done behind the scenes...



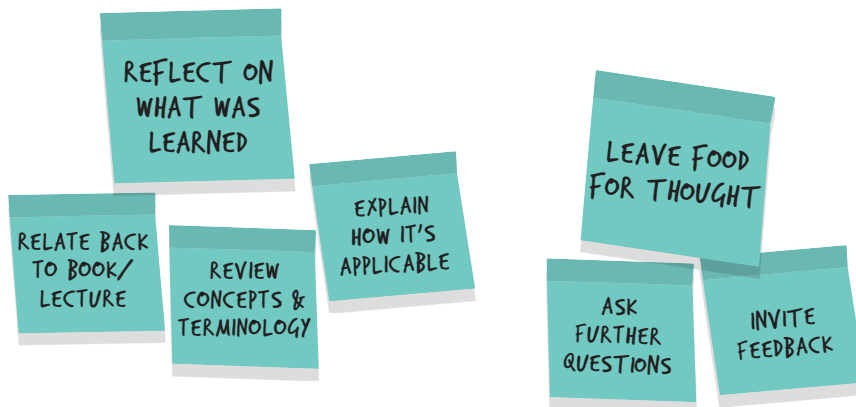
Running

... once the fun begins, there are still some things to keep in mind...

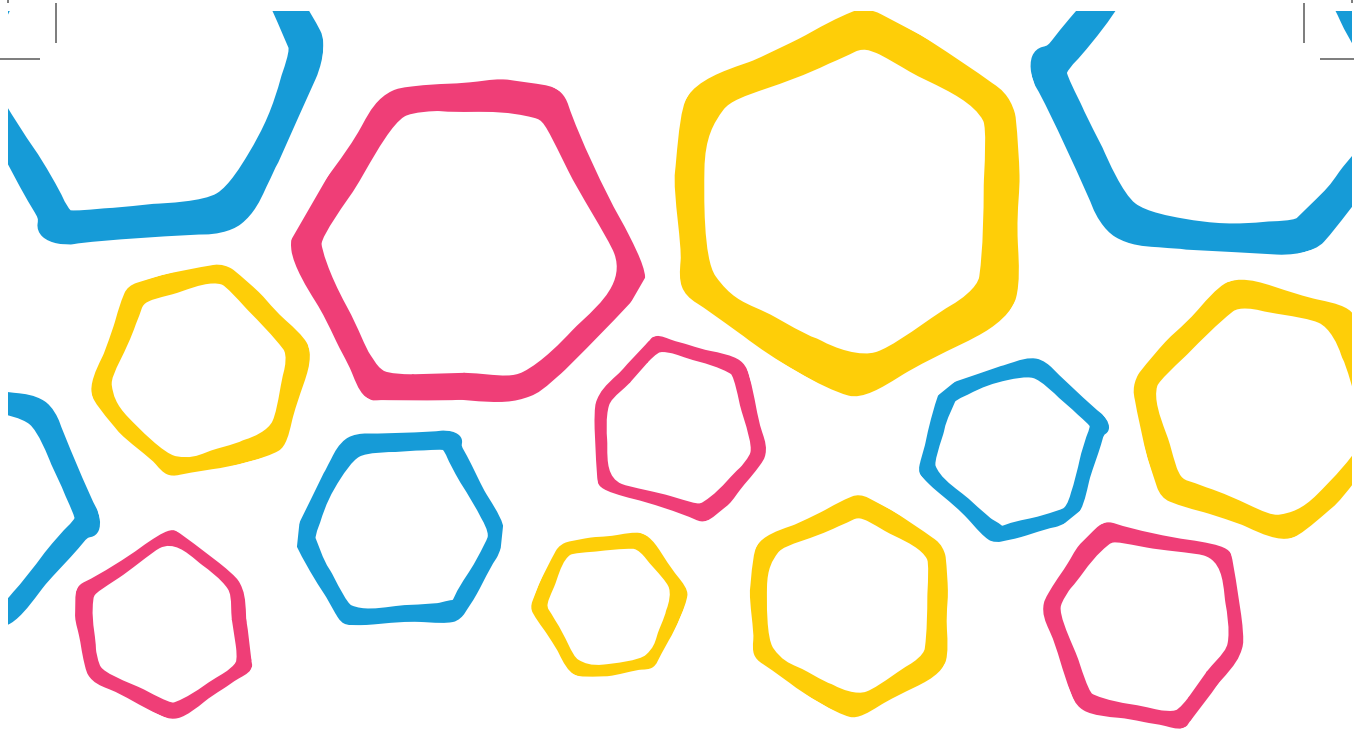


Wrapping-Up

... when approaching the finish line, don't forget to...








ACTIVITIES

CATALYZE



A thick, solid pink vertical bar runs along the left edge of the page.

Catalyze cards are fast paced and exciting; they help to grab participants' interest and attention. These cards are useful for introducing new sensory design themes and are great for breaking the ice!



CATALYZE ACTIVITY

ABSURD ATTRIBUTES

... is a catalyzing activity which explores semantics in a light-hearted way by subverting product design conventions to imagine absurd products. Participants can do this through considering changes in materials, form, and visual/tactile/auditory/olfactory/gustatory properties. These changes may poorly affect the functionality of a product and make it inappropriate for its target user, showcasing the absurdity of the picked attributes.

Product Semantics

People become attached to their products for a variety of reasons; they may find that the products give them a sense of innate pleasure (directly through the senses, through emotional connection, through their ideals or values, or through social means). Products can communicate a message that influences user's emotions and, therefore, create a connection.

EMOTION &
MEANING



30 MINUTES



TEAMS OF 3-4

LEARNING OUTCOMES

- Identify material properties & their appropriateness
- Explain symbolic meaning
- Describe how to alter perceptions

Material Choice

What does material choice tell you about a product's functionality? Value? Manufacture and durability? Intended user? How does the perception of a deck chair change when a different material is used?



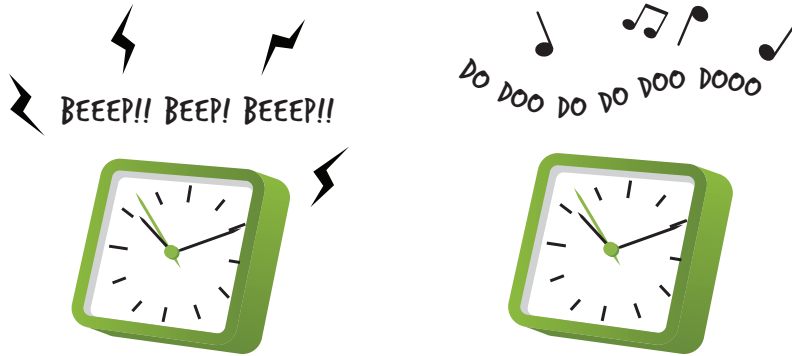
Colour and Formal Language

What does the colour and formal language of a product tell you about its intended user? About the environment of use? These two cell phones have the the same basic composition of elements, and theoretically the same functions, however, it is unlikely that they would be used by the same person.



Sound

How does the sound design of a product affect how you perceive the product? What personality does the product have based on its auditory qualities?



Smell and Taste

How does the smell or taste of a product make you feel? Smell and taste are seldom considered as key design features. They can have a huge impact in how they affect the experience of a product because of how these senses are tightly associated with memory and emotion.

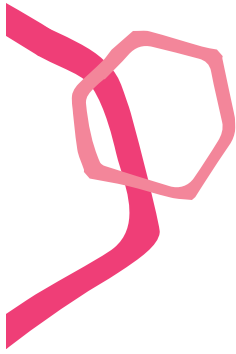


Multi-modal Experiences

Absurd Attributes activity teaches participants to understand the effect of various attributes on the overall perception of the product. Nevertheless, it makes participants think of how the interaction with that product can be influenced by triggering different senses.

For example, the garlic press with a clean colour palette and a metal finish communicates the durability of a product. In the process of interaction the user will experience fresh garlic smell and a sound of the garlic being squished which will add value to the overall process.





ACTIVITY GUIDE

1. Distribute **Product Cards** and **Tiles** to different teams
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stop watch or timer** to keep track of time
4. **At 5 minutes**, instruct players to start creating their poster advertisement
5. **At 20 minutes**, let players know that they have 5 minutes left to work on their advertisements
6. **At 25 minutes**, begin presentations
Keep presentations short, around 1-2 minutes!
7. If time allows, discuss the process, focusing on why the players chose to alter the aspects that they did
This is an opportunity to relate the exercise to a broader discussion of product semantics and why they are important

ABSURD ATTRIBUTES



CATALYZE

Understand why some materials and appearances are appropriate or inappropriate for particular products.

SUPPLIES

- Sense-It! Product Cards
- Pens & Newsprint
- Sense-It! Tiles for reference (optional)

INSTRUCTIONS

In teams of 3-4, pick a Product Card

1. Take **5 minutes** to list the visual and perceived attributes (material & tactile experience, form, visual language, functional features, smell & taste, sound) that make this product **appropriate for its intended user, environment, and functionality**
Record these observations as a team using pens and paper
2. Take **5 minutes** to brainstorm ways to change these attributes to render this product **less useful** or **appropriate**
Teams can use Tiles for ideas
3. Create a **playful advertisement** (e.g. infomercial-style or other) for this altered product; take **15 minutes**.
Use newsprint to create a poster for this new weird product, detailing its attributes
4. Present your team's advertisement in 1 or 2 minutes, explaining how the new features make your product **more or less appropriate to use, and why**
E.g. different colour and form to change intended user group (bright colours & rounded corners for children), different material to change environment of use (rugged plastic for outdoor equipment)
5. Discuss your own experiences with other products that have attributes that are not appropriate
How can a designer determine what materials or features are appropriate?

FURTHER INVESTIGATION

To see examples of products rendered useless through inappropriate form or materials, see "The Uncomfortable", a collection of deliberately inconvenient everyday objects by architect Katerina Kamprani:
www.theuncomfortable.com



CATALYZE ACTIVITY

BRANDING COLOURS

... is an activity focused on changing a perception of a logo using various colours to communicate a message.

Colour can have a large emotional impact on users. It creates associations recognized by most people, although these associations vary culturally.

When performing this activity, participants must consider what sort of meaning they wish to attribute to a specific type of a company. Equally important is the consideration of colour combinations.



COLOUR & LIGHT
PERCEPTION



30 MINUTES



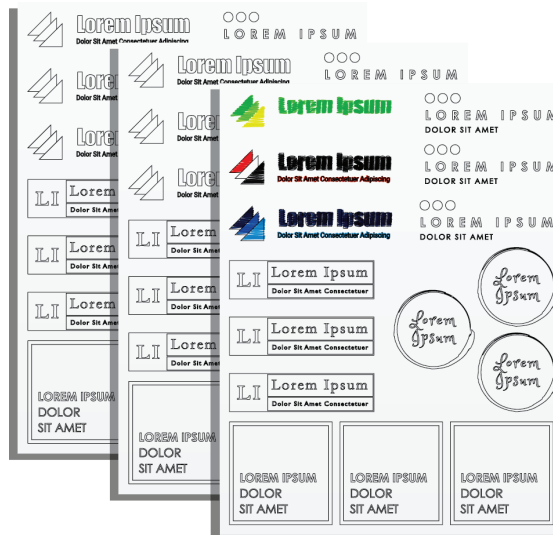
INDIVIDUAL

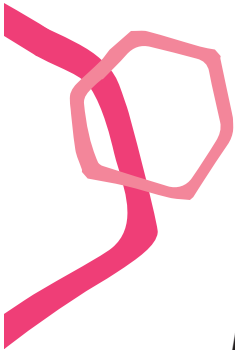
LEARNING OUTCOMES

- Examine the role of colour theory in brand identity
- Describe the cultural associations with colour
- Express meaning through colour

Note: In this activity, the facilitator can either ask players to create their own logos, or print out colouring sheets (see Accompanying Resources). If colouring sheets are provided, the activity will take about 30 minutes; if players are asked to create their own logos, the activity will take longer.

Providing players with the logo colouring sheets may be preferable because it allows the activity to be more focused on colour.





ACTIVITY GUIDE

Note: *Because this activity requires coloured markers, the facilitator may need to prepare players by asking them to bring colouring materials prior to the activity.*

1. Hand out paper or (optionally) **logo colouring sheets** to each player (see Accompanying Resources)
2. If players are creating their own logos, give them 10-15 minutes to design the logo and create 3 copies
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Start the activity and use a **stop watch or timer** to keep track of time
Tell players that they will have 15 minutes to colour the logos
5. **At 10 minutes**, tell players they have 5 minutes left
6. **At 15 minutes**, ask players to gather into **teams of 3-4** and present their logos
7. **At 30 minutes**, the activity is complete

BRANDING COLOURS



CATALYZE

Use colour in logos to create different brand perceptions in logos.

SUPPLIES

- Paper
- Pens & coloured markers
- Logo colouring sheets (optional)

INSTRUCTIONS

Individually,

1. Create a simple black and white logo design on paper
This could be just words, graphics, or a combination of both
OR, if instructed, take a handout of the logo colouring sheets
2. Choose **3 different types** of companies to convey through your logo
E.g. high-tech, construction, gardening, home decorating, publishing, food service, etc.
3. Colour your black and white logo **3 times** using different colour schemes that are appropriate for each of these companies, paying attention to colour dominance
How would these companies want to portray themselves?
Are they energetic, serene, feminine, sophisticated, or something else?
4. Gather into teams of **3-4** and take turns presenting your logos; ask other team members to guess **what type of company** you are trying to represent
Did the colours you used represent what you intended?
Did you gain any insight into the use of colour in branding?

COLOUR AS IDENTITY Colour can increase brand recognition by up to 80% (Morris, 2006)

DOMINANT COLOUR Largest proportional area; background or overall colour

SUBDOMINANT COLOUR Smaller areas; 2nd colour

ACCENT COLOUR Small relative area, but offer a contrast of hue, intensity, or saturation





CATALYZE ACTIVITY

FEELING SKETCHY?

... allows participants to explore what happens when people are unable to see a product.

Without visual cues, participants will have to rely on their other senses to interpret a product's, for example, physical touch. Physical touch experiences relate to the direct interaction between a user and a product. Someone can either actively touch an object (explore it), passively touch it (being touched by an object), or have a combination of both since they can occur simultaneously. Tactile experiences can provide the user with more information about a product – such as materiality, form, and surface qualities.

Sensory product interaction experiences can be useful for designing new products; this activity enables participants to learn more about the types of actions people perform with a product and how physical interactions can be perceived.

TACTILE PRODUCT
INTERACTIONS



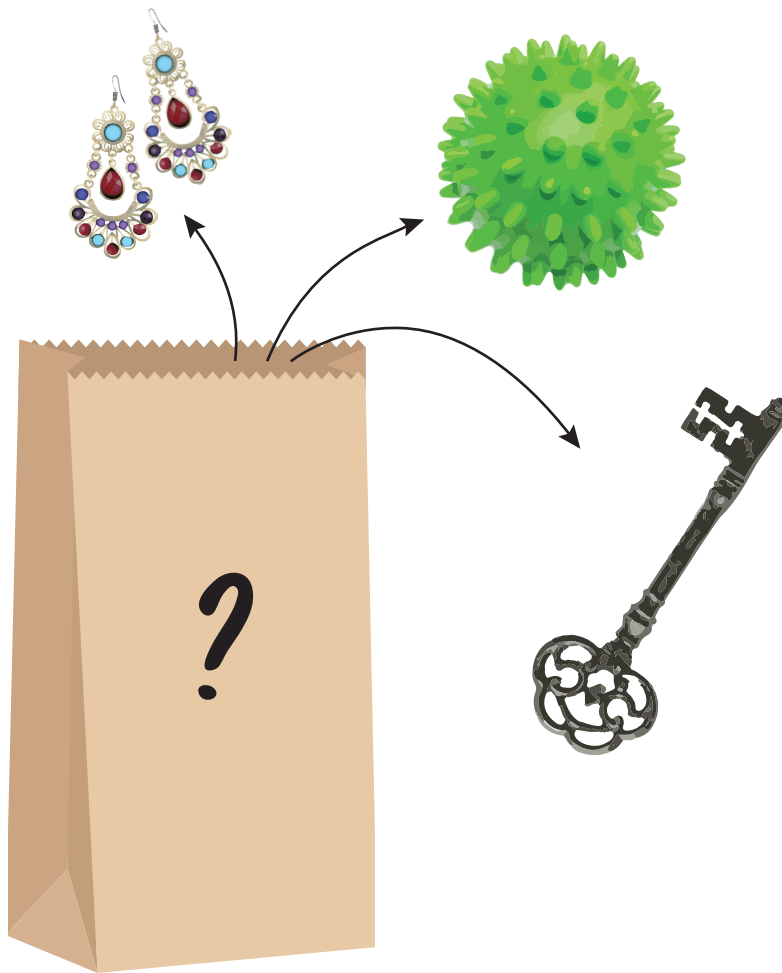
30 MINUTES

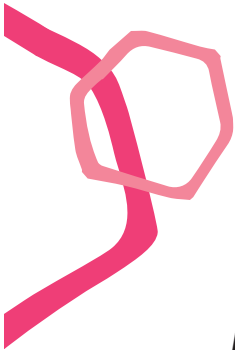


TEAMS OF 2-3

LEARNING OUTCOMES

- Become familiar with using tactile design vocabulary to describe product surface textures & forms
- Interpret information into a 3D sketch of an object
- Develop appreciation for all types of sensory perceptions





ACTIVITY GUIDE

Note: In preparation, collect at least 1 **small ornate object** per team. We recommend using buttons, earrings, keys, etc.

1. Give each team 1 **paper bag** containing a small ornate object
Tell the players not to look inside the bag
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stop watch or timer** to keep track of time
Tell players they have 10 minutes to complete steps 1-4
4. **At 10 minutes**, tell players to switch the roles of descriptor and sketcher(s)
When players switch roles, give each team a new bag containing a different object
5. **At 20 minutes**, tell players to switch roles again if they are in teams of 3
Once again, give each team a new bag containing a different object
6. Finish the activity once each team member has had a turn being the descriptor, and let players reflect on the terminology learned



FEELING SKETCHY?



CATALYZE

Explore product surfaces by isolating the sense of touch.
Develop a sense of empathy in regard to sensory deprivation.

SUPPLIES

- Bag
- Small object with ornate surfaces
- Paper & pen

INSTRUCTIONS

In teams of **2 or 3**, assign the role of **descriptor** to 1 teammate & the role of **sketcher** to each of the remaining teammates

1. Without looking, have the **descriptor** reach into the bag and feel the object inside
2. The role of the descriptor is to describe the object that they are touching in detail
Describe the general form, abrupt surface discontinuities, continuous 3D surface contours, and the orientation of the surfaces
3. The role of the **sketcher(s)** is to draw the object being described
Draw the described object in 1 or 2 views (e.g. top, bottom, or perspective)
4. When sketches are complete, take the object out of the bag to compare to the drawings
How accurate are the drawings to the actual object? What challenges did the descriptor and sketcher(s) encounter due to not being able to see the object?
5. Collect a new object, **switch** the roles of descriptor and sketcher(s); repeat **steps 1-4**
Repeat the above until all team members have been the descriptor
6. In your teams discuss and reflect on the terms learned in the activity
How helpful are these terms in making design decisions or articulating design features?

GENERAL FORM Cylindrical, rectilinear, geometric, organic (Walker, 1995)

ABRUPT SURFACE DISCONTINUITIES Edges & holes (Walker, 1995)

CONTINUOUS 3D SURFACE CONTOURS Curved vs. flat (Walker, 1995)

ORIENTATION OF THE SURFACES Horizontal, vertical, slanted (Walker, 1995)



CATALYZE ACTIVITY

HIGH TENSION

... is a fast paced, catalyzing ice breaker, especially useful when players may feel uncomfortable if asked to design something. By asking players to brainstorm together about a product that has an unusual or conflicting set of characteristics, players can engage in the activity without feeling that they have to create something flawless.



EMOTION &
MEANING



15 MINUTES/ROUND



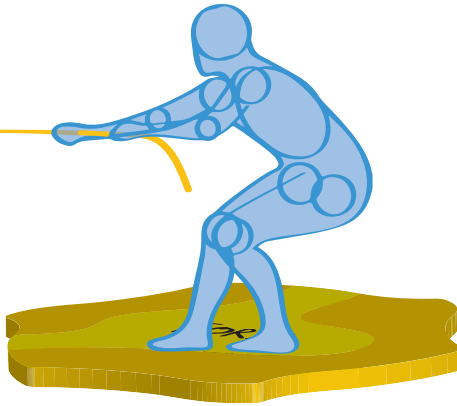
TEAMS OF 3-4

LEARNING OUTCOMES

- Think critically about product design
- Compare product attributes
- Practice creating visual tension & harmony

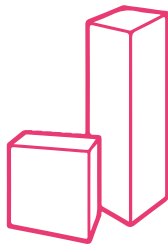
The conflict in the characteristics creates *tension* in the design, as in a “give-and-take” between elements. By playing with tension, participants are introduced to the conflicting aspects of design composition and users’ perceptions.

The Game



The game play starts off with a round in which players must scramble to find a Sense-It! Tile that is dissimilar to the one that was provided by the “judge” participant. The second part of the game is where the players must be silly and creative, and apply these sensory attributes to the product they have selected from the product card deck.

In this example, the attributes rectilinear and messy are applied to the water bottle. The unstable and asymmetrical stacking of rectangular sections adds to the perception of messiness, as does the scribbled, multicoloured pattern.



RECTILINEAR

+



MESSY

+

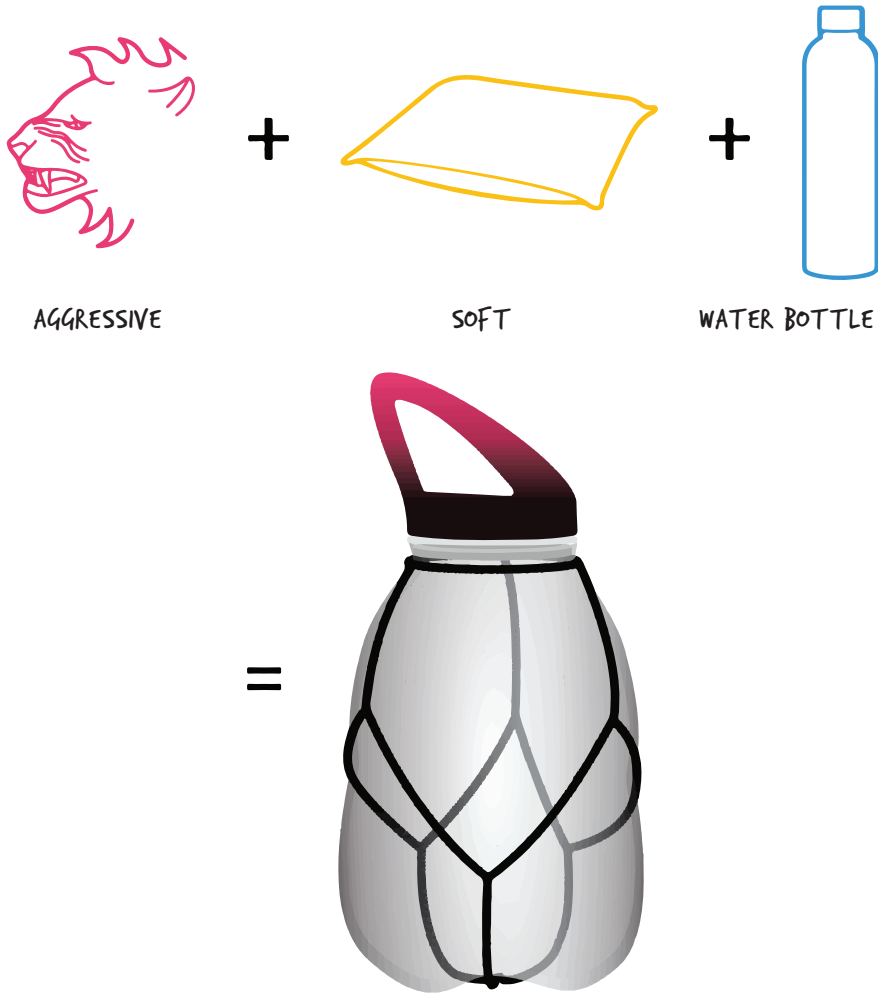


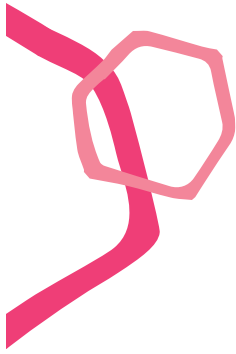
WATER BOTTLE

=



In this example, the product is a water bottle and the attributes are aggressive and soft. The body is constructed with pliable silicone, but the softness of the body is undercut by the cords that deform the rounded shape. The colour choices and the asymmetrical and pointed form of the handle increase the sense of aggression.





ACTIVITY GUIDE

1. Distribute even amounts of **Tiles** between teams, and give each team at least **1 Product Card**
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stop watch or timer** to keep track of time
4. **At 5 minutes**, ensure players have moved onto **step 4** and are brainstorming
5. **At 10 minutes**, let players know that they have 2 more minutes to brainstorm
6. **At 12 minutes**, begin the elevator pitch presentations
Give each team 2-3 minutes to allow them to explain their product concepts, focusing on the tension within the formal composition
7. If time allows players may play additional rounds, **OR** begin a discussion of the process that the team used to address the tensions they were working with, and why the players chose to create the products that they did
This is an opportunity to relate the exercise to a broader discussion of tension in design



SLOW

TACTILE

HIGH TENSION



CATALYZE

Understand how sensory attributes contribute to or detract from the product's overall perceived cohesiveness.

SUPPLIES

- Sense-It! Tiles
- Sense-It! Product Cards
- Paper
- Pens

INSTRUCTIONS

In teams of 3-4,

1. One teammate (the judge) picks a **Tile** from **any** category
All Tiles should be placed face up in the middle of the table
2. In **15 seconds** (counted down by the judge), all other teammates race to pick a Tile from **any other** category that **creates tension with** the first Tile, and then place the pieces in the centre face down
This attribute from a different category should contrast with the original piece
3. The judge reads out each Tile and chooses the answer that **conflicts the most with the first Tile**
E.g. if the original piece was "sticky" (tactile), the judge may pick "neat" (visual), or "fresh" (taste and smell)
4. Randomly select a **Product Card**. As a team, brainstorm how your **2** sensory attributes (the original attribute and the one that creates the most conflict) could be applied to a new design for your selected product
Brainstorm by discussing, sketching, and ideating
5. In **1-2 minutes**, teams give an elevator pitch for their new product
E.g. if the team designed a "stubby" and "flexible" bicycle, what would it look like? How would it be used? Who would be the target user group?

TENSION Is the interplay of conflicting elements and can generate interest and energy.

When is tension disruptive and when is it good? How much tension contributes to a more dynamic product and how much harmony is boring? Can both of these principles be integrated into the same product? How would it be done?

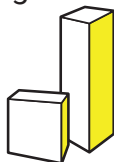




CATALYZE ACTIVITY

IN-FORM-ATION

... asks participants to study form factors of various products. The objective of the activity is to practice visually identifying elements of a product according to its axis placement, composition, and form. The **form** contributes to the product perception and can be separated into 3 categories:



RECTILINEAR



CURVILINEAR



ORGANIC

There are 2 types of axes that can be found in an object. A **static axis** is usually vertical, horizontal, or orthogonal. A **dynamic axis** indicates movement and can disrupt the balance and symmetry of the product.

VISUAL
PERCEPTION



30 MINUTES



INDIVIDUAL

LEARNING OUTCOMES

- Assess product form factors
- Label types of axes
- Analyze compositions

Composition is a structure, arrangement, or organization of design elements into a perceived whole and it can include a variety of proportions.

Overall proportions: overall horizontal or vertical design.

Inherent proportions: refers to the organization of elements in a formal group with respect to length, width, and depth.

Comparative proportions: small to large, single to multiple.

The golden ratio: often stated as 1 : 1.618, occurs frequently in many natural objects, and has been applied to many industries such as design, architecture, and art.



