Keuze project

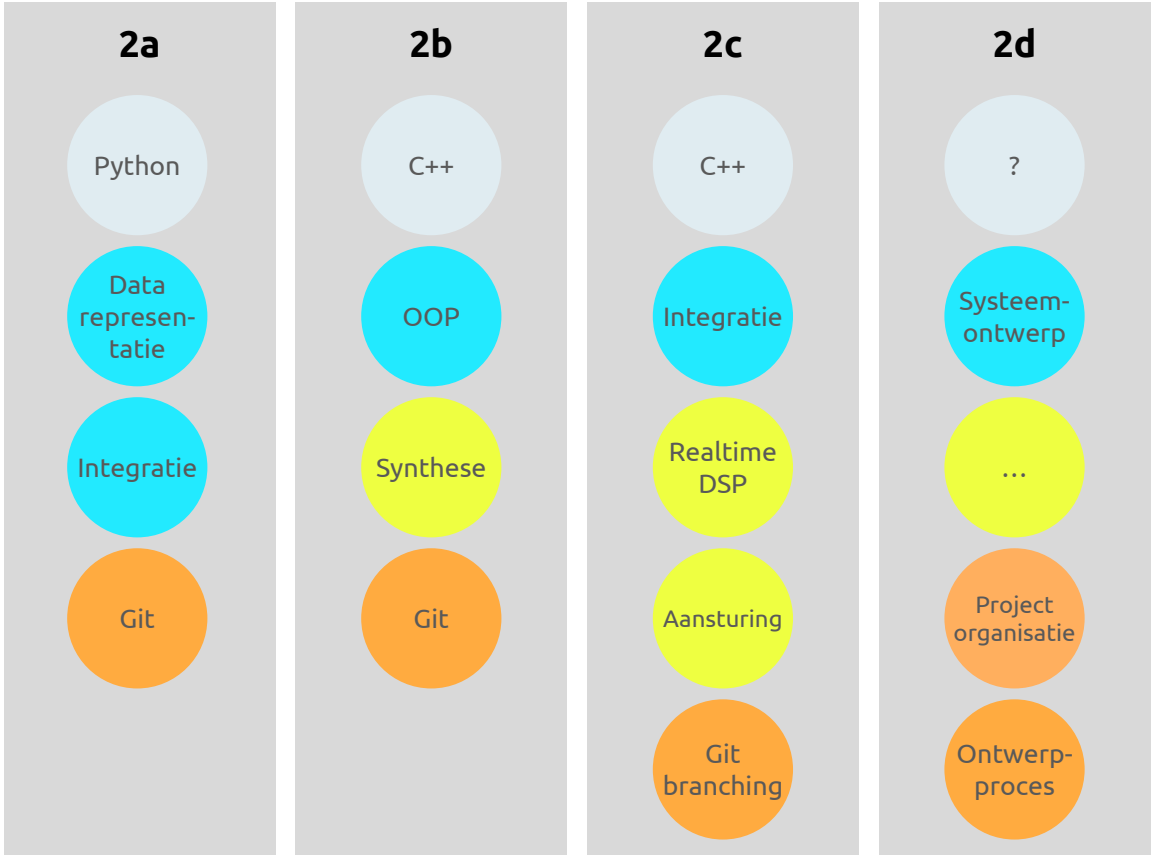
CSD2d

1. Introductie

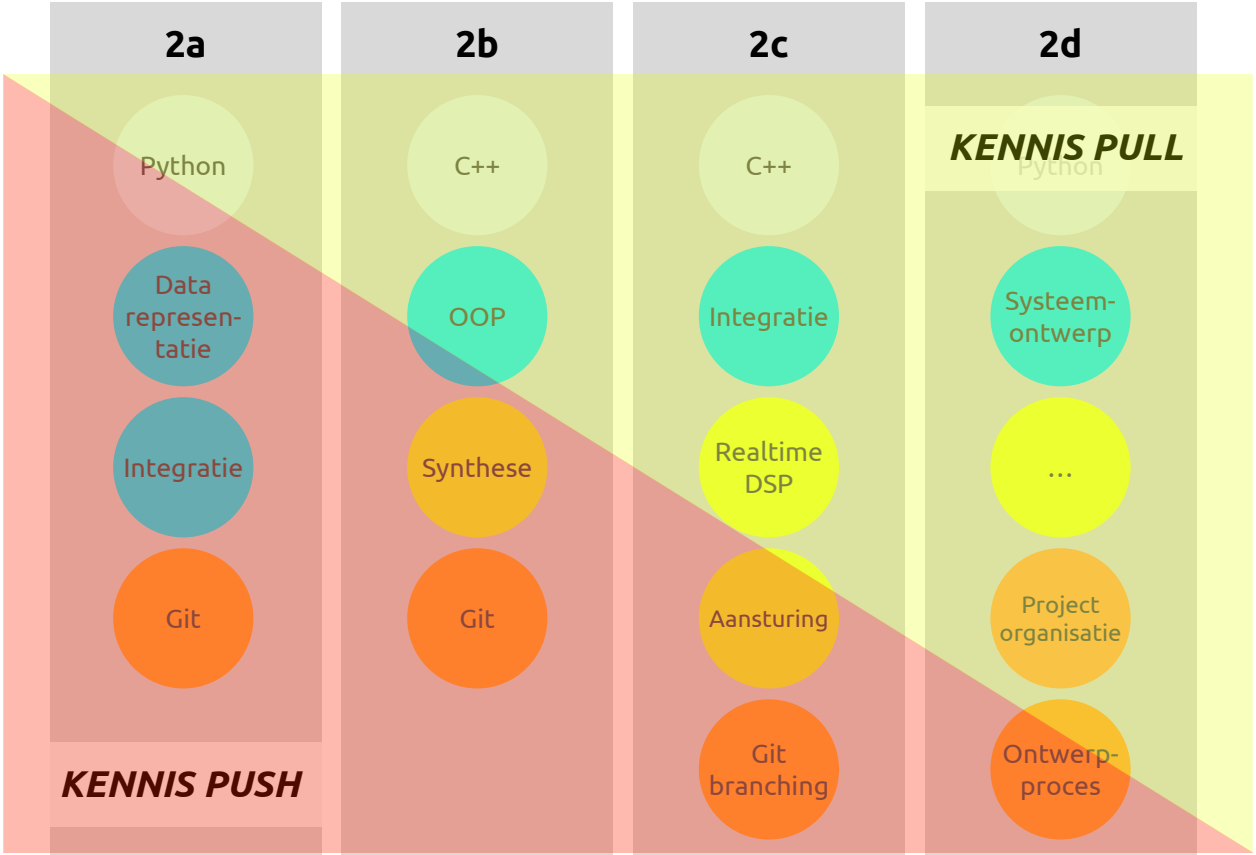
Cross fade ;)