OVERALL



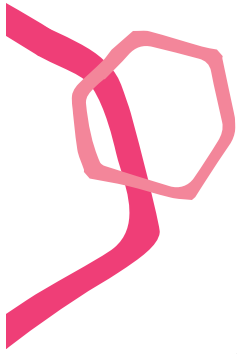
INHERENT



COMPARATIVE



GOLDEN RATIO



ACTIVITY GUIDE

1. Distribute **1 Product Card** per player
2. Read the **Activity Card** out loud to the player
Ensure that all players understand the activity
3. Start the activity and use a **stop watch or timer** to keep track of time
Tell players that they have 20 minutes to finish steps 1-4
4. After the players finish steps 1-4, ask them to assemble into teams of 3-4, present their sketches, and **explain how** they categorized the formal composition of the product and its elements
5. If time allows, discuss the process, focusing on how the players chose to classify form
This is an opportunity to relate the exercise to how form contributes to the product's perceptions

IN-FORM-ATION



CATALYZE

Analyze the form of products, and how that form contributes to the product's perceptions.

SUPPLIES

- Sense-It! Product Cards
- Paper
- Pens
- Internet

INSTRUCTIONS

Individually, pick out a Product Card **OR** find an image of a product from the Internet

1. Using pens and paper, sketch or trace a **simplified version** of the product's form
The product may consist of one main shape or many different elements
2. On your sketch, indicate the **product's axis** with a dotted line
There may be 1 axis, or multiple different axes depending on how many elements compose the overall product
3. To help you understand the product's form from all angles, sketch **orthogonal views** of the product
Sketch the top view, front view, & side view
4. Label your drawing, describe the form and composition using the descriptors below and indicate whether it has a **static** or **dynamic axis**
If the product consists of many different shapes together, describe each of the shapes
5. Get together with **3 or 4** other people and present your sketches. Explain how you categorized the formal composition of the product and its elements

FORM DESCRIPTORS

- | | | |
|---------------|---------------|---------------|
| • Organic | • Trapezoidal | • Segmented |
| • Rectilinear | • Pyramid | • Continuous |
| • Curvilinear | • Blobby | • Elongated |
| • Triangular | • Geometric | • Cylindrical |
| • Oblong | • Stubby | • Ovoid |
| • Conical | • Round | |



CATALYZE ACTIVITY

KINETIC CHARADES

... is a fun and fast activity that asks participants to embody kinetic product interactions. The goal of the activity is to gain an understanding of how different types of movement can be applied to product design. Accordingly, Kinetic Charades is an adapted version of the word guessing game, charades, which asks participants to act out a given product and its movement(s).

Bodystorming

Acting out a product's series of movements is a form of bodystorming. This is a communication tool that uses body language such as changing positions and gesturing. If applicable, movements can be portrayed sequentially or as different stages of product interactions.

MULTISENSORY
& KINETIC
EXPERIENCES



15 MINUTES



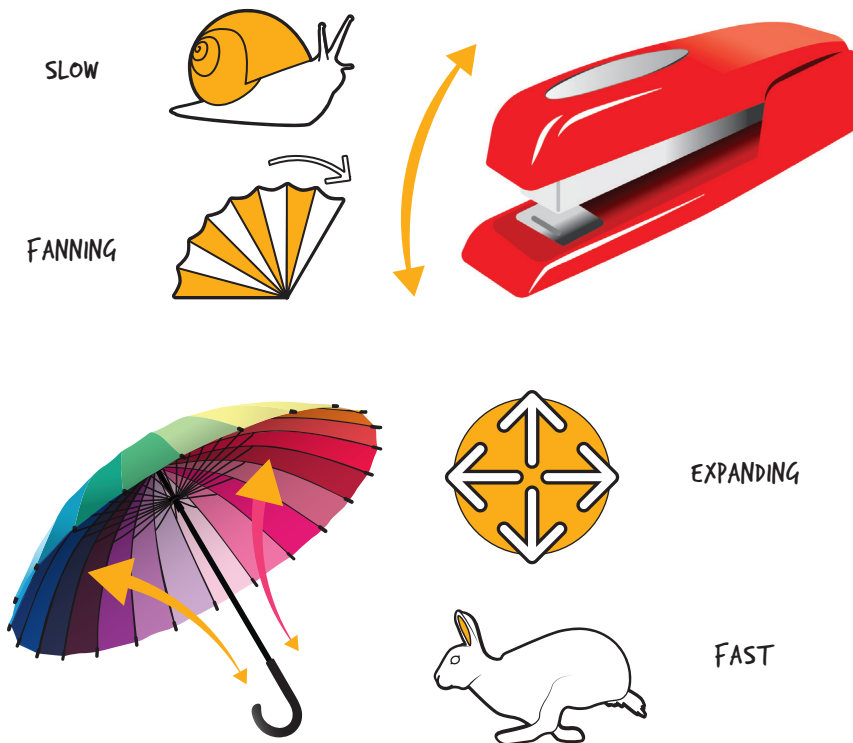
TEAMS OF 8-10

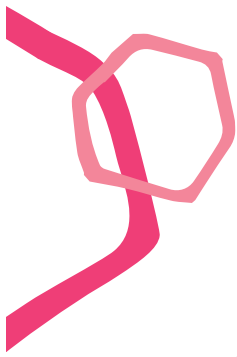
LEARNING OUTCOMES

- Identify types of kinetic patterns
- Interpret patterns of kinetic actions
- Produce product movement

Recognizable Kinetic Forms

Kinetic Forms describe patterns of movement. In *Focus on Designing*, Hubel and Lussow (1984) categorize these as rate, size, shape, direction, and character.





ACTIVITY GUIDE

1. Prior to the activity, pick the right **Product Cards** (refer to Product Card Bank, p.212)
2. Gather players into groups of **8-10 people**
Then divide each group into Team A and Team B
3. Distribute at least **25 Product Cards** to each team
4. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
5. Start the activity and use a **stop watch or timer** to keep track of time
6. **At 15 minutes**, finish the activity
7. If time allows, **discuss** the players' experiences playing Kinetic Charades
Was it hard? Easy? What makes a kinetic product interaction recognizable?

KINETIC CHARADES



CATALYZE

Develop an understanding of different types of product motion through the embodiment of their kinetic interactions.

SUPPLIES

- Sense-It! Product Cards (see p.212 of Guide)

INSTRUCTIONS

Gather into teams of **8-10**, then divide members into **Team A & Team B**

1. **2 players** from Team A go to the front and take **1 Product Card**
Do not let anyone else know what your Product Card is.
Discuss with your partner how to act it out as if you were the product
2. Set the timer for **30 seconds**; **1 or both** players act as if you are the product by imitating its movement(s)
Do not speak! Use body gestures!
Only players from the actors' team are allowed to guess the product
3. If the product is guessed correctly, the actors' team gets a point
If there is still time left on the timer, a new pair of actors from the same team can take a new Product Card to act out
4. If the timer sounds after **30 seconds** and the product has **not** been guessed correctly, no one gets a point
The actors return to their team
5. Team B takes a turn repeating **steps 1-5**
Take turns alternating, one at a time
6. The team with the most points at the end of the game wins!

KINETIC DESIGN IN PRODUCTS

"When movements are organized together in time, certain patterns result that have a recognizable form"
(Hubel & Lussow, 1984)





CATALYZE ACTIVITY

LINE IT UP!

... is used as an introduction to the evaluation of products and their sensory attributes along spectrums.

A product can be perceived as either 'aggressive' or 'friendly', but most products live on a spectrum between the two.

There are a number of sensory attributes that determine why a product is perceived a certain way — it could be a matter of form, colour, movement, auditory features, scent, material, or overall product personality, among many others. It is important for designers to reflect on how their products are perceived, and ensure that this perception fits to the product and its context.

Line it Up! encourages participants to reflect on the perception of certain products and how they relate to others. Drawing direct comparisons and reflecting on the difficulty, relevance, and effectiveness of different comparative spectrums helps participants make connections between products and how they are perceived.

EMOTION &
MEANING



20 MINUTES

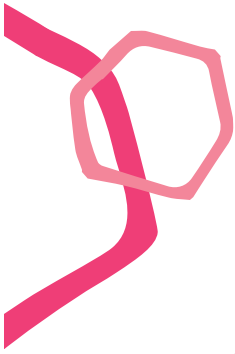


TEAMS OF 4-5

LEARNING OUTCOMES

- Differentiate among products using multiple sensory lenses
- Compare product attributes along a spectrum





ACTIVITY GUIDE

1. Spread the deck of **Product Cards** and **Tiles** face-down on a table
Each player will randomly select 1 of each
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stop watch or timer** to keep track of time
4. **At 5 minutes**, tell players that they should move on to a new spectrum
Ensure that they first finish the spectrum they are currently working on
5. Finish the activity once every team has completed all the spectrums they could with everyone's sticky notes

LINE IT UP!

MESSY

CATALYZE

Broaden the scope of product evaluation through as many sensory lenses as possible.

SUPPLIES

- Sense-It! Product Cards
- Sense-It! Tiles
- Sticky notes
- Pens

INSTRUCTIONS

In teams of 4-5, players each **randomly** take 1 Tile & 1 Product Card

1. Each player writes down the sensory attribute from the Tile on 1 sticky note and an **opposing attribute** on another
E.g. if you wrote "rectilinear" on your first sticky note, you might write "curvilinear", "organic", or "blobby" on your second
2. In turns, each player places their pair of sticky notes on the table about 2 feet apart
This represents a spectrum from one to another
3. Starting with the person who placed the first pair of sticky notes, take turns placing your Product Cards **where you believe they should be** along this spectrum
Briefly explain why your Product Card belongs in that position
4. Repeat **steps 1-3** to create new spectrums until everyone has placed their sticky notes on the table
5. **Reflect** on the process
Were some spectrums more difficult to evaluate than others? Were some irrelevant?
Were any surprising? Were there any "hidden" qualities to be found in your products?

OPPOSING ATTRIBUTE EXAMPLES

- | | |
|-----------------------|-------------------------|
| • Rough/Smooth | • Masculine/Feminine |
| • Vibrant/Dull | • Messy/Neat |
| • Friendly/Aggressive | • Static/Dynamic |
| • Simple/Complex | • Harmonious/Discordant |
| • Playful/Serious | • Colourful/Muted |
| • Reflective/Matte | |

KINETIC



CATALYZE ACTIVITY

MEANINGFUL DESIGN

... prompts participants to explore different ways in which a product can be designed to express meaning.

Design can be made to convey/evoke a variety of emotions. Emotionally sustainable design is important to ensure a long-term relationship between users and their products.

Certain design elements may be adapted to enhance emotional experiences, such as:

- a) **visual appearance** – size, shape, colour, composition
- b) **sensory engagement** – sound, feel, smell, taste
- c) **dynamic interaction** – memories, surprises, relationships

Meaningful Design encourages participants to consider the different emotional design elements in an iterative exercise of changing an existing product into a more meaningful one.

EMOTION &
MEANING



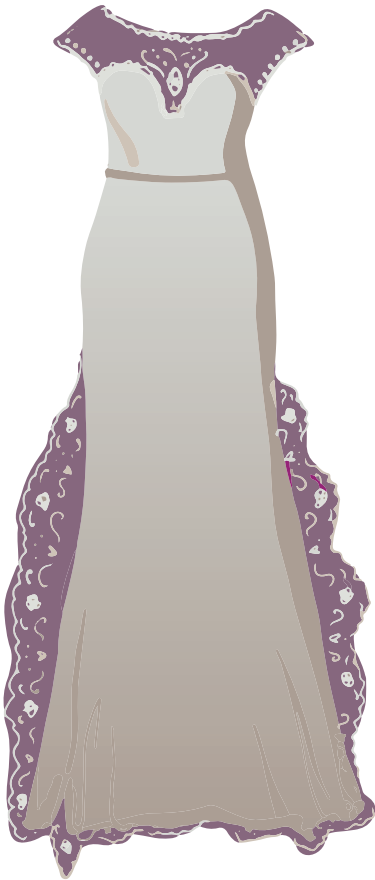
20 MINUTES



TEAMS OF 3-5

LEARNING OUTCOMES

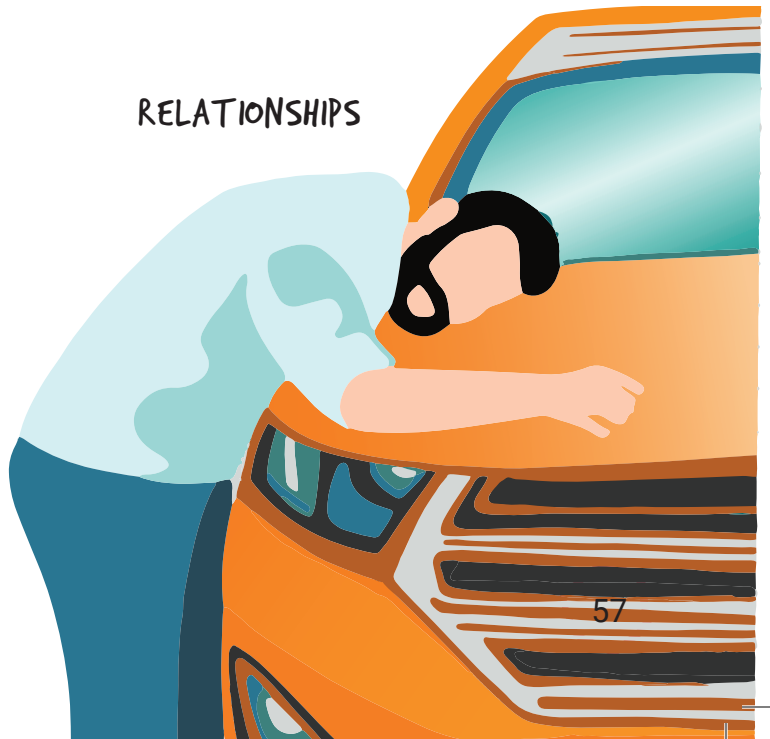
- Discuss how memories, associations, and emotions create bonds between people and their products
- Practice altering product shape and form



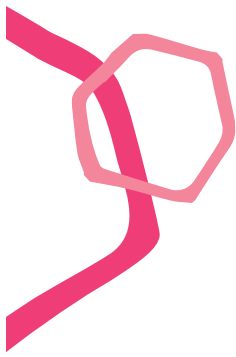
MEMORIES



FEEL



RELATIONSHIPS



ACTIVITY GUIDE

1. Spread the deck of **Product Cards** face-down on a table
Each team will randomly select 1
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity.
Emphasize to the players that they should only be answering instruction step 1 or 2
3. Start the activity and use a **stop watch or timer** to keep track of time
Tell players they will have 15 minutes to complete the activity before presenting
4. **At 10 minutes**, let players know that they have 5 minutes left to complete all of their iterations
Ensure that they have at least 5 different iterations
5. **At 15 minutes**, begin 1 minute presentations
6. If time allows, begin a discussion about how design elements can make products carry different meanings

MEANINGFUL DESIGN



CATALYZE

Explore how products can be designed to express meaning through properties of shape and form, as well as user memories, associations, & emotions.

SUPPLIES

- Sense-It! Product Cards
- Newsprint
- Markers

INSTRUCTIONS

In teams of **3-5**, pick **1** Product Card. Answer instruction step **1** or **2** below to make your selected product more emotionally charged. Generate **5-10** product iterations.

1. Change properties of shape and form to make your product more **meaningful**
E.g. composition, line, colour, size, & proportions

OR

2. Make your product evoke user memories, associations, and/or emotions
E.g. modern design vs. old-fashioned design
3. Present **1** new product iteration
Keep presentation under 1 minute!
4. Discuss with the other teams why meaningful design is important
How can meaningful design be achieved?

PROPERTIES OF SHAPE & FORM

Meaning can be expressed through the shape and form of a product.
E.g. Composition, line, colour, size, & proportions

MEMORIES, ASSOCIATIONS, EMOTIONS

A product can evoke a user's memories, associations, and emotions through sensory aspects of design.
E.g. Familiar smells, iconic shapes, metaphors



CATALYZE ACTIVITY

MYSTERIOUS PRODUCT

... is an ice breaker that encourages participants to consider and evaluate the many types of product attributes that contribute to the overall user experience of a product. In addition, this discussion-based activity will help participants develop a vocabulary to describe product attributes.

Products embody a variety of sensory information, for instance: visual, tactile, auditory, taste, smell, kinetic, etc.

A user's product experience will ultimately be shaped by how he or she perceives that incoming sensory information. Thus, understanding how to modify a product's sensory attributes is a valuable tool for a designer.

INTRODUCTION



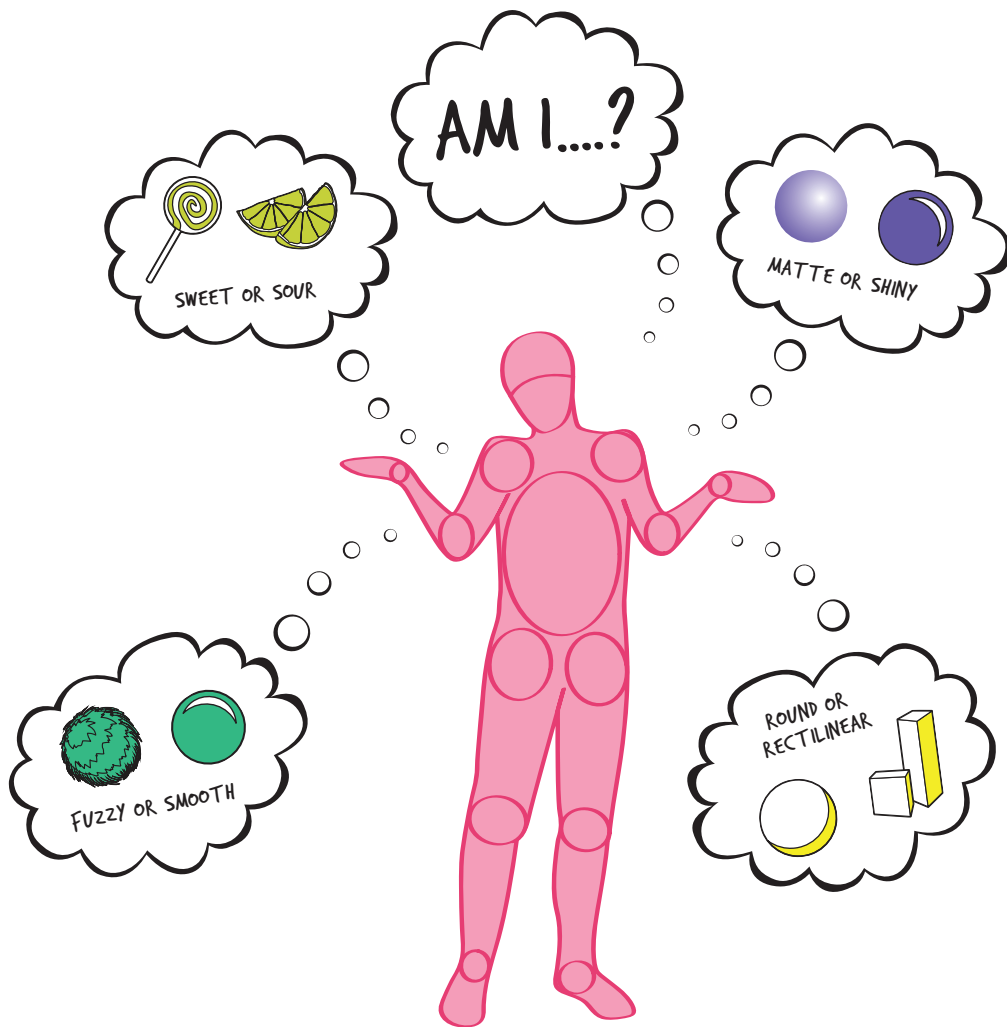
30 MINUTES

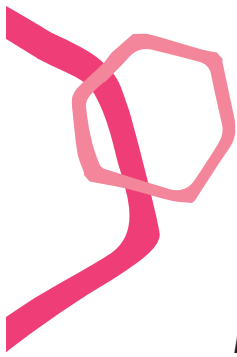


INDIVIDUAL

LEARNING OUTCOMES

- Practice using sensory design vocabulary
- Make an informed guess based on sensory product attributes





ACTIVITY GUIDE

Note: This activity requires the facilitator to prepare Product Senses Tables for the players (see Accompanying Resources).

1. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
2. Spread the deck of **Product Cards** face-down on a table & provide 1 clip per player
Have players clip Product Cards on each others' backs. Emphasize that they should not know what card is on their back
3. Start the activity and use a **stopwatch or timer** to keep track of time
Let players know they have 20 minutes to mingle and complete steps 1-5
4. Start the activity and let players mingle
5. Display a set of **Product Cards** that are identical to those that are being used in the activity
We suggest showing the identical Product Cards on a screen or printing them out
6. Only let players guess the identity of their mysterious product once they have **filled out information for all 7 categories**
7. Finish the game once all players have guessed their mysterious product

MYSTEROUS PRODUCT

MYSTEROUS PRODUCT



CATALYZE

Practice categorizing sensory product attributes and apply product attribute vocabulary in discussions.

SUPPLIES

- Sense-It! Product Cards
- Clips
- Paper & pen
- Product senses table

INSTRUCTIONS

Individually,

1. Take **1 product senses table** and take note of the **7 categories**:
Looks like, Sounds like, Feels like, Tastes like, Smells like, Moves like, & Perceived like
2. Without looking, take **1 Product Card** and have another player clip it on your back
Do not look at your own Product Card!
3. Circulate and ask other players **yes-or-no questions** about your mysterious product
Answer other players' yes-or-no questions about their own Product Cards in exchange
4. Gather information about your mysterious product from all **7 categories**
Record your notes on your product senses table
5. Try to **guess** the identity of your mysterious product once you have gathered information from all **7 categories**
6. Reflect as a **group**
Which sensory attribute made it easier to guess?

SENSORY PRODUCT ATTRIBUTES

Characteristics that describe unique sensory experiences and makes a product distinct from other products.



CATALYZE ACTIVITY

SENSORY INVENTORY

... is an introductory activity that helps participants identify and analyze different aspects of sensory inputs. The goal of the activity is to show how your senses integrate to create rich experiences.

There are a number of sensory attributes that determine the overall experience of a location. It could be a matter of lighting, colours, sounds, textures, or smells that add to the perception of a place. For example, some people might prefer going to a diner for lunch because they like the smell of food, which makes them anticipate the meal. On the other hand, some people might enjoy the diner due to the comfy chairs and a quiet atmosphere which is great for relaxation.

Sensory Inventory encourages participants to look around and notice how designing for all of the senses can influence perceptions of places and the things within them.

INTRODUCTORY



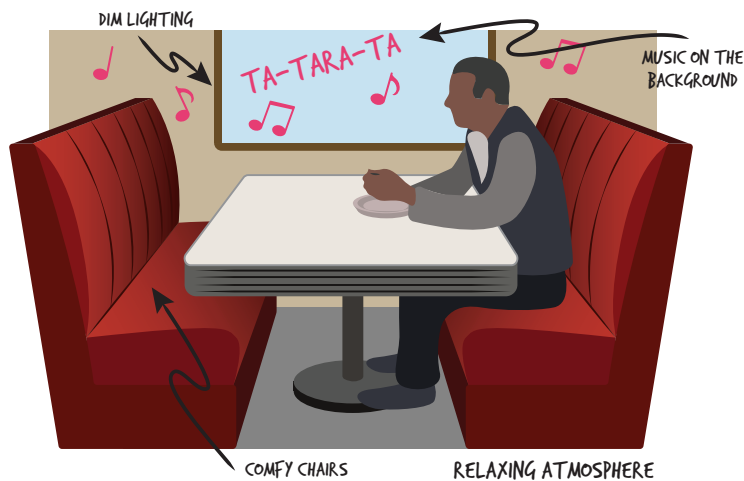
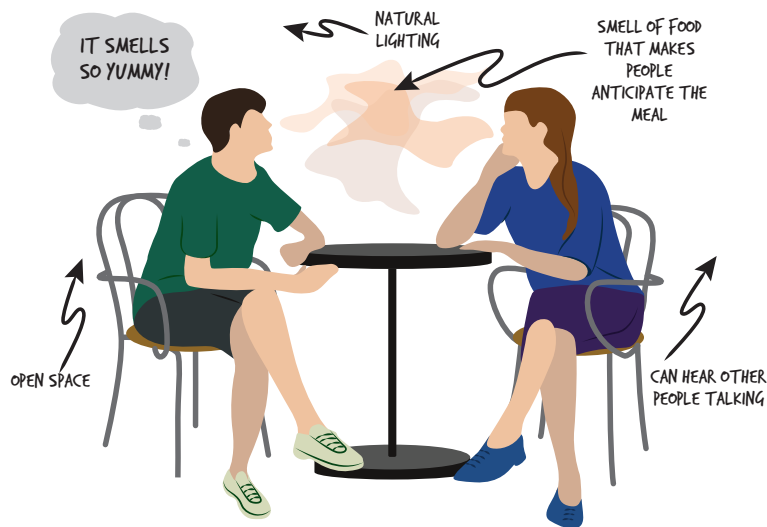
30 MINUTES

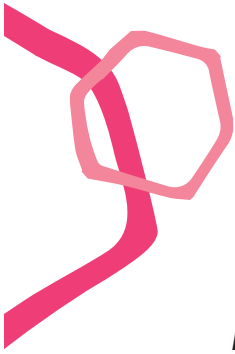


TEAMS OF 2

LEARNING OUTCOMES

- Develop conscious awareness of the sensory inputs
- Understand how designers can work with sensory features to generate rich experiences
- Appreciate the complexity of sensory perception and design





ACTIVITY GUIDE

Note: This activity requires the facilitator to prepare a list or a map showing locations for the players and print the Sensory Inventory charts (see Accompanying Resources) in advance.

1. Ask players to gather into teams and distribute **Sensory Inventory Charts**

Ensure at least one player has a Sensory Inventory Chart

2. Read the **Activity Card** out loud to the players

Ensure that all players understand the activity

3. **Assign** a nearby indoor/outdoor **location** to each team

E.g. a park bench, gym, an office, a convenience store...

4. Start the activity and use a **stop watch or timer** to keep track of time

Ensure teams know they only have 15 minutes to complete steps 1-3

5. **At 15 minutes**, have teams return and start the **discussion** mentioned in **step 4**

This is an opportunity to relate the exercise to how our senses contribute to the perception of experiences

SENSORY INVENTORY



CATALYZE

Gain an awareness of how all your senses are integrated to create rich experiences with your surroundings.

SUPPLIES

- Sensory Inventory chart
- Pens

INSTRUCTIONS

In pairs,

1. Travel to a unique location and take **2 minutes** to just take everything in. Note your **First Impressions** in the **Sensory Inventory chart**
Look all around, breathe in deeply, close your eyes and listen, explore different textures...
2. Take **10 minutes** to analyze your surroundings and complete the **Sensory Tasks** outlined in your Sensory Inventory chart
Try to take note of even the smallest sensory details
3. Return to your starting location and record your **Insights/Emotions** in the Sensory Inventory chart
Think back to your first impressions — have these changed? How would you describe this location to someone else?
4. **Discuss** your insights and levels of sensory awareness in the experience:
Did you notice your perception(s) shifting as you were engaging your different senses?
Imagine if you were to re-design this space or some of the things in it to complement or enrich your sensory experience. What would your design suggestions include?

MULTISENSORY INTEGRATION

Describes how different sensory channels of perception contribute to a multi-layered experience (Park & Alderman, 2018).

DID YOU KNOW?

Neuroscientific research shows that in humans and other species, when an experience that involves two or more senses is judged by our brains as being more important, it is perceived more intensely (Stein & Meredith, 1993).



CATALYZE ACTIVITY

SEVEN!

... is an introductory activity for learning the sensory aspects of design. The activity touches on different types of product attributes and exposes participants to a vocabulary set for describing the sensory aspects of a product. People use all of their senses every day, without even knowing it. This is why designers need to consider how products are experienced from a multi-modal view.

Seven! encourages participants to evaluate products in terms of visual (form & colour), tactile (materials, textures, & haptics), auditory, olfactory, taste, multi-modal (kinetic), and perceptual (emotion & perception) aspects. All of the above contribute to users' overall interpretation of products and experiences.

INTRODUCTION



20 MINUTES

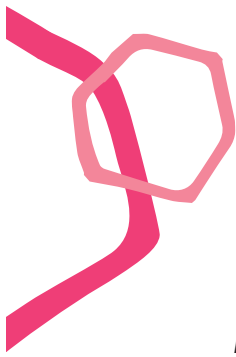


TEAMS OF 2

LEARNING OUTCOMES

- Identify sensory product attributes
- Expand sensory design vocabulary
- Explore how product sensory attributes are experienced





ACTIVITY GUIDE

Note: For this activity players can choose to use physical magazines or online catalogues. Prepare a list of retail stores to assign to the players. These stores should have a variety of products. For example, home decor, hardware, sports, or electronics stores.

1. Spread all of the **Tiles** face-up on a table
Keep each of the 7 categories separate on the table
2. Assign each team a retail store
We recommend providing physical magazines that contain photos of products or encourage players to search catalogues online
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Yell **GO!** to start the activity and let teams race against one another
5. When a team yells **SEVEN!** verify their 7 matches
If the team has successfully matched 1 photo per category, they win!
6. Either finish the activity once a team has won or continue playing until multiple or all teams complete the activity

Home & Garden

SEVEN!



CATALYZE

Become familiar with vocabulary for describing and distinguishing sensory product attributes.

SUPPLIES

- Sense-It! Tiles
- Online retail catalogues
- Pens

INSTRUCTIONS

In pairs, begin with **1 Tile** & assigned online retail catalogues in front of you

1. On **GO!**, browse the catalogues to find a photo in which the product attribute on your Tile is represented (e.g. calm = lounge chair or essential oil diffuser)
Your pair is racing against other teams!
2. When you find a matching photo, save your images with an associated attribute name to share with your facilitator once you are done
3. Keep the **matched** Tile and retrieve a **new** Tile of a different colour
Only take 1 Tile at a time and keep going!
4. The goal is to be the first team to successfully match and collect **1 Tile** from each of the **7 categories**
5. If you find a match for each category in the catalogues, yell **SEVEN!**
The activity leader will check your matches. If all 7 are correct, your team wins!

TILE CATEGORIES

1. Visual
2. Auditory
3. Tactile
4. Taste & Smell
5. Form
6. Kinetic
7. Perceptions



Fashion!



CATALYZE ACTIVITY

SMELL SPECTRUM

... compares the variations in participants' perceptions of scent. In addition, the activity encourages participants to analyze the importance of smell in design and its role in decision making, emotions, and memories.

Individual odour preferences may be learned over time and be culturally dependent. Since people interpret smells differently, similar smells may trigger very different emotional responses, depending on the original context of the smell experience. Most of the smells people adore are directly linked with positive childhood memories—perhaps like the smell of asphalt after it rains or playing in puddles. However, even if an originally pleasant smell was present at the time of a trauma, a person might develop an aversion toward that scent.

SMELL & TASTE
EXPERIENCES



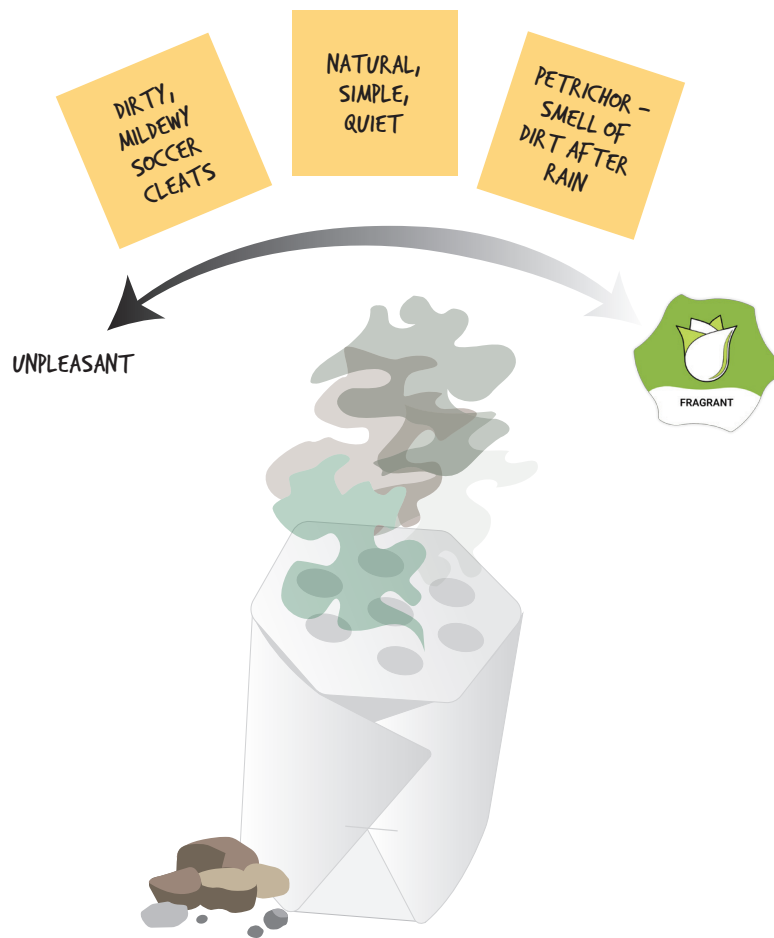
20 MINUTES

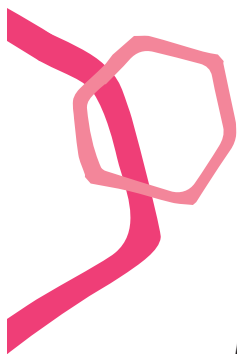


TEAMS OF 4-5

LEARNING OUTCOMES

- Explore the impact of personal associations on perception of smell
- Express scent perceptions in scent terminologies
- Compare smell perceptions along a spectrum





ACTIVITY GUIDE

Note: *This activity requires the facilitator to prepare 1 smell pod (see Accompanying Resources) per team by inserting a scent and a slip of paper with the name of the scent into the pods; all smell pods can contain the same scent or they can contain different scents. We recommend using essential oils, herbs, flowers, dryer sheets, coins, or any aromatic item.*

1. Provide each team with one prepared **smell pod**
2. Lay out all **Taste & Smell Tiles** face-down on a table
Each team will take 1 Tile per smell spectrum
3. Provide each team with 1 sheet of **newsprint paper** and **sticky notes**
4. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
5. Start the activity and use a **stop watch or timer** to keep track of time
Tell players they have 5 minutes to complete steps 1-5 and repeat
6. Finish the activity once all teams have completed **step 6** and have revealed their mystery scents



SMELL SPECTRUM



CATALYZE

Analyze the importance of smell in designing user experiences and its role in decision making, emotions, and memories.

SUPPLIES

- Smell pods
- Newsprint & sticky notes
- Taste & Smell Sense-It! Tiles
- Pens

INSTRUCTIONS

In teams of 4-5, take 1 smell pod, and:

1. Draw a large horizontal line with arrows at each end at the top of a sheet of newsprint
This double headed arrow is a spectrum
2. Take 1 **Taste & Smell Tile** and write its name on the **right side** of the spectrum
Write an opposing attribute on the left side of the spectrum (see examples provided below)
3. Take turns **smelling** the mystery scent that is inside the **smell pod**
Close your eyes while smelling to receive smell information as a primary source
4. Individually, write an **original name** for the scent on a sticky note
The original name could describe the scent or be a memory or association
5. Place your sticky note along the spectrum
Provide a rationale for your placement and an original name for the scent
6. **Repeat** the steps above 4 more times
Use the same scent, but create new spectrums with new *Taste & Smell Tiles*
7. Open your smell pod to **reveal** your mystery scent
Now that you know what your scent is, would you change anything? Discuss.

SPECTRUM EXAMPLES

- | | |
|-------------------------|----------------------|
| • Synthetic - Natural | • Sterile - Dirty |
| • Fragrant - Unpleasant | • Metallic - Plastic |
| • Sharp - Smooth | • Skunky - Odourless |
| • Toxic - Healthy | • Woody - Industrial |
| • Stale - Fresh | |

TASTE
& SMELL



CATALYZE ACTIVITY

SMELL WALK

... asks participants to engage in short “smell-walks”, and practice both “smell catching” and “smell hunting”.

Smell, an often-neglected factor in the design of urban spaces, has the ability to connect us with our environment. According to research from Auracell (2020), “people remember 35% of what they smell, compared to just 5% of what they see, 2% of what they hear, and 1% of what they touch”. Consider how the impacts of the fragrant, the foul, and even the deodorized can alter how people experience cities.

In an effort to gain a better understanding of how individual sensory systems react with environmental smells, Kate McLean (2018) develops maps of urban smells. She leads smell-walks, where participants record and categorize types of smells in different cities. Modelled after her experiments, this activity requires participants to record smell sources on their walk and practice naming different smells.

SMELL & TASTE
EXPERIENCES



60 MINUTES

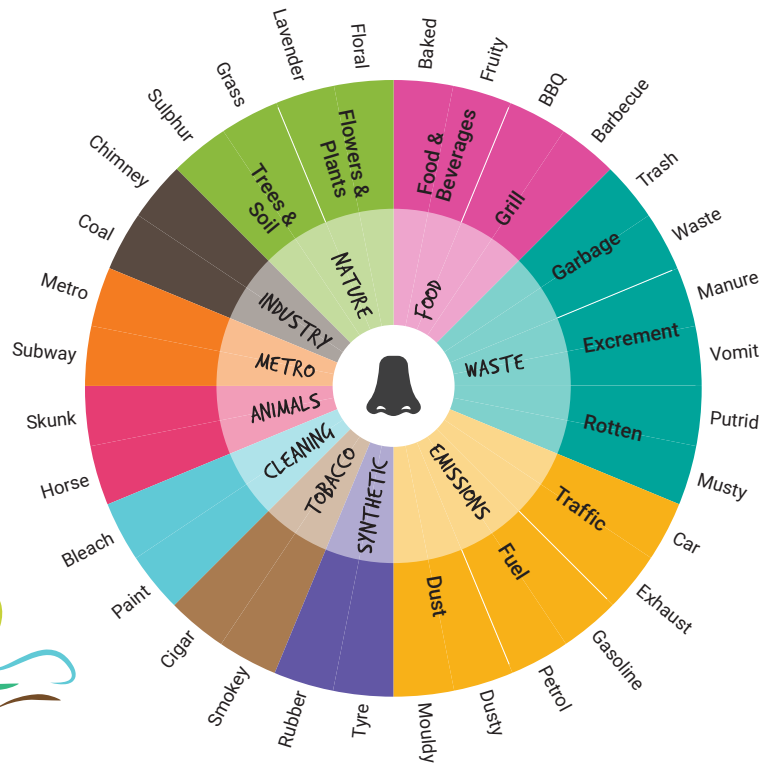


TEAMS OF 3-4



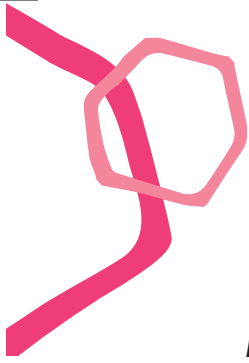
LEARNING OUTCOMES

- Develop smell vocabulary
- Relate smells to particular surroundings and products
- Develop a sensitivity to smells and the messages they communicate



Urban Smellscape Aroma Wheel

Copyright @ Kate McLean.
mcleankate@mac.com.
Sensorymaps.com/@katemclean



ACTIVITY GUIDE

Note: This activity requires players to travel to unique locations. It is recommended that a list of possible options is prepared in advance as inspiration to direct players. In addition, all players will require a “smell record sheet” (see Accompanying Resources).

1. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
2. Hand out a **smell record sheet** to each team member
Ensure that all players understand how the sheet works
3. Provide a **list of possible locations** nearby as inspiration and have each team select a place to travel to
Ensure that each team has chosen a unique location
4. Tell players they have **30 minutes** to complete **steps 1-5** and return to the starting location
5. After players return, tell them they have **10 minutes** to complete **step 6** to prepare for presenting
6. Begin presentations of each team’s smell names
Presentations should be under 1 minute!
7. Finish the activity once all teams have presented, and if time allows, discuss the challenges and benefits of naming smell

SMELL WALK



CATALYZE

Develop a vocabulary for describing smells by interacting with the smells of products around you.

SUPPLIES

- Smell Record sheet
- Paper
- Pen

INSTRUCTIONS

In teams of 3-4, travel to a nearby location and:

1. At the location as a **team**, identify and agree on 3 smell sources through **smell catching**
2. **Individually** engage in **smell catching** for 5 minutes to further analyze the 3 smell sources
Invent a name to fill in the smell catching rows on the Smell Record
3. Return to the **team**, identify and agree on 3 new smell sources within the location through **smell hunting**
4. **Individually** spend 5 minutes to **smell hunt** and to further analyze the 3 new smell sources
Invent a name to fill in the smell hunting rows on the Smell Record
5. **Individually** identify 1 overall smell that summarizes your location
Complete filling in the Smell Record
6. Return to the **team** to discuss the inspiration behind each smell name
Agree on 1 overall summary smell name and prepare a rationale for that smell
7. **Present** the team's overall smell name for that location to the other teams
What is your name based on? E.g. memory, experience, association, etc.
8. **Discuss** the challenges and benefits of naming smell

SMELL CATCHING The act of breathing deeply to receive smell information as a primary source (e.g. smelling from a distance).

SMELL HUNTING The act of seeking smell sources (e.g. getting close to objects, scraping and scratching materials, activating smells in crevices of products).

SMELL NAMING Draw from your memories, experiences, associations, etc.



CATALYZE ACTIVITY

SYNAESTHETIC STORIES

... is an activity that asks participants to interpret individual senses through the use of the other ones in order to develop an awareness of sensory layering in design.

Why do people go to music festivals? There is the tactile sensation of the vibrations of the thunderous music, a dazzling light show, the sweaty aroma of the crowd, the kinaesthetic feeling of dancing along to the music. These sensory layers blend together to create an experience that cannot be recreated in one's living room!



MULTISENSORY
& KINETIC
EXPERIENCES



30 MINUTES



TEAMS OF 2-3

LEARNING OUTCOMES

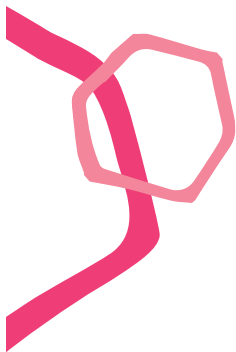
- Analyze sensory design interactions
- Re-interpret perceptions through different senses
- Reflect on the importance of multi-modal design

Synaesthesia is a neurological condition in which sensory input from one sense produces the perception of another sense; colours are heard as different tones, sounds evoke smells, or numbers have a colour associated with them. Evidence suggests that all infants are synaesthetic, and that we lose this sensory overlap as we age (Wagner & Dobkins, 2011).



Even for those of us without synaesthesia, there seems to be a logic around how we experience the layers of sensory channels; discordant tones can be related to a messy environment, or a spiky texture to a sour taste.

Synaesthetic Stories explores the mixing of the senses, and how one sense affects the perception of another. The aim of the activity is to tap into the synaesthetic processes of the mind, in order to create a better consideration of many senses in design.



ACTIVITY GUIDE

1. Distribute even amounts of **Tiles** among team
Ensure that all players are familiar with different Tile categories
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stop watch or timer** to keep track of time
Tell players they have 10 minutes to finish steps 1-2
4. **At 5 minutes**, remind players that they have 5 minutes to finish steps 1-2
Remind players to use their imagination. This activity gives them freedom of exploration, so the end result doesn't have to be practical
5. **At 10 minutes**, ask teams to pair up to share their synaesthetic stories
6. **At 15 minutes**, ensure players are wrapping up guessing and moving onto reflections
7. If time allows players may play additional rounds, **OR** begin a discussion of the process
This is an opportunity to relate the exercise to a broader discussion of sensory layering in design

SYNAESTHETIC STORIES



CATALYZE

Relate separate senses to one another.

SUPPLIES

- Sense-It! Tiles
- Pens
- Paper

INSTRUCTIONS

In teams of 2-3,

1. Randomly pick **1 Tile** from any category and sketch a scenario that illustrates an attribute as a characteristic, an interaction, or an overall perception
E.g. A product might be stubby (characteristic), while its cap might require twisting (interaction), which makes it look a bit quirky (perception)
2. Consider your scenario and amplify it with additional sensory modalities to create a synaesthetic experience
E.g. Instead of "the coffee was piping hot" substitute "the coffee emitted a high-pitched shriek"
3. Get together with a different team and **share** your new synaesthetic stories
Do not give away the original meaning of the sensory attribute or scenario, but tell the other team what the original Tile category was
4. In turns, guess what each team's **original Tile** was
What was easy or difficult to understand? Why? Was each group's interpretation wildly different or spot on?
5. **Together, reflect** on the exercise and **discuss** how the senses work together in product interaction experiences
How does this affect the design of spaces, places, and things?

SYNAESTHESIA

A condition that results in a merging of the senses that are not usually connected (seeing sound, smelling colour, etc.) (Kandinsky, 1910).

SENSORY MODALITY

Light, sound, temperature, taste, pressure, smell, etc.



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TASTE
& SMELL

PERCEPTIONS

FORM

TACTILE

KINETIC

RY

VAL



CATALYZE ACTIVITY

TASTE LAYERING

... uses sandwich cookies to explore ritual behaviours. Many people have experienced eating a sandwich cookie in the past; some may eat the cookie whole, others may dip the cookie in milk, while others may take the two halves apart. Sandwich cookies have been designed to have a complex taste and texture appeal. Lastly, Taste Layering opens up a conversation about ethical considerations of product design – is designing anything that targets human desires manipulative?

- Is forging a strong user attachment always positive?
- How does my design try to influence the user?
- Are there ethical considerations?

SMELL & TASTE
EXPERIENCES



15 MINUTES



TEAMS OF 2

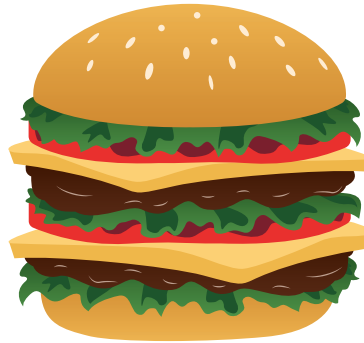
LEARNING OUTCOMES

- Observe unique product-person rituals
- Explore how pleasant sensations are embedded into products
- Describe the importance of multi-modal design layering
- Debate ethical implications of using design to influence people

Hedonism

Generally speaking, people have a natural desire to seek pleasant sensations, while avoiding unpleasant or painful sensations — this is called hedonism.

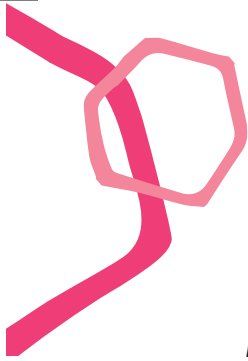
An example can be seen in the phenomenon of overeating, where individuals find pleasure in consuming too much food, which is often unhealthy.



Ritual

A ritual is a sequence of activities involving gestures, words, and objects, performed in a specific environment, and performed according to a set sequence. For example, many people engage in ritualistic behaviour when eating certain foods like “Sandwich cookies”.

Pierre Lévy in *Exploring the Challenge of Designing Rituals*, 2015, highlights that if a designer can understand the daily rituals of their end users, they should be able to design better user experiences.



ACTIVITY GUIDE

Note: *If it is possible, tell players in advance to bring water or milk to the activity. Having something to drink will help clear the players' palettes while eating sandwich cookies.*

1. Put on gloves and distribute **2 sandwich cookies per player** on a napkin/paper towel or a plastic plate
Players are not allowed to eat the cookies yet!
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stop watch or timer** to keep track of time
4. At **10 minutes**, begin the discussion outlined on **steps 4-5** of the Activity Card. Continue the discussion for as long as time will allow

This is an opportunity to relate the exercise to a broader discussion of the appeal of embedding hedonistic values into product attributes

TASTE LAYERING



CATALYZE

Explore how layers of complexity can be built into food to maximize the multi-sensory impact.

SUPPLIES

- Sandwich cookies
- Beverage (e.g. milk) (optional)

INSTRUCTIONS

In **pairs**, read the instructions. Take **2 cookies** each and within **10 minutes** observe the ritual behaviour in the following activity:

1. **One at a time**, eat your first cookie as you may have done in the past
E.g. Do you twist, peel, lick, dunk, or eat the cookie in one bite?
2. While eating your cookie, **describe the steps** to your partner
E.g. "First I do this, second that", and so on. Take note of any rituals
3. Next, **close your eyes** and **listen** as you both eat your second cookies
Focus on your experience. Tune in to all 5 senses
4. Discuss how the cookie was designed with the **intention** of creating appeal
Consider attributes such as user experience and stimulation of senses.
For example, taste can be influenced by mouthfeel, texture, flavour, ...
5. How do you think the food industry manipulates consumers?
Is there an ethical implication in influencing people through design?

DID YOU KNOW?

To identify a desirable mix of attributes, the food industry assembles panels of consumers and professionals to dissect a given product's pleasing qualities. The industry calls this **Fingerprinting**, a technique used to figure out the proportion of which elements will be acceptable to a consumer (Kessler, 2009).



CATALYZE ACTIVITY

THE MATERIAL IS RIGHT!

... prompts participants to explore specific material properties related to weight and warmth by isolating their sense of touch.

Different materials and textures can elicit aesthetic responses to products that affect our perceptions and interactions with them.

Product Experience of Warmth

Warmth refers to either the actual temperature of the object or its association with a sense of comfort, social interaction, energy, and intimacy. It is a multisensory experience, and is heavily dependent on the material properties of a product—especially the material's thermal conductivity and heat capacity. Materials that tend to be referred to as warm are: wood, cotton, and wool.

TACTILE PRODUCT
INTERACTIONS



15 MINUTES



TEAMS OF 2

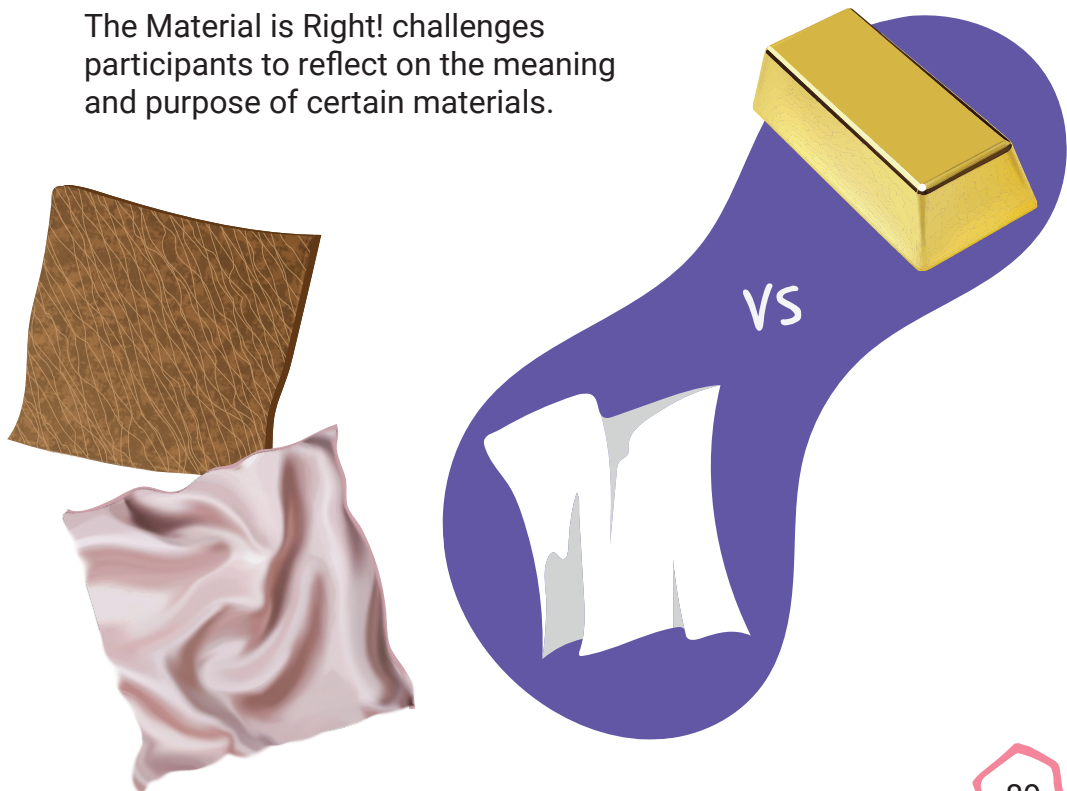
LEARNING OUTCOMES

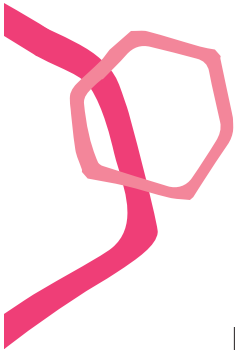
- Identify & describe material properties
- Interpret the perceived value of a material
- Explore how materials can be used to communicate messages about a product surface

Weight Perceived as Value

Heavy items have commonly been characterized as more important; weight can be a signifier of value, quality, and strength. Weight is also closely related to an expenditure of energy, just like how carrying a heavy backpack makes the distance travelled seem much longer.

The Material is Right! challenges participants to reflect on the meaning and purpose of certain materials.





ACTIVITY GUIDE

Note: *Collect at least 2 small material samples per team and put each one in a separate paper bag. We recommend using plasticine/putty, popsicle sticks, fabric samples, small metal pieces, foam...*

1. Provide each team with **1 paper bag** containing a small material sample to start with
Tell the players not to look inside the bag
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stop watch or timer** to keep track of time
Tell players they will have 5 minutes to complete steps 1-4
4. **At 5 minutes**, tell players to switch the roles of descriptor and guesser(s)
When players switch roles, give each team a new bag containing a different object
5. **At 10 minutes**, tell players to switch roles again if they are in teams of 3
Once again, give each team a new bag containing a different object
6. Finish the activity once each team member has had a turn being the descriptor

THE MATERIAL IS RIGHT!



CATALYZE

Reflect on the experience of touch through the exploration of material properties such as temperature and weight.

SUPPLIES

- Brown paper lunch bag
- Material samples

INSTRUCTIONS

In **pairs**, assign the roles of **descriptor** and **guesser**

1. Without looking into the bag, have the **descriptor** touch the object inside (no cheating!)
See if you can explore the object using all: active, passive, and/or interactive touch.
Describe what motions are involved in each (e.g. squishing, gripping, caressing...)
2. Assign the object an abstract monetary value based on how **heavy** or **light** it feels
Use a scale of \$1 - \$10 and explain the reasoning behind your choice
3. Describe how the object's **temperature** makes you feel, both **literally & figuratively**
Is it warm or cold? Does this make you feel comfortable, lonely, enthusiastic? Etc.
4. First, have the guesser try to guess the object's **material**, then take it out of the bag
Was the material right? If not, discuss why you guessed that way
5. Collect a new bag, **switch the roles** of descriptor and guesser, and repeat **steps 1-5**
Repeat the above until all team members have been the descriptor

ACTIVE TOUCH

Touching an object, exploring its properties (Sonneveld & Schifferstein, 2009) .

PASSIVE TOUCH

Being touched by an object, internal sensations, experience in the body (Sonneveld & Schifferstein, 2009) .

INTERACTIVE TOUCH

A combination of both, since they can occur simultaneously (Sonneveld & Schifferstein, 2009) .





CATALYZE ACTIVITY

WHAT IF?

... asks participants to consider looking at products from a designer's point of view. When you see a product, it is hard to imagine it as one of many iterations resulting in the current product. Therefore, when a person sees a product in the store, an overall perception is formed automatically. Perception is influenced by a wide range of sensory qualities. For example, these qualities tell a user something about how durable it is, how technically sophisticated it is, its target user group, and its personality type.

What if qualities were different? When the aspects of a product are dissected, some of them contribute to how they are perceived. Therefore, a designer can begin altering them in order to change the overall perception of the product.

What If allows participants to practice the processes of dissection and reconstruction of a product. The example illustrated here shows how a generic desk fan can be transformed so that it may be perceived differently.

EMOTION &
MEANING



20 MINUTES



TEAMS OF 3-5

LEARNING OUTCOMES

- Identify sensory design features that contribute to product perception
- Adapt products to communicate semantics, symbolism, and personality
- Explore the importance of iterations in product design

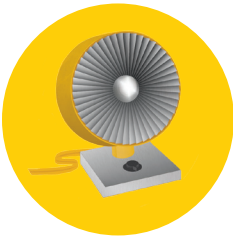
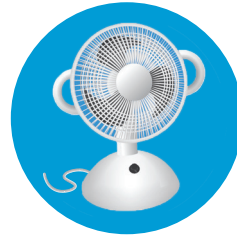


FEELS MORE MODERN

ORANGE COLOUR AND SIMPLE, ROUNDED FORMS
APPROPRIATE FOR A FUN, INFORMAL SETTING

ANTHROPOMORPHIZED

HANDLES ON THE SIDES LOOK LIKE EARS
BASE IS SEMI SPHERICAL AS THE "SHOULDERS"



LOOKS DURABLE AND STRONG

POST IS THICKENED AND SHORTENED
BLADES ARE ENCASED IN A STEEL BODY

LOOKS TECHNOLOGICALLY SOPHISTICATED

BLADES ARE ELONGATED AND SCULPTED
TOUCH SENSOR REMOTE ADDED





ACTIVITY GUIDE

1. Provide each team with **1 sheet of newsprint** or another type of large paper
Encourage players to sketch while they discuss
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Assign an option to each team
Ensure there is a relatively even number of teams working on each option
4. Start the activity and use a **stop watch or timer** to keep track of time
Tell players they should spend 20 minutes to complete the activity
5. **At 10 minutes**, tell players that they should be halfway done the activity
6. **At 20 minutes**, finish the activity

WHAT IF?



CATALYZE

Develop a designer's critical eye for the sensory features that communicate information.

SUPPLIES

- Sense-It! Product Cards
- Pens
- Paper

INSTRUCTIONS

In teams of **3-5**, pick **1** Product Card and review the option that has been assigned to you. Discuss how your product may be improved. Use this discussion to generate **5-10** product iterations.

Choose one of the options below:

1. Make it look more **durable and strong**
Change the material, finish, and form; what elements can contribute to making a product seem durable?
2. Make it look extremely **technologically sophisticated**
Change balance, unity, proportions, and/or surface transitions; how could the product look more high-tech?
3. Redesign to appeal to a different **target user group**
Change form and colour properties; how could the product change to seem more child-friendly or appropriate for professionals?
4. **Anthropomorphize** the product
Change details to create a user-friendly personality by adding human-like features; can the product look more human without looking too literal?

SEMANTIC PROPERTIES

The study of the symbolic qualities of man-made forms in the cognitive and social contexts of their use and the application of the knowledge gained to objects of industrial design (*Krippendorf, 1989*).

ANTHROPOMORPHIZE

Give a non-human object human qualities or personality.



CATALYZE ACTIVITY

WHY SOUND?

... asks participants to create new sounds for products in order to change user's perception about them. Sound has 6 properties: pitch or frequency, timbre, loudness, duration, envelope, and diffusion. All of the above can play a big role in influencing user's experience.

Sound can serve different purposes in products, such as:

Emotion: sound is responsible for the control user's mood

Branding: a specific sound can create a recognizable identity of a company or brand

Anthropomorphism: adding a humanized sound to a product can attract and interest users

Conditioning: changing or directing the behaviour of the user in order to increase purchase of products.

Feedback: either alert, verify, or add to a task.

AUDITORY
EXPERIENCES



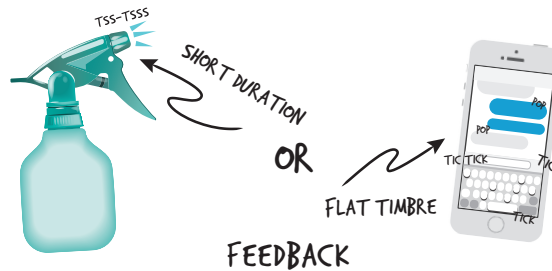
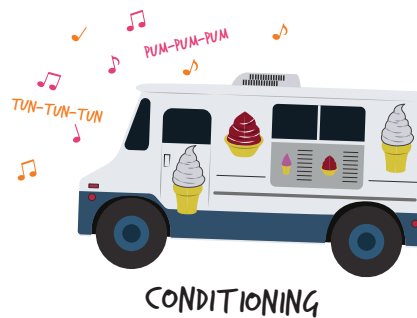
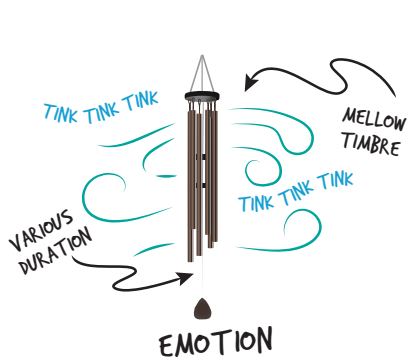
45 MINUTES

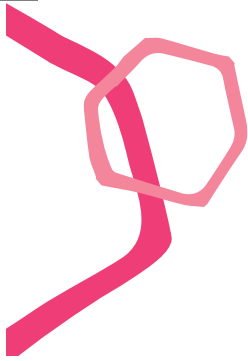


TEAMS OF 3-5

LEARNING OUTCOMES

- Describe specific sound attributes
- Explore purposeful auditory experiences
- Develop a sensitivity to types of sounds





ACTIVITY GUIDE

1. Distribute **1 kinetic product or a Product Card** (refer to *Product Card Bank*, p.213) to each team
Tell the players not to show the Product Card to the other teams
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
4. **At 5 minutes** let teams pick **1 Perceptions Tile** and **1 Auditory Tile** at random
Tell the players they have 15 minutes to come up with new concepts
5. **At 20 minutes** tell players they have 10 minutes to complete **steps 4-5**
6. **At 30 minutes** begin presentations, and discuss for as long as time will allow
Keep presentations under 1 minute!
7. Finish the activity once all the players have presented

AUDITORY

WHY SOUND?



CATALYZE

Consider why products produce sound and how designers can implement purposeful sounds. In addition, explore how sound can be used to change a product's perception.

SUPPLIES

- Sense-It! Product Cards (see p.213 of Guide)
- Sense-It! Tiles
- Paper & pens

INSTRUCTIONS

In teams of 3-5, take 1 Product Card


1. For **5 minutes**, **brainstorm** a list of potential sounds that your product could make
Are the sounds intentional or unintentional?
2. Randomly pick 1 *Perceptions* Tile & 1 *Auditory* Tile
3. For **15 minutes**, brainstorm at least **3** new concepts for your product that all use your perceptions and auditory attributes
E.g. Make a stapler that sounds cute (perception) & loud (auditory)
4. Consider the source and purpose of the sound
E.g. What part of the stapler is making the sound? Why is the stapler making the sound?
5. Take **5 minutes** to create **sounds** out loud for each of your new concepts
E.g. Hum, click your tongue, stomp, drum your fingers
6. Present **1** of your new concepts to the other teams
Keep your presentation under a minute!

POTENTIAL PURPOSES OF SOUND (Özcan & Van Egmond, 2005)

- | | |
|------------------|--------------|
| • Confirmation | • Function |
| • Danger | • Material |
| • Alarm | • Affordance |
| • Welcome | • Safety |
| • Activation | • Semantics |
| • Error | • Surprise |
| • Transformation | • Attention |

LEARN



A thick yellow vertical bar runs along the left edge of the page.

Learn cards help participants see principles from sensory design lectures, or *Sense-It! In essence* chapters, manifested in products that surround them. They are tools for analysis and help solidify principles by showing concrete examples.



LEARN ACTIVITY

CAUSE & EFFECT

... is a fun game in which participants can find the not-so-obvious connections between product attributes and semantic messages.

According to Krippendorff (2006), product semantics are symbolic properties that can convey meaning when users have prior knowledge that enables them to interpret the code. Product semantics can be applied to the qualities or features of products such as form, surface texture, pattern, material, or colour designed with the specific intention to communicate the underlying purpose, environment, or cultural aspects of its use through association.

Cause & Effect encourages participants to explore how different product attributes can affect semantic properties through the use of the Tiles. Participants will learn how to manipulate overall perceptions of products.

EMOTION &
MEANING



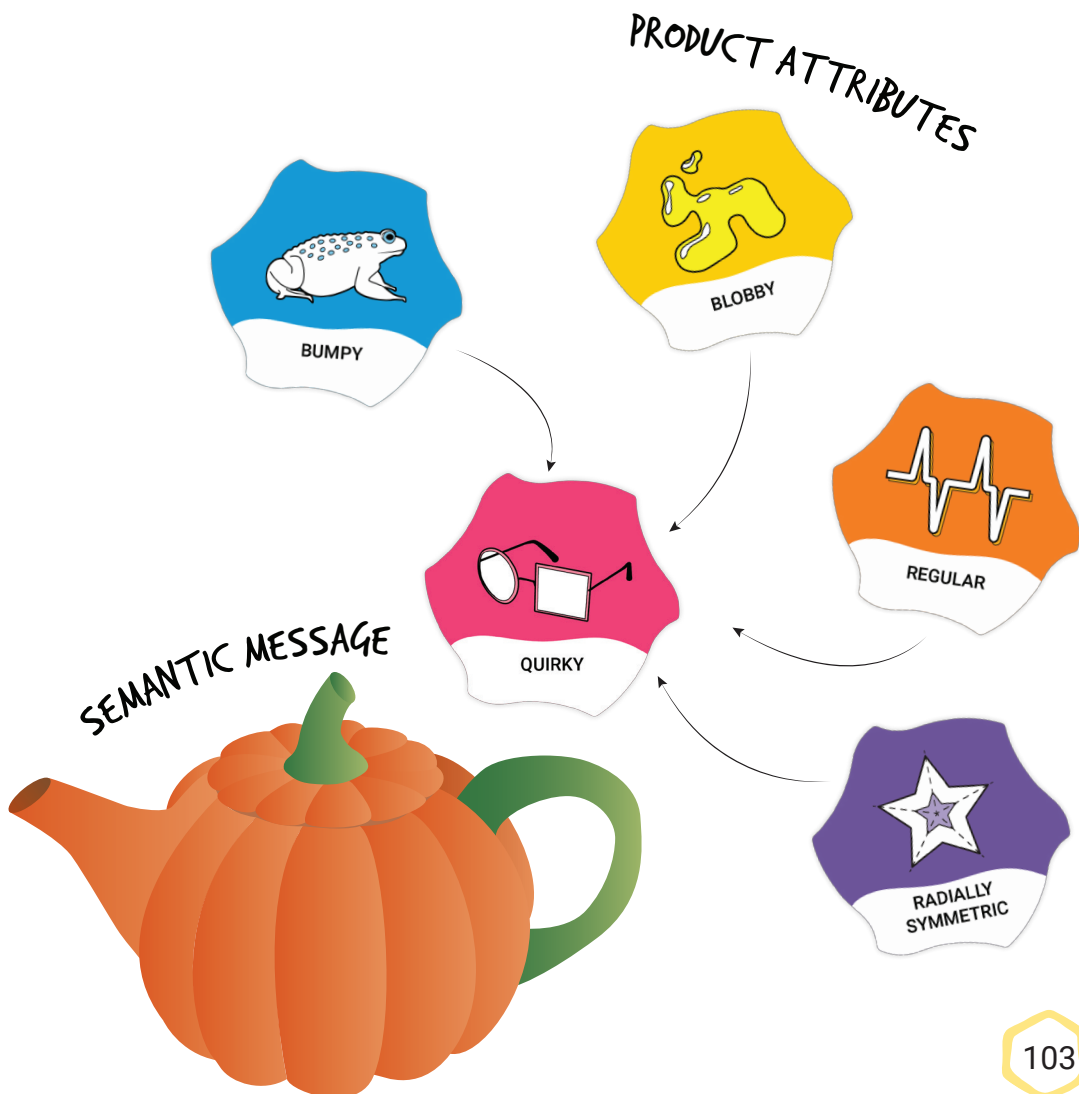
20 MINUTES



TEAMS OF 3-5

LEARNING OUTCOMES

- Describe how product attributes contribute to product semantics
- Examine the effect of attributes on perception
- Think critically about semantic messages and design attributes





ACTIVITY GUIDE

Note: *This activity recommends that the facilitator bring a prize for the winner (e.g. low-value gift card, candy, bag of chips, etc.)*

1. Separate the **Perceptions Tiles** from the other 6 categories
Stack the *Perceptions Tiles* face-down in a pile and spread the remaining 6 categories face-down on a table
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they have 20 minutes to complete the activity
4. **At 20 minutes**, finish the activity
The player with the most *Perceptions Tiles* wins the activity!
5. **Alternatively**, continue playing until a player collects x amount of *Perceptions Tiles*
If the team is small (3-5 players), we recommend playing to 7 *Perceptions Tiles*. If the team is large (6-7 players), we recommend playing to 4 *Perceptions Tiles*

RHYTHMIC

CUT

CAUSE & EFFECT



LEARN

Master the cause & effect relationship of product semantics.

SUPPLIES

- Sense-It! Tiles

INSTRUCTIONS

In teams of 3-5, each player draws **10 Tiles** from any category, **except Perceptions**

1. The youngest player begins as the **judge** and places 1 **Perceptions Tile** face up
The judge reads the perception out loud (e.g. "playful")
2. The **remaining players** each place 1 of their own Tiles that best describes a **cause** for the perceived **effect** (e.g. why is the product playful?)
Play a Tile by joining it, face up, to the judge's **Perceptions Tile**
3. Draw a new Tile each time you play to have **10 Tiles** at all times
All Tiles in the draw pile must be face down
4. Each player must **justify** their answer once all of the Tiles are placed
E.g. provide a rationale for why a colourful product attribute could cause a product to be perceived as communicating a playful semantic message (effect)
5. The judge's job is to select the answer with the **best justification**
The person with the winning answer collects the **Perceptions Tile** from the round & the remaining Tiles can be returned face down to the draw pile
6. Take turns being the judge by rotating clockwise after each round
After 20 minutes, the player with the most **Perceptions Tiles** wins the game!

SEMANTIC EFFECT

Symbolic properties of form can convey meaning when users have prior knowledge that enables them to interpret the code (Krippendorff, 2006).

CAUSE & EFFECT

The relationship in which a product attribute (the cause) creates a product semantic (the effect).



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DISHONEST

FUZZY

ANGULAR



LEARN ACTIVITY

COLOUR COMMUNICATION

... encourages participants to use colour to highlight and give meaning to product affordances in order to facilitate user-product interactions.

Design elements provide the opportunity for a product to communicate non-verbally with the user to enhance their experience. This can make the product more functional, and make affordances more discoverable and understandable. Colour is a powerful communication tool due to the meanings associated with different colours as well as its ability to organize product elements to draw the user's attention. It is important to also consider how users may interpret colour, as the designer is relying on the user to connect a sign with the concept being illustrated. Some of the uses of colour are: ideational, interpersonal, and textual.

COLOUR & LIGHT
PERCEPTION



30 MINUTES

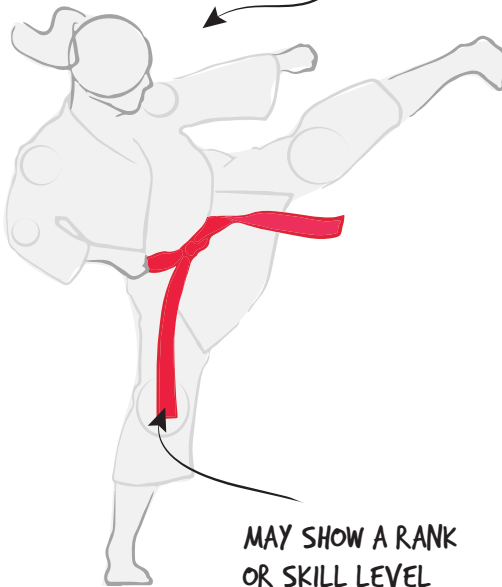


INDIVIDUAL

LEARNING OUTCOMES

- Interpret how affordances can convey different functional messages
- Use colour to emphasize appropriate affordances
- Develop an ability to specify colours

IDEATIONAL:
REPRESENTS PEOPLE,
PLACES, AND THINGS



MAY SHOW A RANK
OR SKILL LEVEL

INTERPERSONAL: DRAWS ATTENTION
TO AN ELEMENT OR INCITES AN ACTION



TEXTUAL: CREATES COHESION
AND ORGANIZES ELEMENTS

Colour Communication allows participants to explore how they can use colour to highlight or give meaning to affordances through either ideational, interpersonal, or textual means. In this way, they reflect on what appropriate uses of colour can be.



ACTIVITY GUIDE

Note: *Because this activity requires coloured markers, the facilitator may have to ask players to bring their own colouring materials prior to the activity. The facilitator can either ask players to sketch their own products, or print out colouring sheets. If colouring sheets are provided, the activity will take 30 minutes; if players are asked to sketch their own products, it may take 45 minutes to one hour.*

1. Hand out paper or (optionally) **colouring sheets** to each player (see www.sense-it.ca/resources)
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they have 20 minutes to complete steps 1-3 before presentations
4. **At 15 minutes**, let players know that they have 5 minutes left to work on their product iterations
5. **At 20 minutes**, ask players to gather into **teams of 3-4** and present their colour choices
6. If time allows, discuss the process, and why the players chose to alter the aspects that they did
This is an opportunity to relate the exercise to a broader discussion of colour semiotics and their uses

COLOUR COMMUNICATION



LEARN

Use colour to communicate product affordances clearly.

SUPPLIES

- Paper
- Pens & coloured markers
- Colouring sheets (optional)

INSTRUCTIONS

Individually,

1. Sketch **1** generic or abstract product that uses **3** different types of **affordances** (see examples below), or alternatively, use a Colouring Sheet
The product's functions can be obvious (e.g. a toaster or vacuum)
2. Assign **functions** to each affordance
E.g. Is the handle used to grip the product? Carry it? Does the button turn it on? Does it start a function?
3. In **2** iterations, practice using **colour as a signifier to highlight and give meaning to these affordances**
How can colour make your product easier to understand? Or more usable?
4. Gather into teams of **3-4** to take turns guessing what others' affordances do and the possible rationale for each colour choice
5. Given the team's comments, **explain** your colour choices
Did the colours you used represent what you intended?

AFFORDANCES

A relationship between the properties of an object and the capabilities of the person that provides clues about how the object could possibly be used (Norman, 2013).

- Button
- Buckle
- Crank
- Handle
- Hook
- Joy stick
- Knob
- Latch
- Lever
- Lock
- Push-to-open door
- Screw-top lid
- Scroll wheel
- Switch
- Zipper



LEARN ACTIVITY

COMPOSITION CREATOR

... dives into typologies of form—the visible configuration of a 2-dimensional shape and/or of a 3-dimensional form. One kind of formal typology includes the axis of orientation, which can visually indicate the main structural position of an object. Two categories of axes exist: static and dynamic.

Composition Creator also explores the hierarchy of relationships between elements, based on Reed Kostellow's (2002) principles. The user's perception of a product's form can be structured using her principles of dominant, sub-dominant, and subordinate placement of elements in a composition.

Finally, Composition Creator asks participants to consider the proportions of the relationships between elements or groups of elements in an objects. Participants will examine overall, inherent, and comparative proportions.

VISUAL
PERCEPTION



30 MINUTES



TEAMS OF 2-3

LEARNING OUTCOMES

- Practice organizing different compositional elements
- Articulate the vocabulary of formal detailing
- Learn the visual principles for iterating compositions





ACTIVITY GUIDE

1. Place small & large **marshmallows & toothpicks** on a table and ask teams to grab supplies. Let players know that they are not allowed to eat the marshmallows yet!
Players will use these materials to create a total of 3 models per team. Players can stretch or change the form of the marshmallows
2. Use paper or sticky notes to create **3 labels**: static axis, dynamic axis, & relationship between elements
Place each label on its own table for players to group their models
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players that they have 5 minutes to complete step 1
5. **At 5 minutes**, tell players to begin step 2
6. **At 10 minutes**, tell teams to place their models on the 3 labeled tables
7. Begin a discussion of **steps 4-6**
This is an opportunity to relate the exercise to a broader discussion of visual composition of products and design vocabulary associated with it

COMPOSITION CREATOR



LEARN

Explore the visual composition of products, and become familiar with design vocabulary associated with axes, relationships of elements within compositions, and proportions.

SUPPLIES

- Small and large marshmallows
- Toothpicks
- Scissors

INSTRUCTIONS

In teams of 2-3, use marshmallows & toothpicks to create 3 models that demonstrate:

1. **The Axis of Position***
Create 2 models showing: (1) a static axis, (2) a dynamic axis
2. **The Relationship Between Elements***
Create 1 model showing: (1) dominant, subdominant, and subordinate elements
3. Come together with all of the teams and group your models based on the 3 types above
Label each group of models (static axis, dynamic axis, relationship between elements)
4. Observe the extent of variations among the marshmallow models
Did every team have similar interpretations of formal detailing?
5. Identify and compare the proportions of the marshmallow models
Discuss the overall proportions, inherent proportions, and comparative proportions
6. Discuss the importance of proportions in product design
What would happen if a product composition was imbalanced or disproportionate?

* **STATIC AXIS** A vertical, horizontal, or orthogonal (right) axis.

DYNAMIC AXIS An axis that indicates movement, often off-kilter.

DOMINANT ELEMENT The most dramatic in character.

SUBDOMINANT ELEMENT Contrasts and complements the dominant; adds another axis.

SUBORDINATE ELEMENT Adds 3-dimensionality and completes composition (unifies).



LEARN ACTIVITY

HIERARCHY

... is an immersive activity that encourages reflection through the investigation of the different stages of product use.

Sensory deprivation is the deliberate removal of stimuli from one or more of the senses. In terms of design, sensory deprivation can be a form of heuristic testing to help designers better understand sensory layering.

Hierarchy employs sensory deprivation tools to allow participants to explore the hierarchy of sensory dominance while engaging in a user-product interaction.

For example, participants might engage in a task such as tying their shoelaces while wearing oven mitts to simulate a deprivation of the tactile dimension of the experience. This task, analyzed through a lens of sensory dominance (i.e. what senses are present in each step of the interaction?), will aid in bringing awareness to multi-modal sensory experiences during user-product interactions.

MULTISENSORY
& KINETIC
EXPERIENCES



65 MINUTES



TEAMS OF 5-6

LEARNING OUTCOMES

- Develop an awareness of the hierarchy of sensory dominance
- Sensitize designers to key points in the user-product interaction cycle where specific senses are important





ACTIVITY GUIDE

Note: This activity requires that the facilitator bring a number of sensory deprivation tools that may have to be purchased in advance. Alternatively, the players could bring their own. We recommend **blindfolds** (could be scarves, bandanas), **nose clips** (could be clothespins), **earplugs** (could be cotton balls), and **mitts** (oven or winter). Please take the steps necessary to make the activity as hygienic as possible.

1. Ensure that each team has **1 of each type of sensory deprivation tools**, and distribute the other supplies
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity and that each player is doing a different user-product interaction wearing their sensory deprivation tool
3. Start the activity and use a **stopwatch or timer** to keep track of time
4. **At 10 minutes**, tell players to switch to another sensory deprivation tool & user-product interaction
Every 10 minutes tell players to switch until each team has used all tools
5. **At 50 minutes**, tell teams to begin **step 7**
This is an opportunity to have a broader discussion about the role of the senses in user-product interactions
6. Once teams have discussed, finish the activity

HIERARCHY

LEARN

Develop an awareness of stages of sensory dominance (Fenko et al., 2009) during product use and discover the roles of different senses during user-product interactions.

SUPPLIES

- Sensory deprivation tools
- Sticky notes
- Pens

INSTRUCTIONS

In teams of 5-6, each member with 1 **sensory deprivation tool** & 1 **user-product interaction**

1. Have 1 team member put on one of the **sensory deprivation tools**
Complete the task at hand while wearing the sensory deprivation tool (e.g. blindfold, earplug, etc.)
2. Divide the task into **stages**; the team member completing the task describes which senses they are using during each stage
E.g. "First I look, then I look and grab..." and so on
3. On sticky notes, the other team members note the stage and senses being used
Write 1 sense per sticky note (not limited to 1 note per stage)
4. Group the sticky notes with the same senses together
Arrange the grouped sticky notes in a hierarchy of sensory dominance
E.g. a list of the most used to least used senses used during the interaction
5. **After 10 minutes**, all teams **switch to another sensory deprivation tool & interaction**
Switch every 10 minutes until every team member has experienced an interaction
6. With the other teams, discuss the roles of the senses during user-product interactions
At what point in the product use cycle were different senses important, and how does that affect the design of the product for different stages of use?

USER PRODUCT INTERACTION EXAMPLES

- Load a stapler
- Tie your shoes
- Unlock a door
- Google something
- Play Tic-Tac-Toe
- Make a phone call
- Write inside your notebook
- Login to a computer
- Listen to music on your phone
- Sharpen your pencil



LEARN ACTIVITY

IN HARMONY

... is a quick activity that asks participants to analyze and alter existing products to evoke different perceptions.

Gestalt Principles of grouping are psychological phenomena that determine how people perceive the arrangement of physical objects. These principles are important for designers to consider when creating compositions of product elements; the elements can be arranged in ways that improve usability through clarity. For example, if a set of buttons are grouped together the user may assume that they have a similar function. Using these principles of organization can also help a product look cleaner and more harmonious, and conversely, the lack of these principles can cause a product to seem chaotic or confusing.

The Gestalt Principles that are used in this activity are closure, continuity, proximity, similarity, and connectivity. By considering these principles, participants can begin to understand why some products are more or less pleasing than others, and how they can create harmonious products.

VISUAL
PERCEPTION



20 MINUTES



INDIVIDUAL

LEARNING OUTCOMES

- Apply Gestalt Principles to create harmonious compositions
- Evaluate how effective changes in composition are in regard to harmony
- Compare the organizing principles that may make product details easier or more difficult to perceive

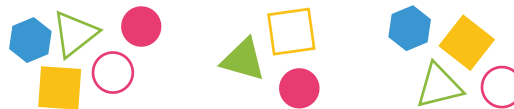
CLOSURE



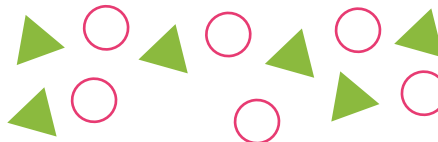
CONTINUITY



PROXIMITY



SIMILARITY



CONNECTIVITY





ACTIVITY GUIDE

1. Prior to the activity, set up all the **Product Cards** (refer to Product Card Bank, p.213), **tape**, **pins**, and **sticky dots** in one place, such as a table
2. Have each player come up and choose a **Product Card** to analyze
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Begin the activity and use a stopwatch or timer to keep track of time
Tell players they have 10 minutes to complete steps 1-3
5. **At 10 minutes**, tell players they have 5 minutes to reflect on their sketches and **pin up** their work
6. Once all players have pinned up their work, instruct them to carry out **step 6**
7. **At 20 minutes**, finish the activity, and if time allows, discuss why certain sketches were chosen as the best representations of most/least harmonious respectively

IN HARMONY

LEARN

Recognize and create harmony in the design of products by applying Gestalt Principles.

SUPPLIES

- Sense-It! Product Cards (see p.213 of Guide)
- Sticky dots, pins & tape
- Paper & pens

INSTRUCTIONS

Individually, pick a **Product Card** that features **3-5** different visual sub-components (buttons, vents, fasteners, etc.) and

1. **Analyze** the product; identify how the composition uses/does not use **5** of the elements of harmony described below
Similarity, closure, continuity, proximity, & connectivity
2. Using these principles, re-imagine the product. Through sketching, make the overall composition **more harmonious** by changing the individual elements or their position
Move, align, or change the shape of these elements
3. Re-imagine the product again, but make its elements **less harmonious**
Ungroup, disalign, or change the shape of the product's elements
4. **Reflect** on the perceptual effects of the changes, and record them under the sketch
Compare the overall impression of these 2 versions of the product
5. Pin up your work as instructed
You should have 1 page for more harmonious & 1 page for less harmonious
6. Select and place sticky dots on the sketches that **best represent** each of the 5 elements of harmony for more harmonious and less harmonious

SIMILARITY Similar elements are perceptually grouped together.

CLOSURE Shapes and letters are perceived as a whole even when incomplete.

CONTINUITY Aligned elements are perceptually grouped together.

PROXIMITY Elements close together are perceptually grouped together.

CONNECTIVITY Connected elements are perceptually grouped together.



LEARN ACTIVITY

JUST ADD TEXTURE

... is a combination of an analysis, exploration, and application of common textures into everyday products.

Most often, user-product interactions are limited to the physical engagement with the outer surface of objects. Thus, a designer's material choices play a crucial role in the way a person perceives a product. Textures and patterns relate to the material properties and structure of their surface (e.g. rough/smooth, soft/hard, sticky/slippery, thin/thick).

Just Add Texture encourages participants to consider a variety of effects that texture can have on user-product interactions. For example, texture can be used as an element to improve grip, indicate affordances, differentiate elements, convey messages or emotions, imply value, create a pleasant (or unpleasant) tactile experience, and much more.

TACTILE PRODUCT
INTERACTIONS



30 MINUTES



TEAMS OF 2-3

LEARNING OUTCOMES

- Create awareness of the importance of texture in design
- Analyze material properties & their inherent textures
- Implement textures to improve user experience





ACTIVITY GUIDE

1. Spread the deck of **Product Cards** face-down on a table
Each team will randomly select 1
2. Provide each player with **3** pieces of **putty** no larger than the size of a ping pong ball
We recommend using Plasticine, Playdough, Silly Putty, or a similar material. Ensure someone in the team also has a phone to take pictures on their search for textures
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Start the activity and use a **stopwatch or timer** to keep track of time
5. **At 7 minutes**, tell players to return to their teams
Each player should have created 3 imprinted textures
6. **At 15 minutes**, tell players to get together with 2 other teams to take turns presenting improved products
7. **At 30 minutes**, the activity is complete

JUST ADD TEXTURE



LEARN

Explore the roles of surface textures in product design, the meanings they convey, and how they can affect user-product interactions.

SUPPLIES

- Sense-It! Product Cards
- Putty
- Texture samples
- Phone (for photos)

INSTRUCTIONS

In teams of 2-3, randomly select 1 **Product Card** and collect 3 pieces of putty per player

1. **As a team**, make a list of the different textures that are on your selected product
What is the purpose of each texture? How coarse or subtle are the textures?
2. **Individually**, take **5 minutes** to search for 3 objects whose textures could be applied to the product on your card. Take an imprint of these textures by pressing the putty onto the textured object. Additionally, take a photo of the texture on the original object
Search for a range of textures from coarse to fine that could inspire an improvement in the product's grip, indicate affordances, differentiate elements, or convey messages or emotions
3. **Back in your teams**, take turns exploring where each of your textures could be applied or modified to improve user-product experience
Propose an appropriate material for this texture. On a scale of subtle to coarse, which would be most appropriate for your product?
4. After each player shares their textures, **select the best texture** out of all that could improve the user's tactile experience and compare to a similar texture sample
Use 1 or more textures to improve the user's tactile experience
5. Get together with 2 other teams and take turns sharing your ideas for improved product surfaces and materials with one another
Share how the texture(s) could improve the user-product interaction & user experience

TEXTURES

Can be created on any surface by : casting, molding, rolling, crimping, pressing, sand blasting, abrasive polishing, laser texturing, electro-texturing, or chemical engraving, depending on the materials. Texture imparts visual and/or tactile features (Ashby & Johnson, 2012).



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LEARN ACTIVITY

KINETIC ACTIONS

... is a hands-on activity that explores product movement in a structured and analytical format.

Movement can convey a variety of personalities & messages to users. As it unfolds in a recognizable pattern, it can evoke different meanings and emotions, be it the hypnotic cresting and troughing of a wave, the articulation of a finger, or the gentle swooping motion of a falling feather. Designers have an opportunity to influence product perception through kinetic design. Should a product move in a sharp and precise manner to show its technological advancedness, or in a smooth, fluid way to give a sense of aesthetic pleasure? Product movement is comprised of many different patterns, as illustrated by Hubel & Lussow (1984).

MULTISENSORY
& KINETIC
EXPERIENCES



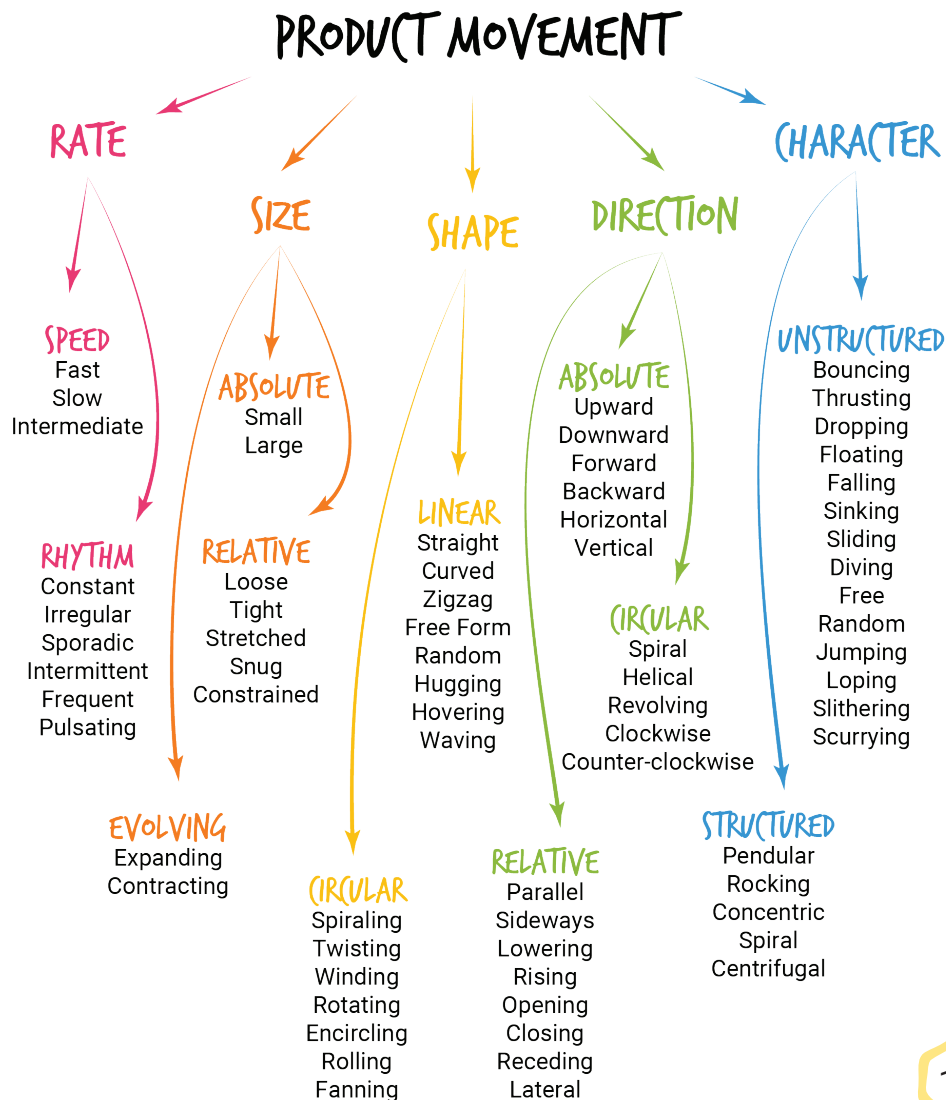
45 MINUTES

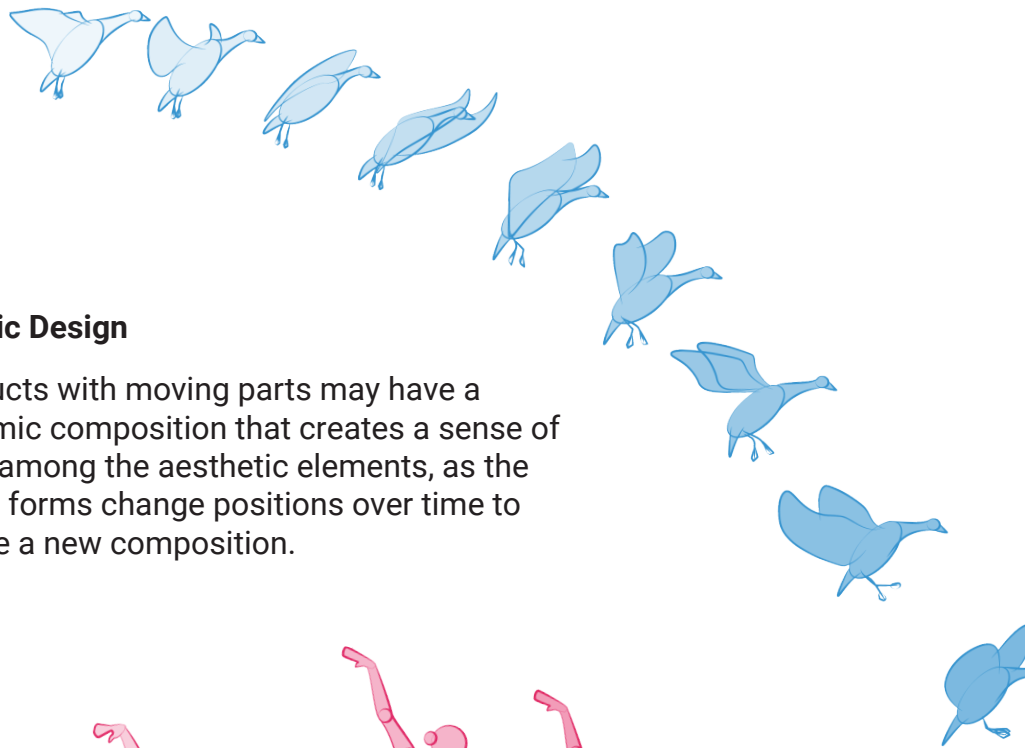


TEAMS OF 3-4

LEARNING OUTCOMES

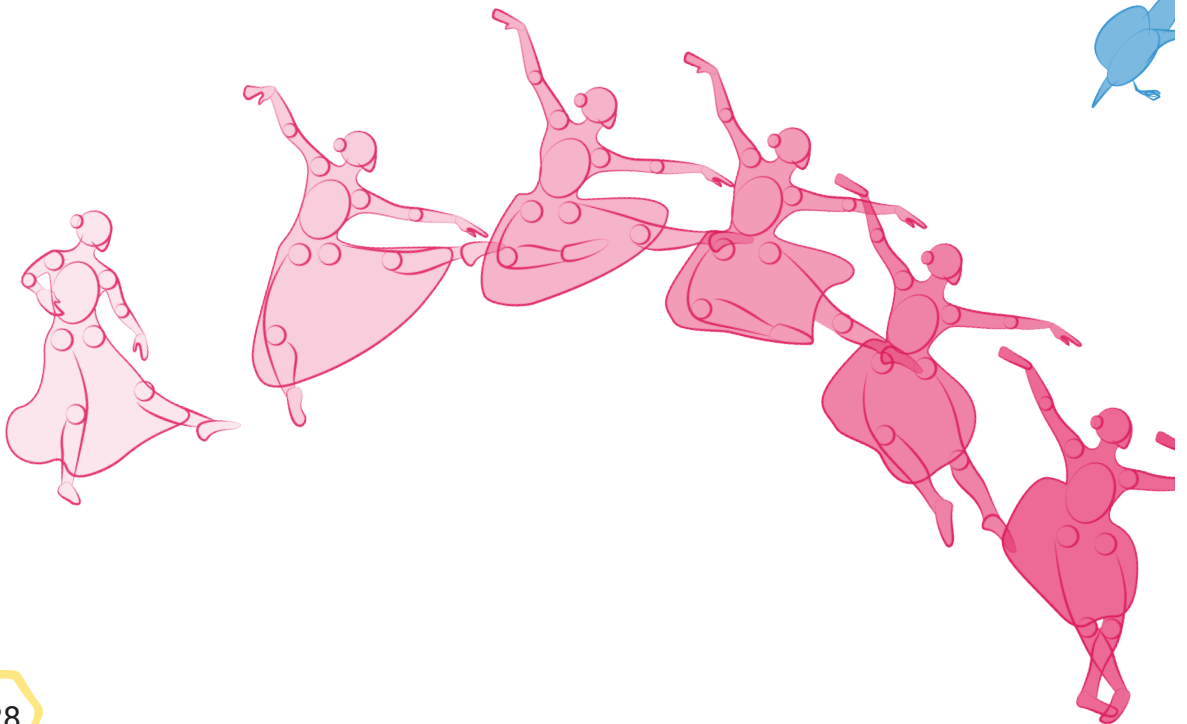
- Identify the attributes of movement
- Analyze the relationship between kinetic movements and their stages of sensory dominance
- Interpret the character of movement through emotions





Kinetic Design

Products with moving parts may have a dynamic composition that creates a sense of unity among the aesthetic elements, as the static forms change positions over time to create a new composition.



Designers can also identify when different movements become dominant in the hierarchy of user-product interaction. Kinetic aspects seem to come later in the interaction, and are closely related to tactility. There is a relationship between sensory engagement and kinetic information; for example, touching a button that initiates movement then leads to seeing the direction and path of movement, all while hearing the sound of mechanical parts moving.

Kinetic Actions asks participants to analyze the different attributes of movement and when they occur in interaction. Participants will think more deeply about how kinetic movement can influence a product's personality.





ACTIVITY GUIDE

1. Distribute 1 kinetic product or **Product Card** (refer to Product Card Bank, p.212) to each team
Either randomly assign products or allow teams to choose their product
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
4. **At 20 minutes**, let players know that they have 10 minutes left to finish steps 1-5
5. **At 30 minutes**, begin presentations
Give each team 2-3 minutes to allow them to present their scenarios and explain their proposed emotional interpretations and hierarchy of sensory dominance
6. If time allows, discuss the process
This is an opportunity to relate the exercise to a broader discussion of how the attributes of movement influence design and user-product interactions

KINETIC ACTIONS



LEARN

Identify and analyze how kinetic sensory qualities support people's interactions with dynamic product movements.

SUPPLIES

- Physical products or Sense-It! Product Cards (see p.212 of Guide)
- Paper & pens

INSTRUCTIONS

In teams of 3-4, pick 1 product that uses kinetic movement, and:

1. Identify the **attributes of movement**
The rate, size, shape, direction, and character (Hubel & Lussow, 1984)
2. Describe your **emotional interpretation of the movement**
Is the movement happy, sad, violent, luxurious, or other?
3. Sketch or storyboard **interaction scenarios**
The sequential stages of the kinetic interactions of and with the product
4. Label the hierarchy of **sensory dominance**
Identify which kinetic movements are more dominant at different stages of use
5. Present your proposed emotional interpretations and sensory hierarchy
Discuss how these contribute to or influence the kinetic interactions

SENSORY DOMINANCE

Which sensory modality dominates user experience at each stage of user product interaction (Fenko et al., 2008).

KINETIC DESIGN IN PRODUCTS

"When movements are organized together in time, certain patterns result that have a recognizable form." (Hubel & Lussow, 1984)

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LEARN ACTIVITY

PERFECT IMPERFECT

... challenges participants to imagine different variations of the same product. It encourages reflection and discussion about the sensory features that contribute to the perception of product quality.

Products may be designed to communicate quality through the materials and surface finishes that people associate with specific values. According to Owain Pedgley (2014) and Pedgley et al. (2018), product surfaces that are worn or uneven may be considered defective and rejected. However, desirable imperfections may bring differentiation to create new, personalized experiences. Pedgley (2014) and Pedgley et al. (2018) identify 4 quadrants that categorize imperfections based on materials, surface qualities, and effects on user experiences. There are different points along the product journey in which these qualities may be attained: material sourcing, processing, and ageing during use.

TACTILE PRODUCT
INTERACTIONS



30 MINUTES

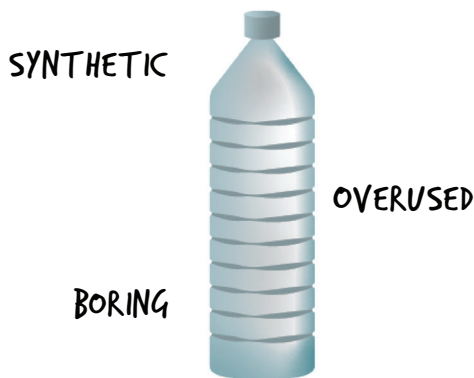


TEAMS OF 4

LEARNING OUTCOMES

- Identify material properties & their perceived value throughout the product journey
- Categorize material appropriateness for the product
- Understand the importance of selecting materials that influence perception & attachment during product lifecycles

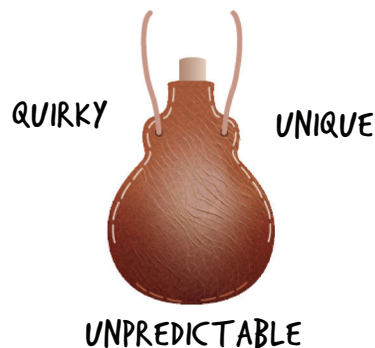
NEGATIVE PERFECT



POSITIVE PERFECT



NEGATIVE IMPERFECT



POSITIVE IMPERFECT



ACTIVITY GUIDE

1. Spread the deck of **Product Cards** face-down on a table
Each team will randomly select 1
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
Let players know that they will have 20 minutes to complete steps 1-4
4. **At 20 minutes**, tell players to tape their individual product alteration to its corresponding quadrant and then their team's quadrant to the wall
If wall space is limited, just ensure that all teams' quadrants are visible to everyone
5. Encourage all players to walk around and see what other teams came up with
6. **At 30 minutes**, finish the activity
7. If time allows, have a group discussion about the benefits of having material imperfections
This is an opportunity to relate the exercise to a broader discussion of how to achieve emotionally sustainable design solutions

PERFECT IMPERFECT



LEARN

Reflect on how material imperfections can add value to products, and explore how designers can use them as desirable assets.

SUPPLIES

- Sense-It! Product Cards
- Paper & newsprint
- Pens & colour markers
- Tape

INSTRUCTIONS

In teams of 4, pick out a Product Card and draw a large **quadrant diagram** on newsprint paper

1. Label each quadrant as **negative perfect**, **positive perfect**, **negative imperfect**, and **positive imperfect**

Assign 1 quadrant to each group member, either randomly or by choosing

2. **Individually**, on a separate piece of paper, sketch a variation of your team's product category that would fit into your assigned quadrant (as seen on the back of this card)
Describe a few of its key characteristics and explain how it fits into its quadrant
3. Reflect on the stages of the **product journey** and identify by drawing captions and arrows what causes your product's material imperfections and when these occurred
(1) material sourcing, (2) material processing, or (3) material ageing during use
4. Once all members are done, place each sketch into its corresponding quadrant and tape your team's diagram to the wall
Discuss the choices you each made among your team members
5. Go around the room to look at the other teams' diagrams
As a whole, discuss whether you agree or disagree with everyone's choices and why

MATERIAL IMPERFECTIONS

Are described as surface qualities that are not homogeneous or consistent, and create an irregular effect to the eye or to the touch.

Consider the context of use and nature of the product-user interaction to determine whether a material is 'perfect' or not, and to understand if this is desirable.



LEARN ACTIVITY

SMELL MEMORIES

... is an opportunity for participants to reflect on the emotional attachments humans often forge with products.

Smells often take on the emotional tone of the context in which the scent was originally experienced. For example, think about the power of emotional attachments through scent: what happens when one smells coffee brewing? Attraction or aversion? What about the smell of welding? Or of fresh cut wood or grass? Each of those smells is related to the use of a product, and so is part of the product experience.

This activity encourages participants to apply their knowledge of the perceptions, memories, and emotions that may be associated with scents in order to positively influence the user experience of a product or environment.

EMOTION &
MEANING



15 MINUTES



TEAMS OF 3-5

LEARNING OUTCOMES

- Explore the influence of smell on people's emotions
- Transform product or environmental perceptions using smell





ACTIVITY GUIDE

1. Spread the **Taste & Smell Tiles** face-up on a table
2. Give each player **4 sticky notes**
The sticky notes will be used to record their smell memory descriptors
3. Read the **Activity Card** out loud to the players
Emphasize that steps 1-2 of the activity are to be completed individually within 5 minutes. Ensure that all players understand the activity
4. Start the activity and use a **stopwatch or timer** to keep track of time
5. **At 5 minutes**, ask players to gather into **teams of 3-5** to share their smell memories and continue with the rest of the activity
6. **At 15 minutes**, finish the activity

SMELL MEMORIES



LEARN

Explore the power that smell has over memories and its ability to influence peoples' moods when applied to products & environments.

SUPPLIES

- Taste & Smell Sense-It! Tiles
- Paper
- Pen
- Sticky notes

INSTRUCTIONS

Individually, take **5 minutes** to:

1. Write down **1 smell memory** that comes to mind for each of the following:
Happiness, Disgust, Excitement, & Fear
2. Select a **Taste & Smell Tile** that best describes each smell memory
If you don't like the descriptors on the Tiles, write your own on a sticky note
3. Gather into teams of **3-5** and take turns sharing smell memories, starting with Happiness
As you share your smell memory, lay the Tile/sticky note descriptor on the table
4. After sharing smell memories, search for commonalities amongst the descriptors
E.g. Identify why a smell might evoke feelings of happiness
5. Repeat **steps 3 & 4** for Disgust, Excitement, & Fear
6. Choose a product or environment where you might want to **influence** a person's mood
Refer to the product & environment suggestions below or think of your own
7. **Brainstorm** how you could **integrate** the types of smells you have come up with into other products or environments to influence people's responses to the product
E.g. like or dislike

PRODUCT SUGGESTIONS

- Chair
- Glasses
- Tie
- Headphones
- Seat belt
- Pillow
- Blanket
- Shoes

ENVIRONMENT SUGGESTIONS

- Hospital
- Prison
- Airplane
- Office
- Bank
- Homeless shelter
- Fitness centre
- Shopping mall
- Casino

TASTE
& SMELL

TASTE
& SMELL

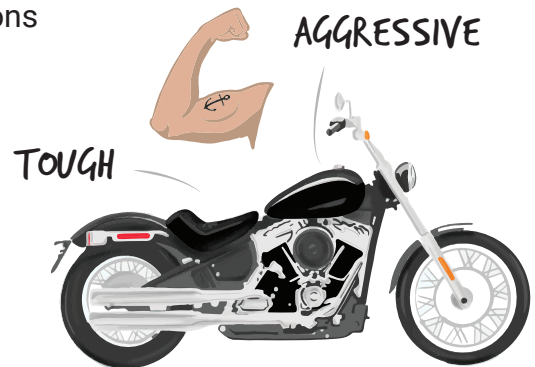


LEARN ACTIVITY

SOUND COMIC

... is an opportunity for participants to analyze product sounds in a scenario and become aware of the related semantic associations.

Product sounds may have associated meanings, which could be interpreted differently from person to person. Perceived sounds, defined as sounds entering our awareness and becoming open for interpretation, are matched with similar mental representations stored in memory—and thus a series of emotions (whether positive or negative) may be experienced. For example, the roaring sound of a motorbike that can be perceived as loud and rough may be associated with mental constructs (representations) of power and adventure, and thus create an



AUDITORY
EXPERIENCES



30 MINUTES



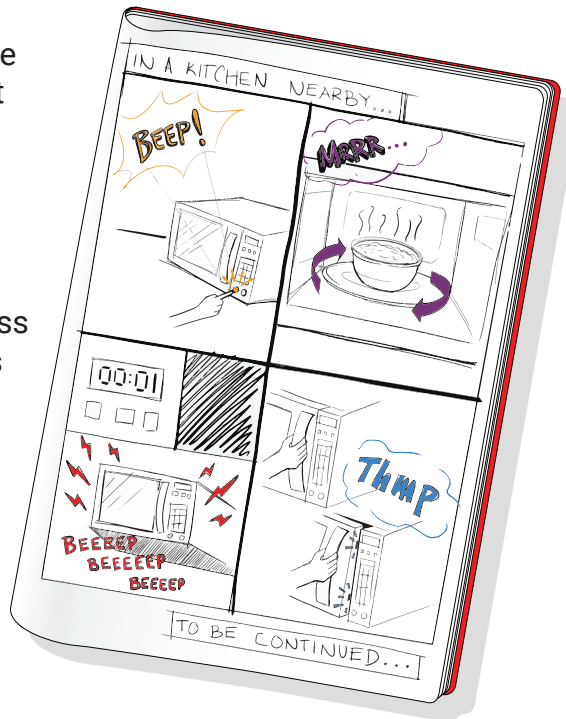
TEAMS OF 2-3

LEARNING OUTCOMES

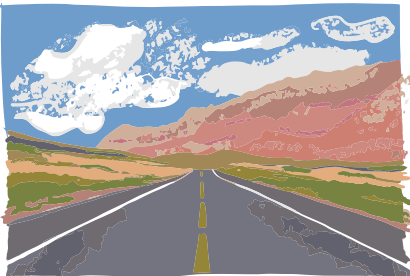
- Identify product sounds
- Describe different semantic associations related to sounds
- Explore the effects of sounds on people-product interactions

emotional reaction of arousal and excitement. Its sound contributes to the overall perception of a tough and powerful product. Semantic associations, in this case, are obtained by analyzing the different ways in which a product sound is described; they indicate the various meanings and interpretations of sound.

Sound Comic seeks to illustrate how sounds from user-product interactions can be analyzed and labeled to understand their meanings. The activity encourages participants to consider how sounds may be perceived, increasing awareness of the opportunities this opens for product and user experience design.



ADVENTUROUS





ACTIVITY GUIDE

1. Spread the deck of selected **Product Cards** (refer to Product Card Bank, p.213) face-down on a table
Each team will randomly select 1
2. Read **steps 1-3** of the **Activity Card**
Emphasize that this part of the activity is to be completed individually in 15 minutes. Ensure that all players understand this part of the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
4. **At 15 minutes**, tell the players to return to their teams
They should have finished **steps 1-3**
5. Provide each team with **1 sheet of newsprint**
6. Read the remaining steps on the **Activity Card**
Emphasize that the players are now to work as a team. Give each team 2-3 minutes to ensure that they are able to discuss their identified auditory features
7. **At 25 minutes**, let players know that they have 5 minutes left
8. Finish the activity once all teams have finished their comic strips (refer to example on previous page)
9. If time allows, discuss the process that the teams used
This is an opportunity to relate the exercise to a broader discussion of semantics in product sound design

SOUND COMIC



LEARN

Identify the product sounds in a user-product interaction: their purpose, perception, and how they might be described using semantic associations.

SUPPLIES

- Sense-It! Product Cards (see p.213 of Guide)
- Newsprint
- Paper & pens

INSTRUCTIONS

In teams of 2-3, randomly select 1 Product Card, and:

1. **Individually**, take **15 minutes** to imagine and sketch a scenario in which you are interacting with your product
Sketch all the sounds that your product makes
2. Label the sounds as either **consequential** or **intentional**
3. Identify and label **at least 5 semantic associations** (refer to the back of this card) to describe these sounds
4. **Return to your team**, take turns **discussing** each of your scenarios
Are the auditory features of your product well designed? Or could these be improved?
5. Then, **combine all** of the sounds you found to create a story in which they are all present
Sketch a 3-4 frame comic strip to illustrate your story; be as creative as you want!

CONSEQUENTIAL SOUNDS

Are caused by the product's functionality.
E.g. Electric razor motor, vacuum cleaner

INTENTIONAL SOUNDS

Are deliberately designed and placed to convey meaning.
E.g. Microwave beep = food is ready!

SEMANTIC ASSOCIATIONS

The ways in which sounds are described contribute to how people perceive the product.





LEARN ACTIVITY

SOUNDSCAPE

... refers to a combination of sounds that can be found in an environment. Sounds contain and can be identified based on 3 different layers:

1. Foreground

It consists of proximate sounds that are intermittent. Most of them are familiar sounds, such as the sound of music on a jogger's phone. However, it can also consist of sounds that are designed to alarm a person about the environment.

2. Contextual Sounds

It includes sounds that are unique to a specific environment. For instance, your partner snoring.

3. Background

It acknowledges ambient sounds, which people may ignore or adapt to, such as birds chirping.

AUDITORY
EXPERIENCES



30 MINUTES



TEAMS OF 3-5

LEARNING OUTCOMES

- Expand sound vocabulary
- Develop awareness of layers of sound
- Interpret sounds through different mediums
- Understand the importance of designing sounds that are appropriate to their context





ACTIVITY GUIDE

Note: *If possible, tell players in advance to bring a **1-2 minute recording of an environment** or prepare soundscapes in advance (explore <https://freesound.org/>).*

1. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
2. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they have 5 minutes to finish steps 1-2
3. **At 5 minutes**, remind players that they should be done with steps 1-2
Tell players that they have 15-20 minutes to finish steps 3-4. In the mean time set up a curtain for the performances
4. **At 25 minutes**, begin presentations of soundscapes
Keep presentations under a minute! Have the players stand behind the curtain while presenting. This will encourage the audience to focus on the auditory experience, rather than the visual experience. This might also help with stage fright!
5. Finish the activity once all the teams have presented

SOUNDSCAPE



LEARN

Develop a critical ear through exploring and generating familiar soundscapes based on interactions with products, services, and environments.

SUPPLIES

- Paper
- Pen
- Visual barrier (e.g. curtain)

INSTRUCTIONS

In teams of **3-5**, identify a familiar **soundscape**, which includes a user-product interaction that is recognizable, and:

1. Listen actively to the soundscape either in person, on the Internet, or as a recording if available
A soundscape is a sound or combination of sounds from a particular environment
2. Separate the **layers** of sound into:
The foreground sounds, the contextual sounds, & the background sounds
3. Reproduce the sounds by using only **body parts**
E.g. arms flapping, tongues clicking, hands clapping, etc.
4. Organize the sounds into an audible storyline
It should be less than 1 minute and have a beginning, middle, & end
5. Perform this mysterious **1 minute** soundscape for others to identify
Stand behind the curtain so others can only hear your performance

ACTIVE LISTENING Discriminating between sounds within a multi-pattern context, retaining and interpreting the sounds into a meaningful story.

FOREGROUND SOUNDS Sounds related to the activity that gets one's prompt attention (e.g. fire alarm).

CONTEXTUAL SOUNDS Sounds that take place in the vicinity of the foreground sound (e.g. fire crackling, people shouting).

BACKGROUND SOUNDS Ambient sounds that provide contrast with the previous 2 types of sound (e.g. unrelated traffic noise) and communicate the context or location.





LEARN ACTIVITY

TASTE THEORY

... is an opportunity to reflect on how the qualities of taste and other sensory features affect product attributes and perception for different user groups.

According to Davis Kessler's 2009 book, *The End of Overeating*, modern food design is based on 6 hedonic principles: anticipation, visual appeal, aroma, taste & flavour, texture, and mouthfeel. Manipulating and optimizing these principles can promote sensory engagement.

Taste Theory encourages participants to analyze Kessler's 6 hedonic principles in the context of product design and to explore their roles in product experience. In addition, participants will consider how other sensory information, such as visual, auditory, tactile, and smell can influence the sense of taste.

SMELL & TASTE
EXPERIENCES



20 MINUTES



TEAMS OF 2-3

LEARNING OUTCOMES

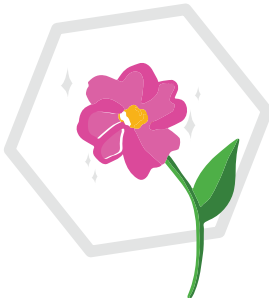
- Analyze the impact of taste on perception
- Identify the relationship between taste and the other senses
- Learn how the sense of taste can be a design feature to enhance user experience



ANTICIPATION

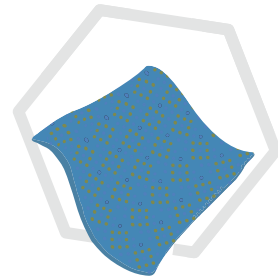


MOUTHFEEL

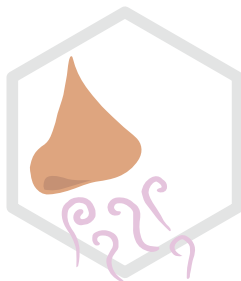


VISUAL APPEAL

6 HEDONIC PRINCIPLES



TEXTURE



AROMA



TASTE & FLAVOUR



ACTIVITY GUIDE

1. Provide each team with **1 sheet of newsprint** or other type of large paper
Encourage players to sketch while they discuss
2. **Preselect** a variety of possible user groups and assign **1** to each team
E.g. babies, children under 12, teenagers, older adults, adventure-seekers, chefs, junk-food lovers, picky eaters, health-conscious eaters
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they have 20 minutes to complete the activity
5. **At 10 minutes**, tell players that they should be halfway done the activity
6. Finish the activity once teams have completed **steps 1-5**

TASTE THEORY



LEARN

Analyze and discuss how taste can impact user experience. In addition, explore the influence that other senses have on taste.

SUPPLIES

- Newsprint
- Pen

INSTRUCTIONS

In teams of 2-3, consider that you are designing 1 of the product options from below for a specific user group. Sketch on a piece of newsprint as you discuss:

1. What should the product **taste like** for these users? Why?
Should the product inherit taste from its material(s) or should taste be embedded?
2. What type of **"mouthfeel"** should the product have for these users? Why?
Consider how they would experience the textures, materials, and/or finishes
3. How might **other sensory features** influence the taste & user experience of the product?
E.g. the product emits a sweet smell, or the product is coloured vulgar-green...
4. How could you **deter** a user group from putting the product in their mouth?
Consider user anticipation, visual appeal, & aroma
5. Propose **1 pleasant & 1 unpleasant sensory incongruity** that would affect the product's taste
E.g. a mouth-guard that tastes like mint, or a coffee cup that smells like paint

PRODUCT OPTIONS

Clarinet, coffee cup, dental floss, dentures, drinking straw
fork, hydration pack, mouthguard, snorkel, soother, tongue ring, toothbrush,
toothpick, water bottle, etc.


SENSORY INCONGRUITY

Occurs when the information retrieved through different senses is conflicting (e.g. a pillow that looks like a rock) (Ludden, et al., 2007)



APPLY





Apply cards take the learning further. The ultimate goal is that designers use what they know about sensory aspects of design to create more sophisticated, useful, inclusive, and long-lasting products. These activities take a principle of design and invite participants to apply them to products through sketching, brainstorming, and creating.



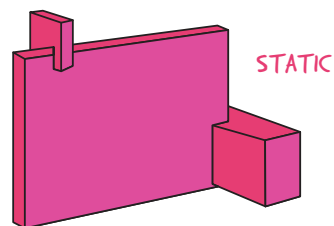
APPLY ACTIVITY

ACROSS DIMENSIONS

... is a challenging and fun way to practice converting 2D compositions into 3D ones, while exploring what makes a composition visually interesting.

Compositions generally follow an overall 2D or 3D formal typology. A 3D form can be perceived by looking at an object from different points of view. Overriding formal typologies can be: rectilinear, curvilinear, and organic.

Compositional balance is achieved through the placement of visual weight around one or more axes. An axis is an imaginary line that runs through the centre of the composition, it helps organize elements.



VISUAL
PERCEPTION



30 MINUTES



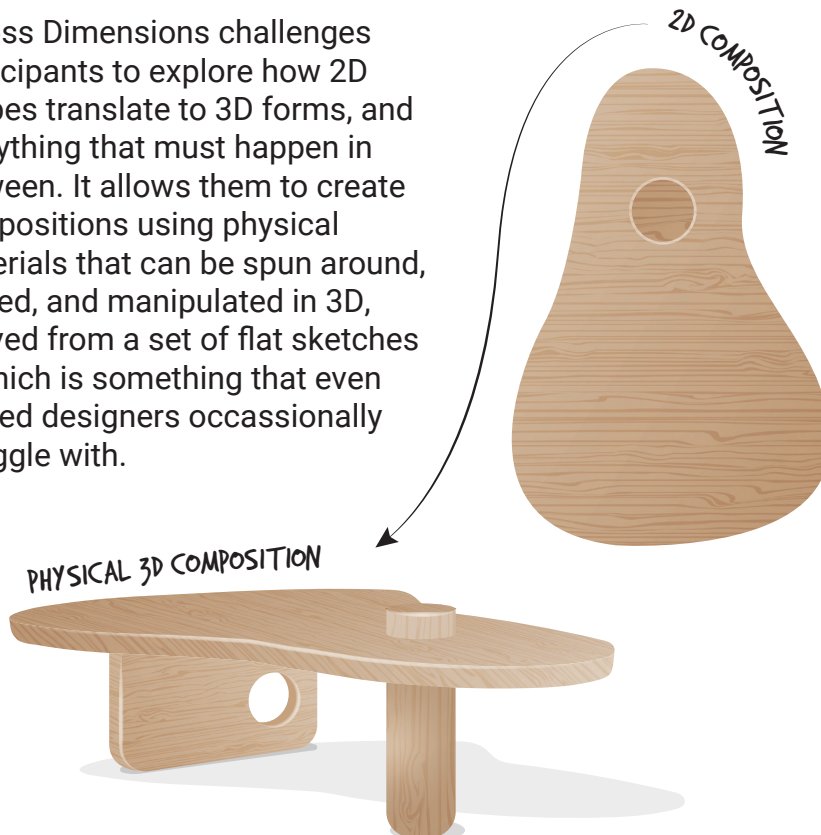
TEAMS OF 2

LEARNING OUTCOMES

- Identify and create relationships between elements within compositions
- Translate 2D shapes into 3D forms
- Explore how the organization of elements plays a role in creating visual interest from different points of view

Unity can be created from separate elements by applying principles of organization, like making sure that elements touch or overlap, or by creating flowing transitions between them. A unified composition provides a cohesive quality that helps people perceive products as complete and finished.

Across Dimensions challenges participants to explore how 2D shapes translate to 3D forms, and everything that must happen in between. It allows them to create compositions using physical materials that can be spun around, flipped, and manipulated in 3D, derived from a set of flat sketches — which is something that even trained designers occasionally struggle with.





ACTIVITY GUIDE

Note: This activity requires that the facilitator bring a variety of **low-fidelity prototyping materials**. We recommend putty, toothpicks, cardboard, and scissors.

1. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
2. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they will have 5 minutes to complete steps 1-2 individually
3. **At 5 minutes**, provide each team with the listed **prototyping materials**
Tell players to complete steps 3-4 with their partner
4. **At 25 minutes**, tell players to find another team and start presenting to each other
Ensure that they are sharing their compositions and discussing the questions outlined in step 5
5. **At 30 minutes**, finish the activity
6. If time allows, have a group discussion about the challenges of translating compositions from 2D to 3D
This is an opportunity to relate the exercise to a broader discussion of the importance of understanding and manipulating 3D forms for designers

ACROSS DIMENSIONS



APPLY

Explore relationships within visual compositions and how to translate them from 2D to 3D. Practice using organizational elements to create visually interesting compositions.

SUPPLIES

- Putty
- Toothpicks
- Paper & cardboard
- Scissors, pencils & erasers

INSTRUCTIONS

Gather into pairs,

1. **Individually**, create a random arrangement that includes at least one **2D rectilinear, curvilinear, and organic element**
Make sure that your 3 elements are touching or overlapping
2. **Switch** papers with your partner! Now, imagine their sketch as the **top view** of a **3D composition** and sketch a possible **side view**
Try to make it unique from this point of view by introducing unexpected form attributes while still respecting your partner's top view
3. **Together**, choose 1 of your top and side view pairings to be a reference. Use this to create a **physical 3D composition** with the given prototyping materials
If you're stuck, try using different form attributes as inspiration
4. Briefly **analyze** your new 3D composition and identify the following:
What kind of axes does your composition have? Does it resemble any products?
5. Get together with another pair. **Share** your process and discuss:
What was the most difficult part of the activity? Was it fun? How challenging did you find going across dimensions? Which view of your composition do you find most interesting?

AXIS Imaginary central line of an artefact (horizontal vs. vertical axis, static vs. dynamic axis)

FORM ATTRIBUTES

- | | | | |
|-------------|---------------|--------------|---------------|
| • Geometric | • Cylindrical | • Continuous | • Trapezoidal |
| • Elongated | • Conical | • Segmented | • Triangular |
| • Stubby | • Oblong | • Blobby | • Round |
| • Organic | | | |



APPLY ACTIVITY

CONCINNITY MAPPING

... encourages participants to apply their knowledge of aesthetic harmony to analyze, compare, and judge different product compositions.

According to Del Coates (2003), “objective concinnity” refers to the concept of an ideal form created through balanced proportions and compositional principles that the viewer can easily perceive as a unified whole. The idea of concinnity is tied to the organization of the elements of a composition – such as balance (e.g. symmetry, asymmetry), variety (e.g. rhythm, contrast, emphasis), and unity (e.g. Gestalt Laws).

Through this activity participants will reinforce how careful attention – in the selection and combination of organizational elements – can make a great impact in creating pleasing products.

VISUAL
PERCEPTION



30 MINUTES

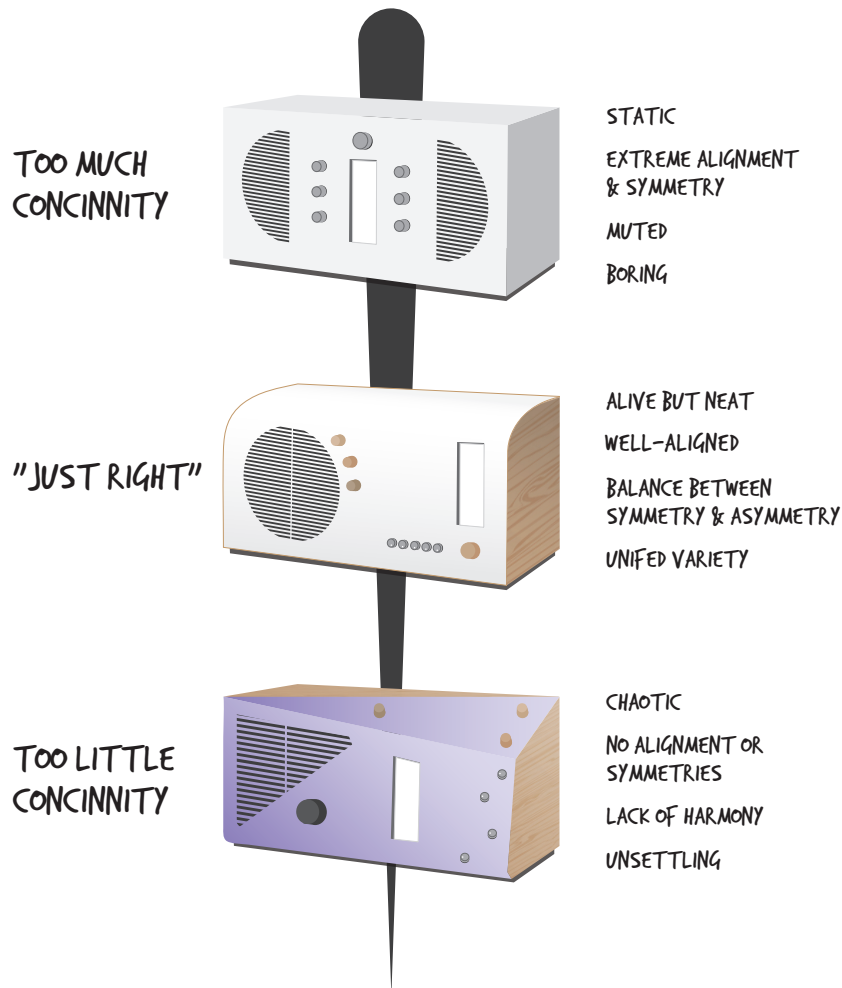


TEAMS OF 3-4

LEARNING OUTCOMES

- Examine the appropriateness of different ways of organizing compositional elements
- Categorize the results based on levels of harmony
- Practice altering compositions to affect perceived harmony

Consider these 3 variations of the same product:





ACTIVITY GUIDE

1. Provide each team with 1 sheet of **newsprint** or another type of large paper
2. Spread the deck of **Product Cards** face-down on a table
Each player will randomly select 2
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Start the activity and use a **stopwatch or timer** to keep track of time
Let players know they have 20 minutes to complete steps 1-4 for informal presentations
5. **At 20 minutes**, stop the activity and begin presentations
Each presentation should be approximately 1-2 minutes
6. Finish the activity once all teams have presented, and discuss if time allows
When is more or less objective concinnity appropriate and why? What is subjective concinnity and how can designer's maximize it?

CONCINNITY MAPPING



APPLY

Observe and measure the perceived aesthetic harmony of elements within a composition.

SUPPLIES

- Sense-It! Product Cards
- Newsprint
- Pen
- Sticky notes

INSTRUCTIONS

In teams of 3-4, draw a **quadrant diagram** on newsprint paper and take **2 Product Cards** each

1. Select **2 sets of concinnity comparison terms** from below
Write 1 set of terms on the X-axis extremities and the other set on the Y-axis extremities
2. Take turns **mapping** all of the Product Cards on the quadrant diagram
Place the product cards based on their relationship to the labels
3. Place **stickies** around your Product Cards explaining your placement choices based on the product's attributes
E.g. "this product is organized because its elements are visually aligned"
4. Choose **at least 4** of the Product Cards that are mapped on the quadrant diagram
Brainstorm how you could change certain product attributes to alter the positions of the product cards (e.g. make the product cards shift quadrants)
5. Present **1** of the altered product card positions to the other teams
Share what changes could shift the product's position on the map and why

CONCINNITY

The aesthetic harmony of the arrangement or fitting together of the different elements in a composition (Coates, 2003).

CONCINNITY COMPARISONS

- | | |
|--------------------------|--------------------------------|
| • Static vs. dynamic | • Integrated vs. disintegrated |
| • Boring vs. interesting | • Symmetrical vs. asymmetrical |
| • Proximal vs. distant | • Balanced vs. unbalanced |
| • Colourful vs. muted | • Organized vs. chaotic |
| • Simple vs. complex | • Similar vs. dissimilar |

Activity Card inspired by: (Coates, 2003)

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APPLY ACTIVITY

KINETIC COMMUNICATION

... challenges participants to use their knowledge regarding the attributes of movement – rate, size, shape, direction, character, form, and function (Hubel & Lussow, 1985) to simulate kinetic movement that expresses an anthropomorphic quality in a product.

Anthropomorphism is an innate tendency of humans to attribute human-like qualities to non-human entities such as animals and objects. In doing this activity, participants can see how the way an object “behaves” contributes greatly to how it will be perceived, and may even give the object a personality. The exercise also provides an opportunity to practice alternatives to verbal and written communication through the use of hand gestures.

MULTISENSORY
& KINETICS
EXPERIENCES



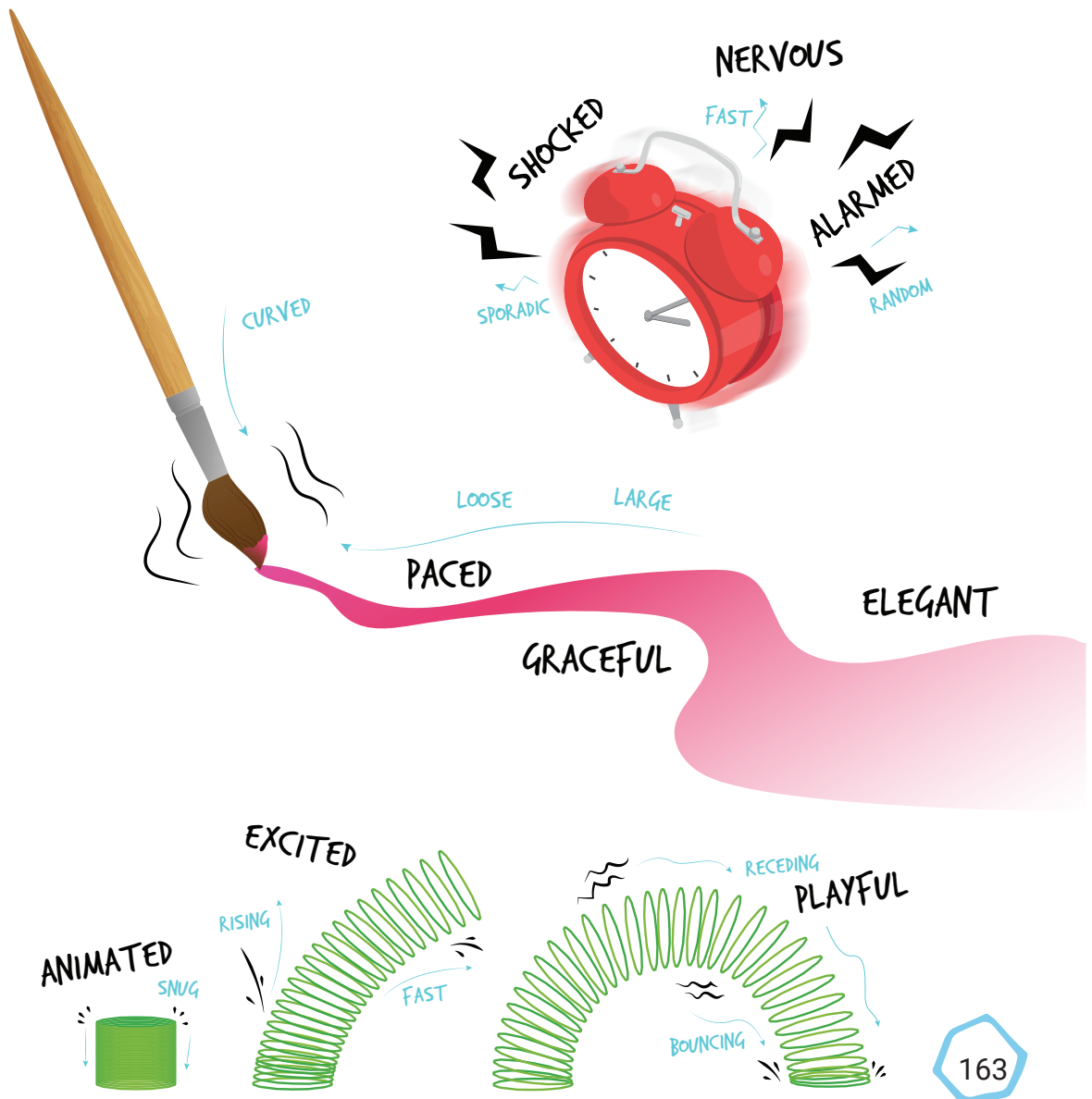
45 MINUTES



TEAMS OF 2-3

LEARNING OUTCOMES

- Identify anthropomorphic qualities in products
- Design products with personalities by adding kinetic features
- Practice gestural communication as an iterative design process





ACTIVITY GUIDE

1. Set up the activity with the appropriate **Product Cards**
(see Product Card Bank, p.212)
Lay them out for teams to come and select
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
4. **At 10 minutes**, inform players they have 15 minutes to prepare their short skit
Remind them they are only allowed hand gestures
5. **At 25 minutes**, begin presentations and allow players to guess each other's quality
Total time for each team should be kept to 2 minutes!
6. Finish the activity once all teams have presented and hold a discussion of time allows

KINETIC COMMUNICATION



APPLY

Use kinetic movements to communicate product personality.

SUPPLIES

- Sense-It! Product Cards (see p.212 of Guide)
- Paper
- Pens

INSTRUCTIONS

In teams of 2-3, pick 1 Product Card that illustrates a product with at least 1 moving part

1. Think of an **anthropomorphic quality** and keep it a **secret** from other teams
E.g. a graceful ballerina, clumsy toddler, marching soldier, strutting catwalk model...
2. Apply **kinetic movement(s)** to your product to convey your anthropomorphic quality
Consider the size, shape, rate, character, & direction of your product's movement(s)
(Hubel & Lussow, 1984)
3. Take **15 minutes** to create a short skit that uses **hand gesturing** to communicate how your product would move and in turn be perceived
Gesture the product's movement(s) and the product-user interactions with your hands
4. **Present** your short skit and have other teams **guess** your anthropomorphic quality
Start your presentation by sharing what your product is but keep your quality a secret!

ANTHROPOMORPHIC

A non-human object having human qualities or personality traits.

HAND GESTURING

The expression of meaning, intention, or emotion through hand movement.

MECHANICS OF MOVEMENT

Folding, creasing, bellows, hinging, nesting, inflating, fanning, etc. (Mollerup, 2001)





APPLY ACTIVITY

RITUAL DESIGN

... prompts participants to examine a personal ritual more closely, and consider all the products involved in each step and their role in the interaction. They are then tasked to enhance their ritual through product design.

Whether it be the sequence of actions taken to brush one's teeth (wet the toothbrush, or apply the toothpaste first?) or that chant people always do right before their favourite team is about to play, people engage in rituals in their daily lives. They cherish these because they may bring comfort, express values, and add meaning to life. It is important for designers to consider rituals when creating products, since these could enhance the experience.

Ritual Design helps participants become more aware of the importance of design in the experience of rituals.

MULTISENSORY
& KINETIC
EXPERIENCES



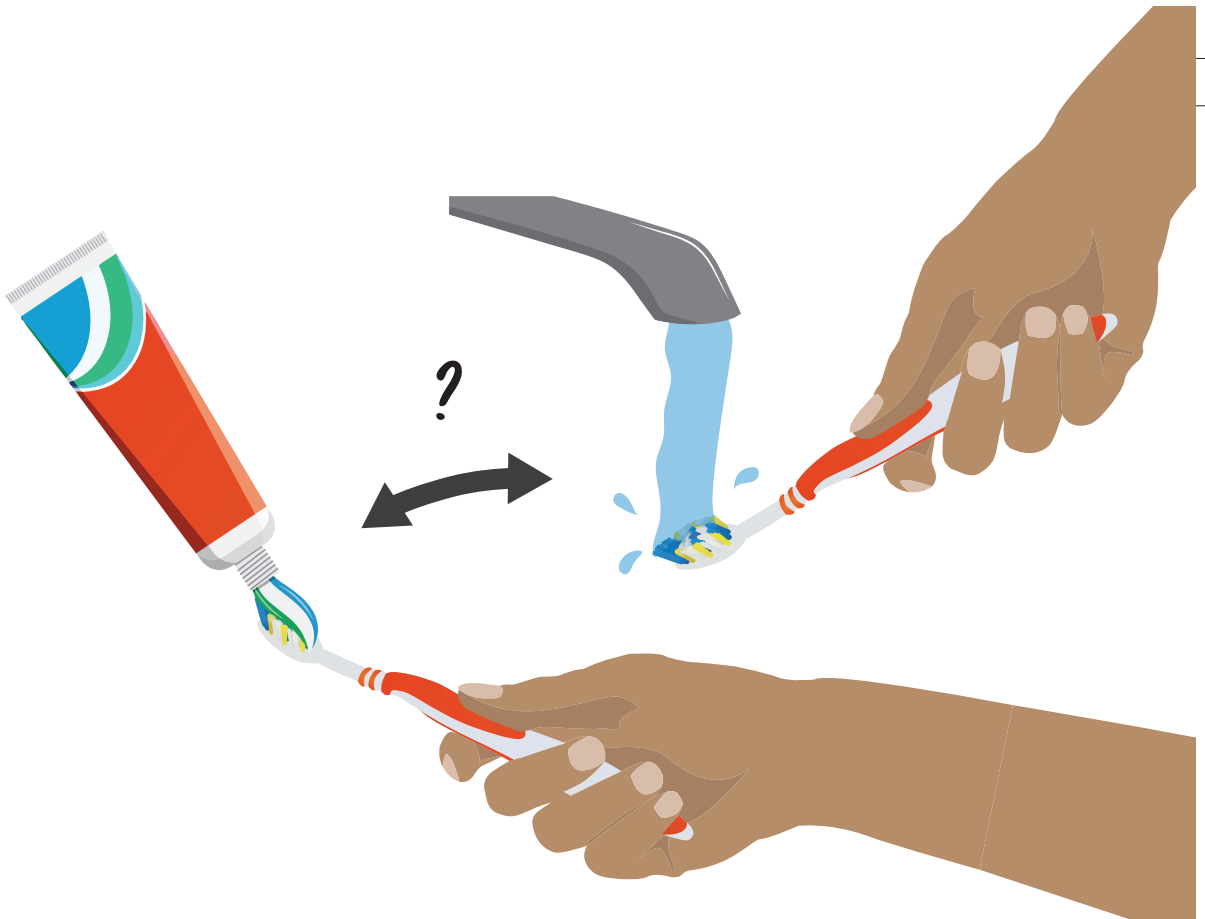
60 MINUTES



TEAMS OF 3-4

LEARNING OUTCOMES

- Reflect on the importance of everyday rituals
- Explain the meanings behind rituals
- Adapt sensory design elements to enhance ritual experiences





ACTIVITY GUIDE

Note: One of the options that this activity offers requires that the instructor bring a variety of **low-fidelity prototyping materials**. We recommend plasticine, cardstock, cardboard, pipe cleaners, tape, hot glue, scissors, stickers, rubber bands.

1. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
2. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they will have 15 minutes to complete steps 1-2
3. **At 15 minutes**, provide each team with **sketching/prototyping materials**
Sketching will be better for a shorter activity (~1 hour), while prototyping will be better for a longer one (~1.5 hours)
4. **At 45 minutes**, begin skit presentations
Each team will perform 2 skits, in a total of 3-5 minutes per team
5. Finish the activity once all teams have presented their before and after skits
6. If time allows, have a group discussion about the applications of design to enhance ritual experiences

RITUAL DESIGN



APPLY

Reflect on the relationship between people's everyday rituals and some of the products they interact with. Explore how sensory design can enhance the meanings and values triggered by people's rituals.

SUPPLIES

- Prototyping materials
- Paper
- Pens
- Coloured markers

INSTRUCTIONS

As a team of 3-5,

1. Choose one of the **personal daily ritual** examples at the bottom of this card which involve a number of steps and a variety of products
Notice that these are rituals, rather than routines. Take note of all the steps involved and what products are used during each step
2. Describe the sequence of multi-sensory actions taken at each step and what **meanings/values** they have for you
Discuss and agree upon which senses are active and the meanings/values attributed
3. **Brainstorm** ways to redesign the products involved in performing the ritual so that they add meaning, trigger personal values, and aid in improving the quality of the interactions
Sketch your new products or create low-fidelity prototypes using the available materials
4. Perform **2 skits** in 3-5 minutes to demonstrate the sequence of events in the ritual **before** and **after** your team's new products are introduced
Show each new product and its features. How is the overall experience enhanced?

ROUTINES: Are mainly driven by the result of performing an action (Lévy, 2015).
E.g. heating up pre-packaged food in the microwave

RITUALS: Are sets of established and sequential actions. It is through the embodiment of meaning, encoded messages, and symbolism associated with the process of performing them that they enhance personal experiences.
E.g. preparing a meal from scratch, welcoming guests into your home, having morning coffee, packing for a trip, reading the paper, working out, meditating, shaving, watching your favourite TV show (Lévy, 2015).



APPLY ACTIVITY

SENSE SEMANTICS

... encourages participants to consider how various product attributes affect perception of a product by creating personalities. For instance, a playful personality can be shown through the use of melodies and bright colours in an object, while a serious personality could have a rectilinear shape with a neutral smell.

Perception of products varies from user to user, but certain items clearly have their own “personality”. For example, a gentle or an aggressive stapler may change the way a person would use it. People attribute unique and individual meanings to products through their interaction with them. Affordances provide visual cues about how to use a product that appeal to sensory and cognitive perception and may lead to long term emotional product connections (Norman, 2004).

EMOTION &
MEANING



30 MINUTES

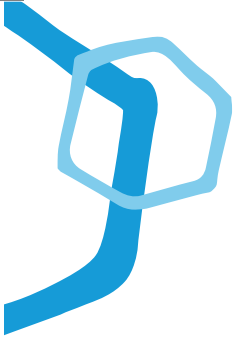


TEAMS OF 3-5

LEARNING OUTCOMES

- Study how product attributes trigger associative messages
- Practice developing concept iterations using different combinations of sensory attributes
- Identify the range of design features that can enhance emotional responses & contribute to product personalities





ACTIVITY GUIDE

1. Provide each team with **1 Perception Tile** at random and some sticky notes per team
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they have 5 minutes to complete steps 1-2. Emphasize that this part of the activity should be completed individually
4. **At 5 minutes**, stop the individual brainstorming and ask teams to organize the sticky notes into clusters to track any recurring patterns
5. **At 10 minutes**, provide each team with a **Product Card** or ask them to **look up a generic product online**
6. **At 20 minutes**, stop the activity and begin presentations
Each presentation should be approximately 1-2 minutes in length
7. Finish the activity once all teams have presented

PTIONS

SENSE SEMANTICS



APPLY

Understand how the senses contribute to the affective interpretation of a product.

SUPPLIES

- Sense-It! Product Cards
- Sense-It! Tiles
- Sticky notes
- Paper & pens

INSTRUCTIONS

In teams of 3-5,

1. Pick **1** of the **Perception Tiles** and place it in the center of an empty work space
Try to pick a Tile that describes an emotion or personality trait
2. **Individually**, spend **5 minutes** reflecting on the emotion/personality trait that you have chosen, and record any thoughts or insights on sticky notes
Think about the kinds of product features that could impart this emotional interpretation of product interactions
3. As a team, organize the sticky notes into clusters to **track or identify any recurring patterns**
Was there any overlap in how the team members thought about this attribute?
4. Pull a product from the **Product Card** deck, imagine, or search online for a generic product found in the home
E.g. kettle, wristwatch, hair dryer, etc.
5. **Brainstorm & sketch** to envision how your team's chosen product could impart this particular perception
Through iterating concepts, determine what this product could look like, move like, sound like, etc.
6. Take turns presenting your enhanced products to the other teams
Explain why your product represents this emotion or personality trait through its sensory qualities

SEMANTICS:

"The study of the symbolic qualities of man-made forms in the cognitive and social contexts of their use and the application of the knowledge gained to objects of industrial design" (Krippendorf, 1989)

AFFECTIVE:

Relating to moods, feelings, and attitudes





APPLY ACTIVITY

SIGHT SEEING

... asks participants to explore the purpose of colour to change perception of existing products.

According to Jason A. Morris (2006), “students tend to view colour as purely subjective decoration, and simply a matter of personal preference. However, colours chosen for a design can be meaningful, purposeful, and even functional”.

In doing this activity, participants can truly appreciate the importance of colour beyond visual aesthetics.

Association and User Interface:

Operational clues



COLOUR & LIGHT
PERCEPTION



45 MINUTES



TEAMS OF 2-4

LEARNING OUTCOMES

- Explore the purpose of colour semantics in design
- Adapt colour to enhance product perceptions

Visual Contrast and Form/Material Emphasis:

Accentuating forms



Form Alteration or Material Deception:

Masking true features



Environmental Contrast vs Harmony:

Standing out or fitting in





ACTIVITY GUIDE

Note: This activity requires that the facilitator brings newsprint to supply the players, and asks the players to bring their own markers/coloured pencils before the activity.

1. Make sure each team has a method of taking pictures and tell them they have **10 minutes** to go explore and take pictures of different products
2. After they return, provide each team with 1 sheet of **newsprint** or another type of large paper
3. Read the rest of **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Start the rest of the activity and use a **stopwatch or timer** to keep track of time
5. **At 5 minutes**, let teams know they have 5 minutes left to complete their product analyses
6. **At 10 minutes**, tell teams to begin the recolouring of their chosen product, and remind them again when they have 5 minutes left
7. **At 20 minutes**, stop the activity and begin presentations
Keep presentations under 1 minute!
8. Finish the activity once all teams have presented

SIGHTSEEING



APPLY

Use colour to indicate new meanings and purposes for an existing product. The goal is to gain an understanding of the importance of colour beyond visual aesthetics.

SUPPLIES

- Cellphone or camera
- Newsprint
- Markers
- Colouring pencils

INSTRUCTIONS

In teams of **2-4**, ensure that at least 1 player has a cellphone to take pictures

1. Embark on a **10 minute** walk and explore your nearby surroundings
E.g. walk around the building or go outside
2. During your walk, take a picture of at least **5** products
E.g. vending machine, bench, fire extinguisher, water fountain, etc.
3. After 10 minutes, return to your initial starting location
4. For all 5 pictures, make a list of all the **colours** on each product and propose a rationale for why that colour was used
E.g. Colour as visual contrast, association, user interface, affordance, fashion, form alteration, emphasis, harmony, identity
5. Select 1 picture of a product and create an **outline sketch** on newsprint
6. Using markers, **recolour** the product for all **3** of the following applications:
(1) To indicate user affordances, (2) To be used by people with low vision, (3) To become more appropriate for its environment
7. Present your recoloured product and provide a rationale for the colours used
Keep the presentation to less than 1 minute!

AFFORDANCE:

A relationship between the properties of an object and the capabilities of the person provides clues about how the object could possibly be used (*Norman, 2013*)





APPLY ACTIVITY

SMELL JOURNEY

... asks participants to sample different elements from a particular environment to represent an overall scent.

There are many scents in a given environment that create its unique smell. People may not always have the words to describe everything they smell, even though humans have a great ability to discern between many fragrances. This activity helps participants explore smell-scapes to discover how layers of smell can contribute to how smell is perceived as a whole. By collecting smell samples in individual “smell-pods”, participants can further reflect on smells after leaving the smell environment.

Through this, participants will practice naming different smells, or even inventing names for smells, in order to broaden their vocabulary and reflect on the complexity of smell perception.

SMELL & TASTE
EXPERIENCES



45 MINUTES

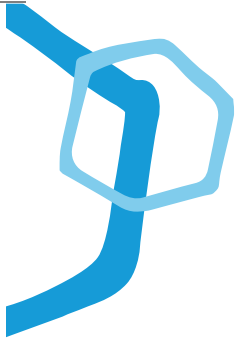


EVEN # OF
TEAMS OF 4-5

LEARNING OUTCOMES

- Identify specific smells that contribute to contexts
- Describe a smell through an attribute
- Experience how layers of smells define places and the things within them





ACTIVITY GUIDE

Note: *This activity requires that the facilitator cut-out and assemble smell-pods (see Accompanying Resources) before starting the activity in order to reduce time*

1. Ask participants to gather in **teams of 4-5**
Ensure there is an even number of teams
2. Provide **each team** with **5 smell-pods**, and if possible, send each team on a different journey to a given location
Inform players they have 20 minutes to complete steps 1-2 before returning; keep track of time
3. Upon return, read the rest of the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Begin the rest of the activity and restart the **stopwatch or timer** to keep track of time
5. **At 5 minutes**, let teams know they have 5 minutes left to choose their summary smell and prepare a rationale
6. **At 10 minutes**, ask teams to pair up with another team and share their smell journeys
7. **At 15 minutes**, tell teams they should be starting **steps 7-8** and have around 5 minutes to complete the activity
8. Allow for more time if needed or hold group discussion if time allows

SMELL JOURNEY



APPLY

Isolate different samples from nature to compose a summary smell of a journey. Gain an understanding of how layers of smell can contribute to how we perceive smell as a whole.

SUPPLIES

- Sense-It! Tiles
- Smell Pods & Fragrance Wheels
- Paper & pens

INSTRUCTIONS

In teams 4-5, take 5 smell pods and embark on a smell journey

1. As a team, take **20 minutes** to walk toward your given location and collect 5 samples from nature throughout the journey. Put each sample in its own smell pod.
E.g. gravel, dirt, flower, grass, leaf, bark, litter
2. Return to the initial starting location once your team reaches the given location
All 5 smell pods should be full
3. Using any Tile category, select **1** attribute per smell pod to describe each sample's scent
E.g. Garbage = Pungent, Moss = Complex, Flower = Loud
4. Select **1** Tile to describe the **summary smell** of the entire journey
Do not share the summary smell with other groups
5. **Present** each smell pod and its descriptive attribute to another team
E.g. "Our journey was _____, _____, _____, and _____."
6. Other team selects a summary smell name for your journey
7. **Reveal** both summary smell names, explain why your team chose it
Compare

SUMMARY SMELLS

Are important to determine if a scent is appropriate or not. Their type and strength influence the extent to which an incongruent scent can be related to the product, and thus its degree of appropriateness (McLean, 2019).



PERCEPTIONS

ASTE
SMELL

UDITORY



APPLY ACTIVITY

SMELL MATCHING

... tasks participants with determining what makes a scent appropriate for a given product and why.

Scent has been treated as less important than other senses during user-product interactions, but it can enhance these and create entirely new sensory experiences. With the availability of scented plastics, packaging, and even consumer goods, product designers are now capable of creating products that cater to all the senses. Odours can be used to complement a product's shape and functionality, to communicate its taste prior to purchase, to mask unwanted natural smells, and to create more pleasurable experiences. Smells should match their products in one way or another. Incongruent smells can still seem appropriate and lead to positive surprise, but Ludden & Schifferstein (2009) identified that in order for this to happen, they must still be strongly associated with the product's theme or context of use. These associations can be made through different product attributes, like: material, colour, theme, use, and environment.

SMELL & TASTE
EXPERIENCES



20 MINUTES

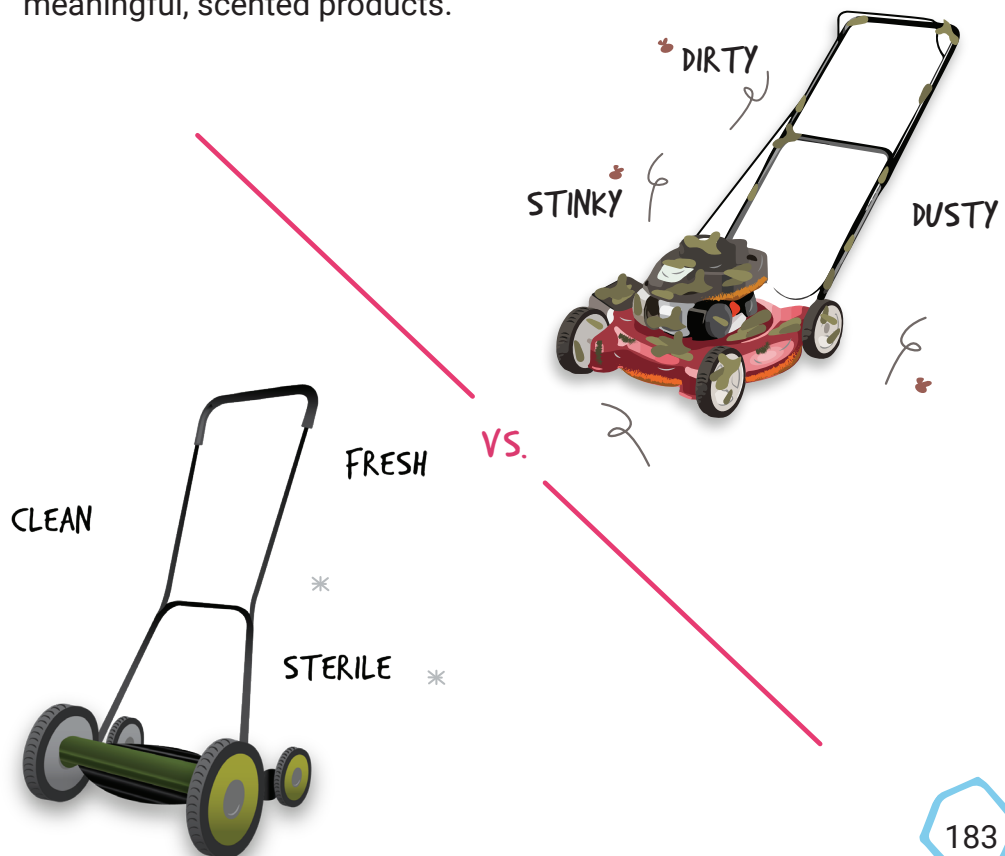


TEAMS OF 2

LEARNING OUTCOMES

- Identify connections between scents and products
- Determine the appropriateness of product scents
- Adapt sensory product attributes to strengthen product-smell connections

Smell Matching makes participants realize that by recognizing when scents don't match their products and the reasons for it, they are able to identify an appropriate use of scent in product design. By adapting products to better fit a given scent, they explore the possibilities of creating meaningful, scented products.





ACTIVITY GUIDE

1. Spread the deck of **Product Cards** and **Taste & Smell Tiles** face-down on a table

Each team will take 1 of each

2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity

3. Start the activity and use a **stopwatch or timer** to keep track of time

Tell players they have 5 minutes to complete steps 1-2

4. **At 5 minutes**, tell players to find another team and start presenting to each other

If they did not change their product, encourage them to pair up with a team that did. Keep presentations under 5 minutes for each pair of teams

5. Once teams are done presenting and discussing, tell them to **repeat steps 1-3** with a new set of products and scents

If there are not enough of either Product Cards or Tiles, or if teams are finished quickly, encourage them to come up with their own combinations – one person can name a product and the other a scent

6. **At 20 minutes**, finish the activity

7. If time allows, discuss how consequential and inconsequential scents can match their products through establishing strong associations

TASTE
& SMELL

TASTE
& SMELL

SMELL MATCHING



APPLY

Match scents to products by establishing strong perceived associations among them.

SUPPLIES

- Sense-It! Product Cards
- Taste & Smell Sense-It! Tiles
- Paper & sticky notes
- Coloured markers

INSTRUCTIONS

In pairs, select 1 Product Card and 1 **Taste & Smell Tile** at random

1. Discuss whether the scent on the Tile matches the product or not
Think of how the scent might be associated with the product; is there a common theme, context, or environment of use? Is it a consequence of something that occurs in the interaction, or is it added?
2. If the scent **matches**, move on to **step 3**. If the scent does **not match**, **brainstorm** and **sketch** ways in which the product could be adapted to better match the scent
Consider the product's colours, forms, materials, functionality, and overall expression
3. Find another pair and take turns presenting your scent-product match to each other. This will either be your reasoning about how the scent matched the product or your new product and how you adapted it to better match the scent
Discuss whether you agree or disagree with their choices and why. Identify and imagine the target consumer. Evaluate whether this combination would be perceived positively by the general public.
4. Repeat **steps 1-3** with new products and new scents
You can also come up with your own product and scent combinations by writing/sketching them on sticky notes

SUMMARY SMELLS

Are important to determine if a scent is appropriate or not. Their type and strength influence the extent to which an incongruent scent can be related to the product, and thus its degree of appropriateness (McLean, 2019).



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APPLY ACTIVITY

SOUND THE ALARM

... asks participants to pay attention to everyday sounds, establish their purpose and change them to more clearly communicate a message or an emotion about the intended use.

People are constantly surrounded by sound. The noise of traffic in the morning, the humming of the lights in the office, the singing of birds outside. According to Özcan, Cupchik and Schifferstein (2017) sounds can have a significant effect on a user and serve to enhance the experience of products.

Some environments generate an extensive amount of noise and create a condition known as alarm fatigue. This can have an increasingly negative effect on people over time, especially those who experience sensory overload.

AUDITORY
EXPERIENCES



30 MINUTES



TEAMS OF 2-3

LEARNING OUTCOMES

- Reflect on contextual sounds and their purpose
- Express meaning and emotion through sound
- Compose an arrangement of sounds to convey a message

KEYNOTE SOUNDS



BACKGROUND OR
CONSTANT SOUNDS

BECOME
IMPERCEPTIBLE
TO A USER
AFTER SOME TIME

EXAMPLES: SOUNDS OF
NATURE OR
AIR CONDITIONING

SIGNAL SOUNDS



INTENDED SOUNDS

DESIGNED TO
ALERT PEOPLE

EXAMPLES: ALARMS,
SIRENS, AND BELLS

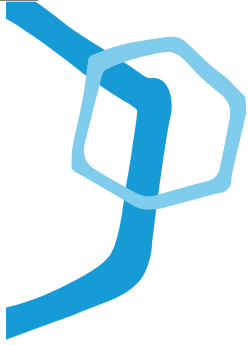
SOUNDMARKS



INCLUDE UNIQUE SOUNDS

USUALLY RELATED
TO A SPECIFIC CULTURE

EXAMPLES:
LANGUAGES, DIALECT,
AND MUSIC



ACTIVITY GUIDE

Note: Prepare a set of sounds that form a sound sentence or explore sounds online (<https://freesound.org/>). For example, hospital, beach, train station, playground, or construction settings.

1. Ask players to gather in teams
Make sure at least one player has a recording device
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
3. Start the activity and use a **stopwatch or timer** to keep track of time
Tell the players that they have 20 minutes to complete steps 1-5
4. **At 20 minutes**, tell players that they can find another team and share their new alarm
5. **At 25 minutes**, begin the discussion outlined in **steps 5-6**
This is an opportunity to relate the exercise to a broader discussion of auditory experiences
6. Continue the discussion for as long as time will allow



SOUND THE ALARM



APPLY

Reflect on auditory interactions that communicate information, using alarm fatigue as a frame of reference.

SUPPLIES

- Paper & pens
- Sound making tools
- Recording equipment (or phone)



INSTRUCTIONS

In teams of 2-3, come up with a set of sounds that form a **sound sentence** in order to create an effective auditory communication.

1. Determine an **environment** and imagine the typical sounds
E.g. hospital, control room, train station, waiting room, work site, kitchen, etc.
2. Write down **what each sound could mean** in that work environment
E.g. the purpose of each alarm, chirp, beep, tone, etc.
3. Create **new** or more suitable sounds for each condition identified previously
E.g. Cook time complete, engine overheating, train arriving, etc.
4. Using sound making implements or a series of audio clips, develop **sound sentences** for your chosen condition
How should the sounds progress?
5. **Record** your new alarm and take turns sharing with the other teams
Allow the other groups to guess your condition before explaining your new alarm(s)
6. **Discuss** with the other teams: What makes a good sound sentence?



ALARM FATIGUE

Occurs when users are desensitized to or ignore alarms in their vicinity due to their ineffectiveness or annoying nature.

SOUND SENTENCE

A series of sounds that communicate an important message.





APPLY ACTIVITY

SURPRISE ME

... prompts participants to explore visual-auditory incongruities and encourages them to come up with ways to make that surprise experience positive.

Surprise can occur when sensory information from two or more senses conflict. If used wisely in products, it can evoke interest and create new experiences. It first starts with a well established expectation of the type of sensory features a product should have, which will then be disconfirmed by interacting with the product. According to Ludden & Schifferstein (2007), auditory expectations can be formed from memories, current perceptions, and inferences drawn from related experiences. Product expression and perceived product quality are both influential in the formulation of people's expectations. Sounds incongruent with these expectations may evoke surprise.

Surprise Me teaches participants to positively influence product perception and experience through sensory design features, specifically auditory ones.

EMOTION &
MEANING



30 MINUTES



TEAMS OF 4-6

LEARNING OUTCOMES

- Analyze multi-modal features of product interaction
- Explain the effects of sound on product experience
- Explore how to design with visual-auditory incongruities



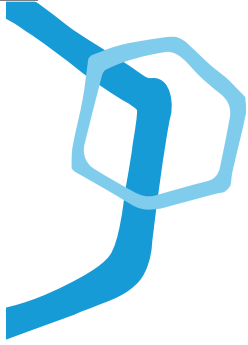
OBTRUSIVE
LOUD
ROBUST

UNOBTRUSIVE
QUIET
FLIMSY



CHEAP
ORDINARY

EXPENSIVE
EXCLUSIVE



ACTIVITY GUIDE

Note: This activity requires that the facilitator provide each team with sound making implements, or encourage them to come up with their own. We recommend audio clips (explore <https://freesound.org/>), small instruments like maracas or harmonicas, body parts, or other small objects that can produce sound.

1. Gather players into groups of at least **4 people**
Then, divide each group into Team A and Team B
2. Spread the deck of **Product Cards** face-down on a table
Each team will take 1
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Start the activity and use a **stopwatch or timer** to keep track of time
5. **At 10 minutes**, tell teams to start presenting to one another and observing for the other team's reaction
6. **At 15 minutes**, tell teams to take another product card and switch roles
7. Finish the activity once all sub-teams have presented their sounds to each other

SURPRISE ME



APPLY

Understand how sound can influence expectations of the visual and tactual characteristics of products through sensory incongruity and surprise.

SUPPLIES

- Sense-It! Product Cards
- Paper
- Pens
- Sound making tools

INSTRUCTIONS

Gather into teams of 4-6, then divide members into Team A and Team B.

1. As a **whole team**, take 1 Product Card at random. Define your own version of this product by describing how it **looks & feels**
Try to specify its colour, materials, and size; you can take note of these characteristics
2. Have **Team A** discuss what **sounds** this product makes during user-product interaction
Pick 1 sound to focus on and do not change it, imagine it as it typically is
3. Discuss what you would **expect** the product to sound like using words from the **scales** of quality and product expression listed below and **describe it to Team B**
What are your expectations based on? Memories, perceptions, or inferences of how your product looks and feels?
4. Now, **Team B** will **brainstorm** a new sound that is **incongruent** to Team A's expectations, use the opposing words on the scale as reference. Try adding an element of **surprise!**
Create your sound using sound-making tools/audio clips without Team A hearing
5. Present your sound to Team A and observe if they have a surprise reaction
Switch roles and repeat the above with a new Product Card. Discuss what factors made your sounds surprising (or not). Did your perception of the product change?

SENSORY INCONGRUITY

Occurs when the information retrieved through different senses is conflicting (e.g. a pillow that looks like a rock) (Ludden et al., 2007)

SCALE EXAMPLES

- | | | |
|-------------------------------|--------------------------|---------------------|
| • Unobtrusive vs. Obtrusive | • Edgy vs. Round | • Quiet vs. Loud |
| • Powerful vs. Powerless | • Robust vs. Flimsy | • Small vs. Big |
| • Extroverted vs. Introverted | • Ordinary vs. Exclusive | • Tough vs. Cute |
| • Expensive vs. Cheap | • Masculine vs. Feminine | • Serious vs. Funny |



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APPLY ACTIVITY

TASTE JOURNEY

... explores synaesthetic transfer from one sense to another by inviting participants to try expressing their perceptions through taste.

Synaesthesia occurs when the incoming information from one sense is also experienced through another sense (e.g. *hearing* colour or *seeing* sound). By drawing from the 5 basic tastes (sweet, salty, sour, bitter, umami), participants will create edible compositions to narrate their experiences.

This may feel foreign, and even tricky, but it is an opportunity for participants to appreciate the complexity of perception and challenge typical means of expression — for example, a siren is often expressed as “loud and piercing”, but could it also be expressed as “sour”?

MULTISENSORY
& KINETIC
EXPERIENCES



60 MINUTES

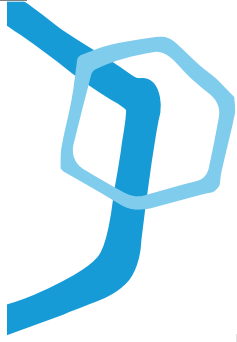


EVEN # OF
TEAMS OF 4-5

LEARNING OUTCOMES

- Detect sensory stimuli
- Interpret experience through taste to simulate a synaesthetic experience
- Explain the multi-modal nature of perceiving sensory qualities of places and products





ACTIVITY GUIDE

Note: *This activity requires more extensive preparation from the facilitator by purchasing the various special supplies, as well as preselecting a variety of nearby locations for teams.*

1. Place samples of **food items** from all 5 categories of basic tastes in small **paper cups or plates** on a table, as well as **utensils and latex gloves** for hygienic use
E.g. fruits, vegetables, breads, cereals, chocolate, candies, chips, crackers, spices, coffee...
2. **Assign** a nearby indoor/outdoor **location** to each team and provide a map if possible
3. Read only **steps 1-2** of the **Activity Card** out loud
Ensure that all players understand the activity
4. Start the activity and use a **stopwatch or timer** to keep track of time
Ensure teams know they only have 20 minutes to complete steps 1-2 before returning
5. **At 20 minutes**, have teams return and pick up their supplies. Read the rest of the steps out loud before allowing them to begin **steps 3-4**
6. **At 50 minutes**, have teams **pair up** with one another to present their taste journeys
7. Finish the activity once all teams have shared their edible compositions, and discuss experience if time allows



TASTE JOURNEY



APPLY

Engage in a synaesthetic experience to explore the design of taste. Gain an understanding of the evocative properties of taste.

SUPPLIES

- Pen & paper
- Disposable gloves
- Plates & tiny cups
- Small bits of food & spices

INSTRUCTIONS

In teams of 4-5, embark on a taste journey by walking to a given location, and:

1. As a team, observe the surroundings of your location
Pay attention to the sensory features (e.g. visual, auditory, tactile, smell, taste)
2. Take **20 minutes** to observe at least **5 perceptions** of the surrounding location, and capture your perceptions before returning from the journey
E.g. sketch with notations - loud train passing over a bridge, smell of freshly cut grass
3. Wearing gloves, use the food supplies to make **1 edible composition** that represents your team's perceptions
Layer the 5 perceptions into 1 composition to create a synaesthetic experience
4. Prepare identical samples of the composition for each of the members of 1 other team
With another team, take turns sharing edible compositions. Do not share your location
5. While the other team eats the composition, provide a **narrative** of how these tastes represent the overall sensory perceptions of your location
Describe your perceptions using the edible composition
6. The team who ate the composition must **guess** the location
Use the narrative as hints

EDIBLE COMPOSITION

The careful selection of flavours to be combined and designed into a meaningful bite-sized snack.

SYNAESTHETIC EXPERIENCE CREATION

Translating the perception from one sensory stimulation to a different sense (e.g. hearing colours) (*Kandinsky, 1910*).



APPLY ACTIVITY

VIBRATIONAL PATTERNS

... is an activity that encourages participants to consider various kinds of haptic feedback, communicate a message and affect users' experience only by influencing auditory and tactile senses.

Haptic Language

Effective communication through touch can be achieved through the development of a haptic language. Touch shares many attributes with sight and hearing and creates important associations that support one another. For instance, the visual excitement generated by a hot color like red might translate to an abrupt, racing, hot haptic sensation which can indicate that an object is hot.

TACTILE PRODUCT
INTERACTIONS



20 MINUTES



TEAMS OF 2-4

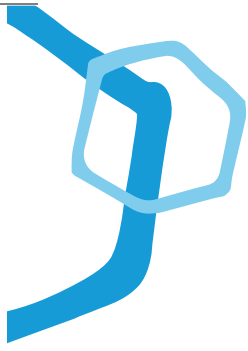
LEARNING OUTCOMES

- Identify functions of haptic-feedback
- Match existing haptic notifications with users' mental models
- Generate a message through vibrational patterns

Haptic Feedback

Haptic feedback is a digital design interface element that uses touch to communicate with users. The most common type of touch/tactile feedback is vibrotactile. Familiar examples include vibrations on mobile devices or the Rumble Pak on a game controller.





ACTIVITY GUIDE

1. Ask players to gather in teams
Make sure at least one player has a recording device
2. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity.
The teams shouldn't overhear each other, so encourage the players to spread out!
3. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they have 10 minutes to complete steps 1-4
4. **At 10 minutes**, allow players to present new patterns
Keep presentations under 1 minute!
5. After all players presented begin the **discussion** from step 6 if time allows
This is an opportunity to relate the exercise to a broader discussion of communication through the use of haptic feedback

VIBRATIONAL PATTERNS



APPLY

Compose vibrational patterns to haptically communicate different kinds of cellphone notifications.

SUPPLIES

- Paper
- Pens

INSTRUCTIONS

In teams of 2-4, imagine that you are designing haptic feedback for a cellphone

1. Select **4 out of the 7** cellphone notification types from the box below
2. Design **4 vibrational patterns** that communicate each of your selected features
E.g. create haptic feedback to inform the user that their cellphone has a low battery
3. **Drum your hands & fingers** on a table to create the vibrations
Consider how hard & how fast you drum
4. **Write, draw or sketch** the new patterns
Rehearse your 4 vibrational patterns
5. **Present your vibrational patterns & let other teams guess your 4 cellphone notifications**
Do not tell the other teams which features you are presenting
6. **Discuss** your experiences in creating & guessing vibrational patterns
Were there any challenges? Was the task easy?

CELLPHONE NOTIFICATIONS

1. Alarm
2. Incoming phone call
3. Low battery
4. Turning phone off
5. Emergency
6. Incoming text message
7. Outgoing text message





APPLY ACTIVITY

VOCAL SKETCH

... encourages participants to portray a descriptive and emotionally charged soundscape . But here's the catch – no words allowed! Participants will engage in vocal sketching to mimic sounds and interactions within a scene.

Sound is emotionally charged. For example, the sound of a growling dog might incite fear, or a baby's laugh might bring joy. Sound can also be subjective, be perceived differently by various people and have unique emotional associations.



AUDITORY
EXPERIENCES



30 MINUTES

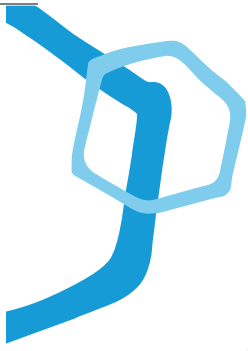


TEAMS OF 3-4

LEARNING OUTCOMES

- Develop listening skills to identify distinct sounds
- Link sounds to emotional perceptions
- Practice composing soundscapes





ACTIVITY GUIDE

Note: *print out a set of scene photos. For example, they can show a kitchen setting, a nature scene, a busy city street or a playground. Additionally, prepare a set of cue cards with unique emotion cues.*

1. Setup a **curtain** to conceal players while they present
The curtain can be cloth, cardboard, a wall, etc.
2. Handout **1 scene photo** per group
Keep each team's scene secret from the other teams
3. Read the **Activity Card** out loud to the players
Ensure that all players understand the activity
4. Start the activity and use a **stopwatch or timer** to keep track of time
Tell players they have 20 minutes to complete steps 1-4 and that they are expected to present their process work
5. **At 20 minutes**, begin presentations
Have presenters stand behind the curtain while presenting for others to guess the scenario & emotion
6. Discuss **steps 6-7** after each presentation
This is an opportunity to relate the exercise to a broader discussion of emotionally charged user-product interactions



VOCAL SKETCH

APPLY

Create an emotionally charged vocal sketch scenario using a photo in which people interact with something in their everyday lives.

SUPPLIES

- Scene photos & curtain
- Paper
- Pen
- Emotion cue cards

INSTRUCTIONS

In teams of **3** or more, choose **1 photo** & **1 emotion** cue to create a vocal sketch, and:

1. Break down the sounds in your photo's scenario to develop a **vocal sketch**
What types of sounds are typically produced in your scene?
2. Use your selected emotion to create an overall **tone** for your vocal sketch
What would this emotion sound like in your scene?
3. Organize the significant sounds & interactions into a **30-60 second soundscape**
Embed emotional associations to evoke feelings of emotion and memories
4. Vocally sketch the sounds by using **body parts** (eg. hands tapping, clapping, feet stomping, etc.) and **document your process** and iterations by writing, sketching or drawing the sequences
E.g. non-speech noises, humming, tongue clicking, etc.
5. Perform your descriptive soundscape behind a curtain or otherwise **concealed**
Other teams will try to identify your scenario & emotion without watching you
6. Identify other emotions that could also fit into this scenario, and discuss what types of emotion you think would be ideal
Discuss why these emotions belong here and your practical experiences with user-product interaction that have evoked these emotional associations for you

VOCAL SKETCHING

Using vocal noises as a tool to describe sonic interaction (e.g. mimicking sounds to tell a story without words)

EMOTIONAL ASSOCIATION

Triggering or evoking feelings of emotion and memories through sensory stimulation

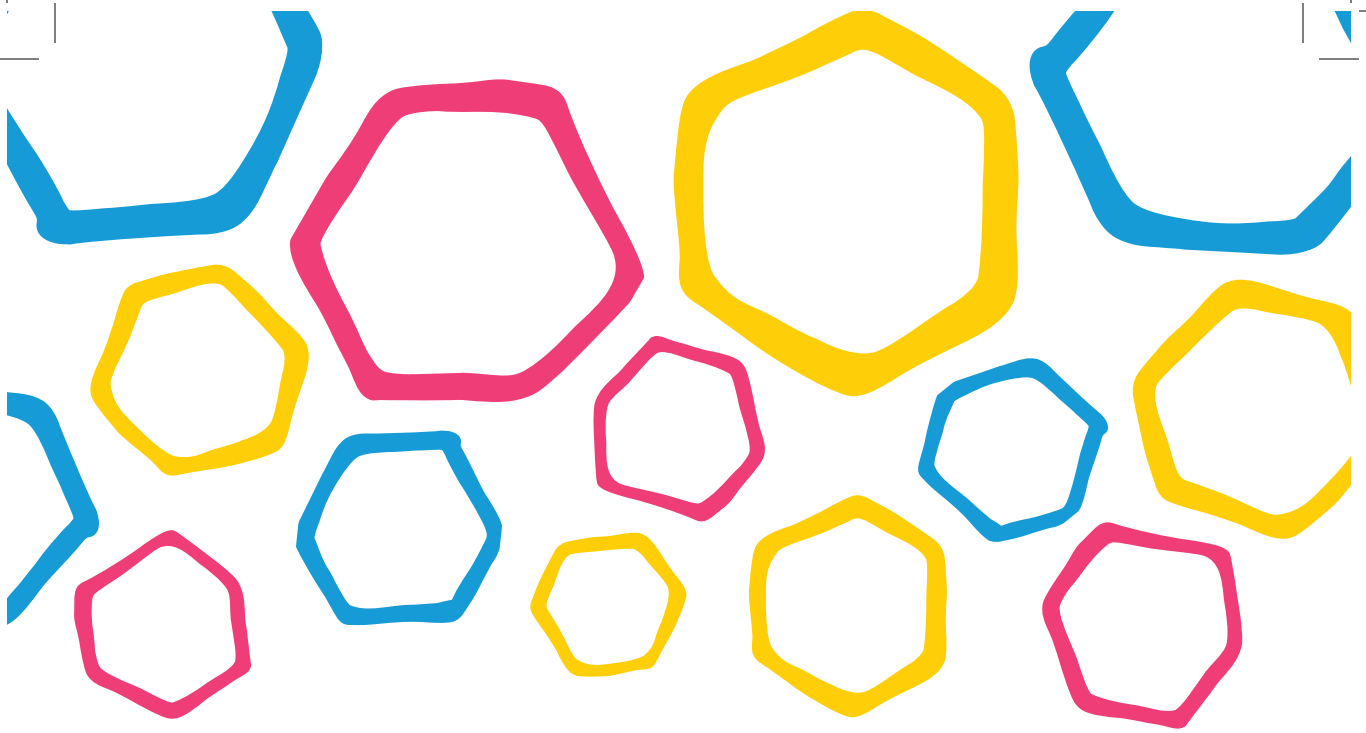
Activity Card inspired by: (Frankel et al., 2018), (French St. George, 1996)

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ADDITIONAL
INFORMATION
& CONCLUSION

WHAT ARE SENSE-IT! TILES?

Consisting of *140 pieces* divided into *7 sensory mode categories*, the Tiles can be used as a fun way to help create awareness of the multisensory aspects of design. They prompt participants to consider holistic, multimodal experiences through a recognition and understanding of how the sensory modes contribute to each other and experience. Each Tile features a descriptive word, paired with an image that provides an example of a specific concept.

Communication

The Tiles provide terminology for reflecting on, describing, and sharing the multimodal and sensory qualities of experiences with products and places. By establishing a shared language among participants, and ensuring an equal level of understanding, they may help with idea sharing. They can be used as discussion prompts to make meaning of design problems and decisions—creating an understanding that design is subjective and everyone’s experiences and perceptions are unique.

Exploration

The Tiles may be used as tools for collective brainstorming, iteration, and investigation by mapping and identifying relationships among multisensory qualities. These relationships can be explored through: comparing attributes, pairing opposites to create sensory incongruities, or harmoniously expressing an attribute across all senses. Through a heightened sensory awareness, users are able to consider new creative avenues and produce novel ideas.

How can they be used and who can use them?

Several *Sense-It!* Activities recommend using the Tiles in different ways to support the challenge at hand. They nest together as a metaphor for connecting attributes into a whole and can be moved freely to explore different combinations. With them, users can make connections among products, their attributes, and/or interactions.

They can also be used on their own, in domains such as product, service, interaction, and environmental design. They may be used as supporting tools for: identifying and illustrating pain points, creating rich experiences, analyzing emotional responses, and visualizing the puzzling pieces related to various design experiences.

The benefit of the Tiles is that they can be used by designers and non-designers in a variety of disciplines; they are ultimately tools for design thinking.

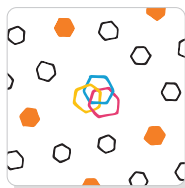


WHAT ARE SENSE-IT! PRODUCT CARDS?

Consisting of 60 cards divided into 3 categories, the Product Cards are a quick and handy collection of assorted product examples. They have been adapted from existing products and showcase a wide variety of functions, compositions, movements, and aesthetics. They serve as a reference in several of the *Sense-It!* Activities where participants are asked to either analyze, categorize, portray, or adapt products to achieve the learning goals.

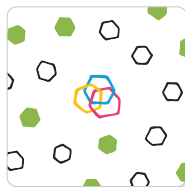
The Product Cards are grouped as follows based on complexity:

BASIC



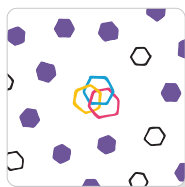
FEW MATERIALS
OBVIOUS FORMAL
ELEMENTS

MODERATE



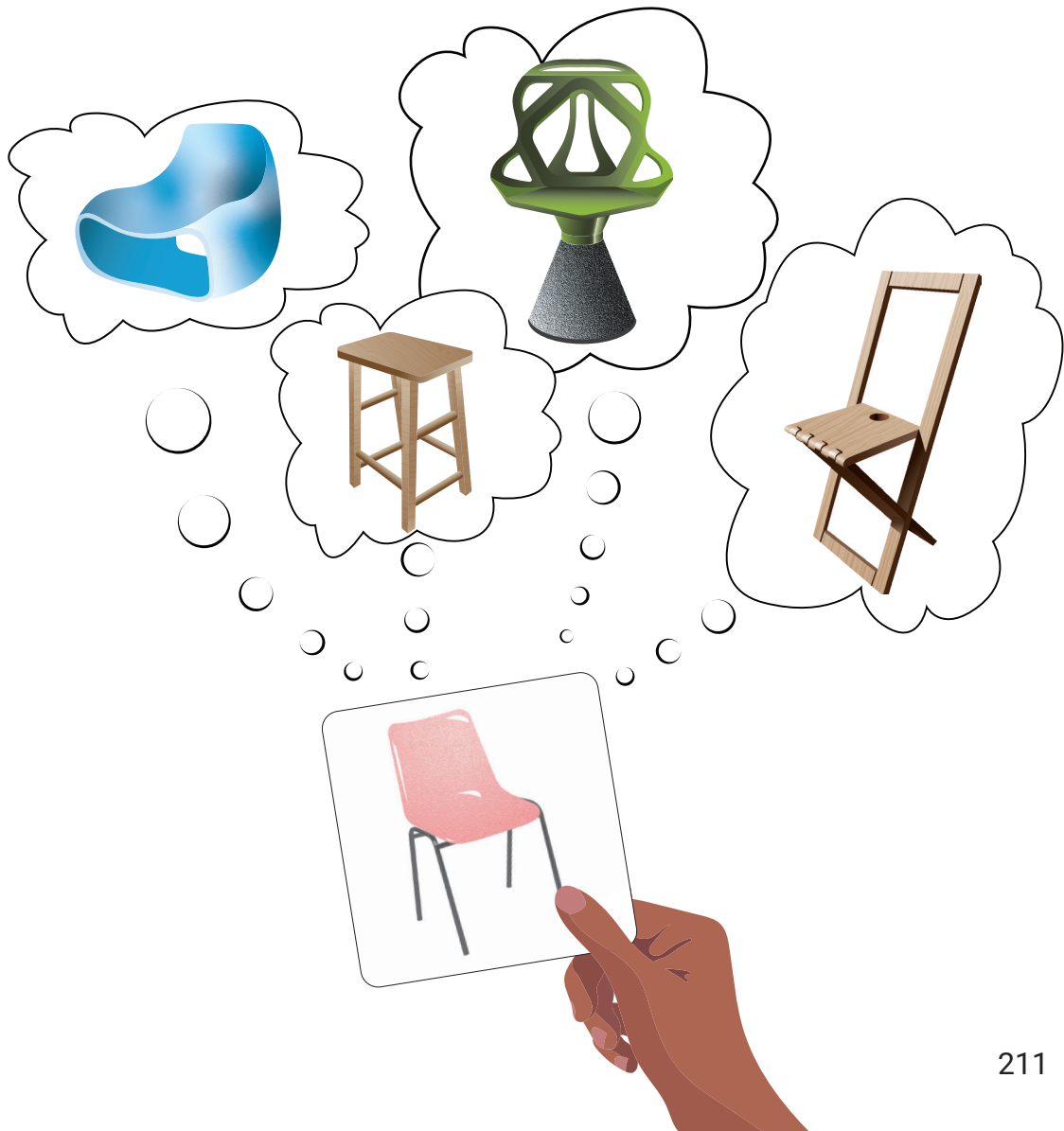
SIMPLE MOVING
PARTS
COMBINED SHAPES

COMPLEX



MULTIPLE
MATERIALS
ORGANIC FORMS

While some activities ask participants to consider the exact product on a Product Card, other activities give participants the creative freedom to use the Product Cards as a starting point and imagine different possibilities.



PRODUCT CARD BANK

Some Activities can utilize all of the Product Cards, whereas other Activities are optimized through the use of certain Product Cards. These are specified here.

Kinetic Charades, Kinetic Actions — moving parts



Kinetic Communication — interactive movement (cards above + the following)



In Harmony – multiple visual sub-components



Why Sound?, Sound Comic – distinct or unique sounds



CONGRATS! YOU'VE MADE IT!

Our team hopes that through the use of this guide and the activities within it, you will be able to facilitate an immersive and interactive educational environment in which people will gain more than just knowledge. By exploring and becoming aware of how experience can be broken down, one can appreciate how a designer's choices help create a richer and often more inclusive experience when all sensory aspects are considered.



Our Story

The Sense-It! project was inspired in response to a studio course called Form and Colour that I taught for many years. As I began to learn more about sensory anthropology and the original exploratory framework of the Bauhaus, I realized that our design curriculum focuses predominantly on visual and formal composition and barely on the multi-layered sensory interactions that people experience everyday. Where would designers learn about and practice approaches to integrating sensory features into the design of products, environments, and services? In a new course: Sensory Aspects of Design and Experience!

Transitioning from a studio to a lecture course required a big leap to keep our hands-on design students engaged, so I began to insert experiential modules into my lectures. With the synergy and playfulness of a great team of research assistants and educational specialists, the modules blossomed into these exploratory activities. The Sense-It! team is a bit like an interactive snowball and, as we roll along, we gather more ideas and more members. Up to this point, 15 of us have had an amazing time creating, testing, and refining our learning materials and sharing them with others.

- Dr. Lois Frankel



Acknowledgments

We would first like to thank all of the wonderful organizations that have made and continue to make this project possible through their support...

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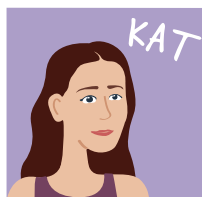
Acknowledgments also go to those who's work inspired this content. These include *Paul Hekkert, David Howes, Lucas Lacerda, Kate McLean, Elif Özcan, Owain Pedgley, Rick Schifferstein, Marieke Sonneveld, Jason Morris, and Christine Park and John Alderman.*

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And finally, to the amazing educators who saw the vision - *Lois Frankel, Eileen Harris, and Claudie St-Arnaud.*



THE SENSE-IT! TEAM



THIS SPACE IS FOR YOU!

We know that running an activity takes good preparation, so feel free to use this space to organize your thoughts.

SUPPLIES



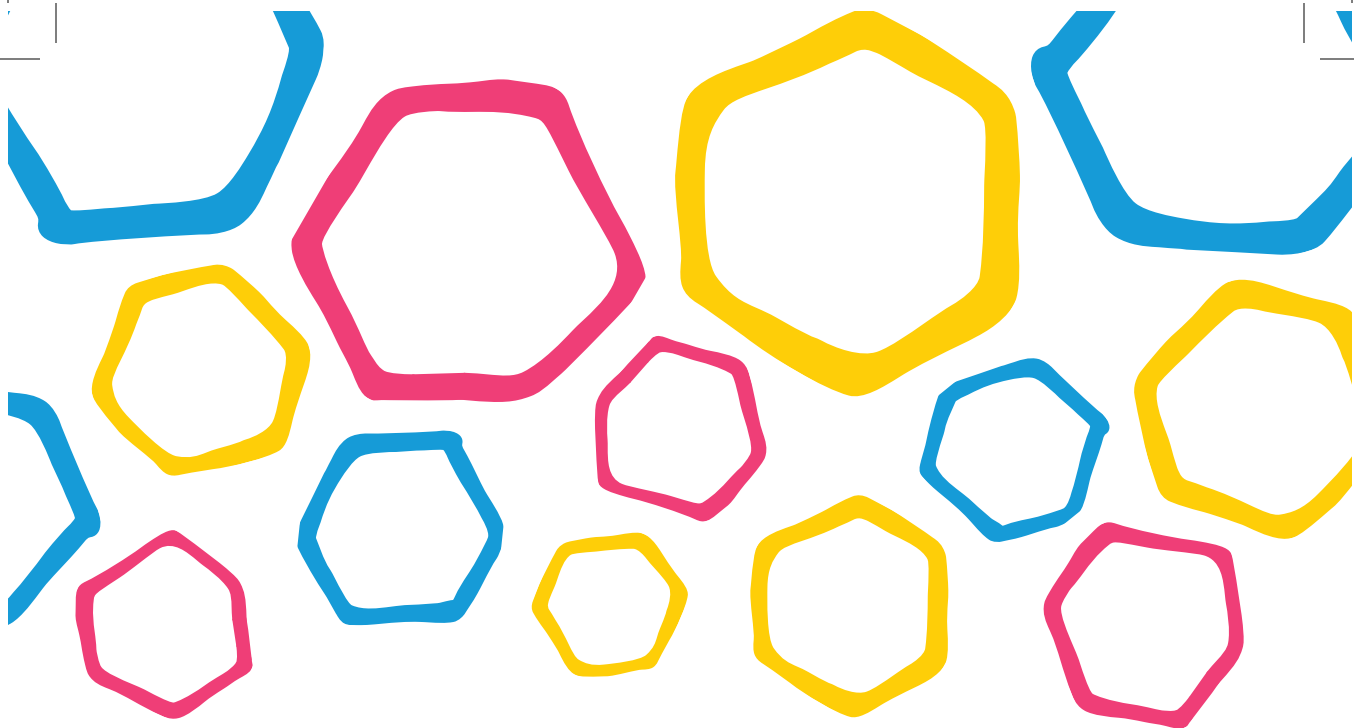
KEY CONCEPTS



POINTS FOR DISCUSSION

A large, empty rounded rectangle box with a thin black border, intended for writing discussion points. The box is centered on the page below the title.





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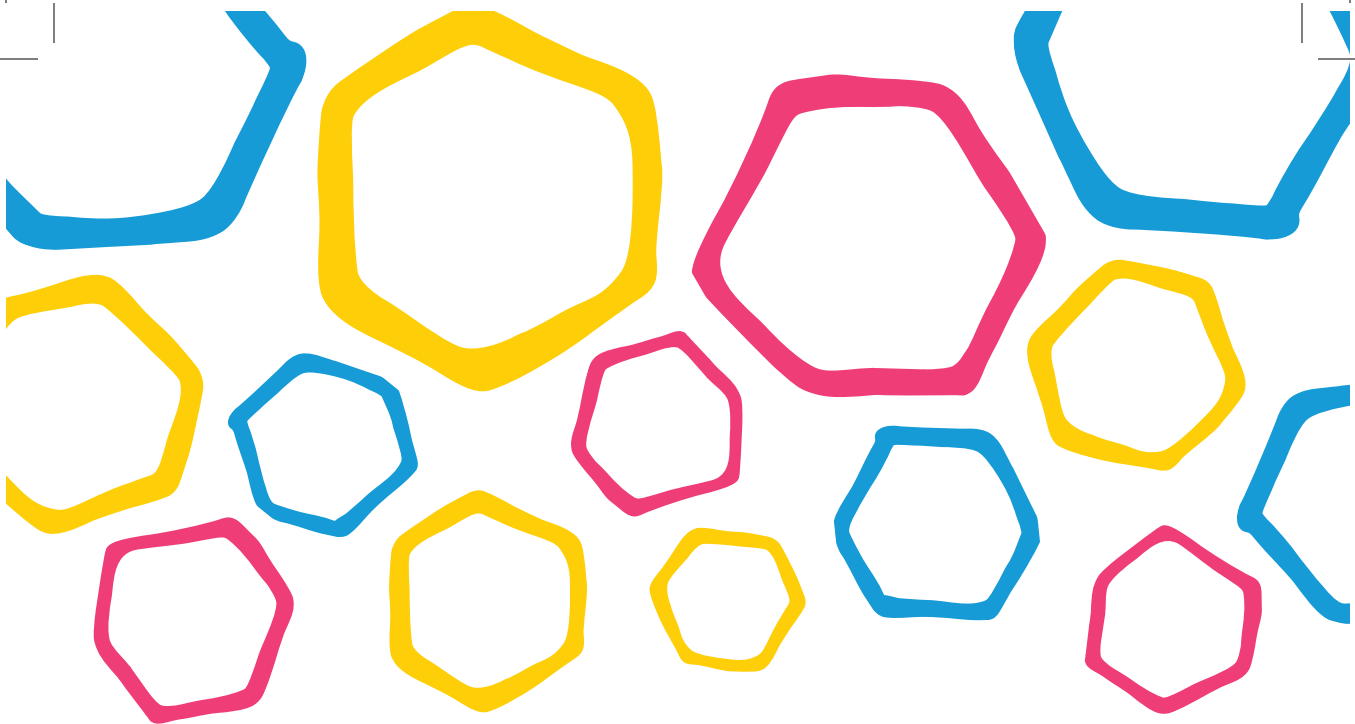
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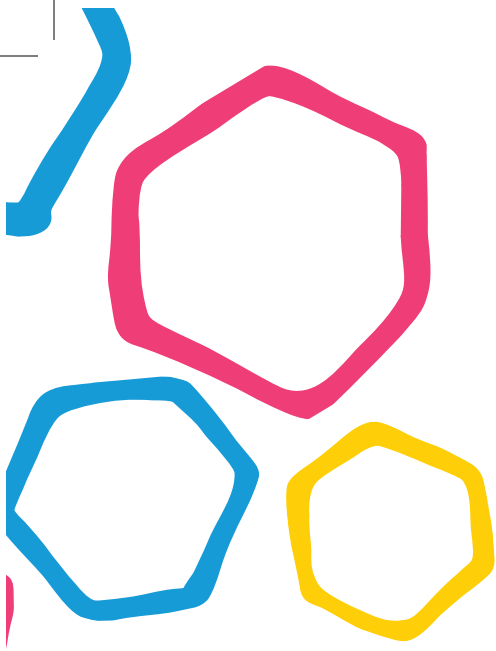
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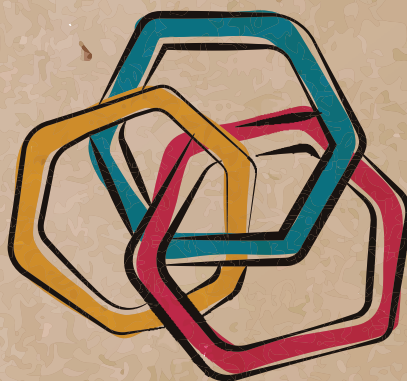
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KIT RESOURCES



The *Sense-It!* Kit resources that are described in this Facilitator's Guide are compiled in separate documents for ease-of-use. These documents include: the *Sense-It!* Activities along with several Accompanying Resources, the *Sense-It!* Product Cards, and the *Sense-It!* Tiles.



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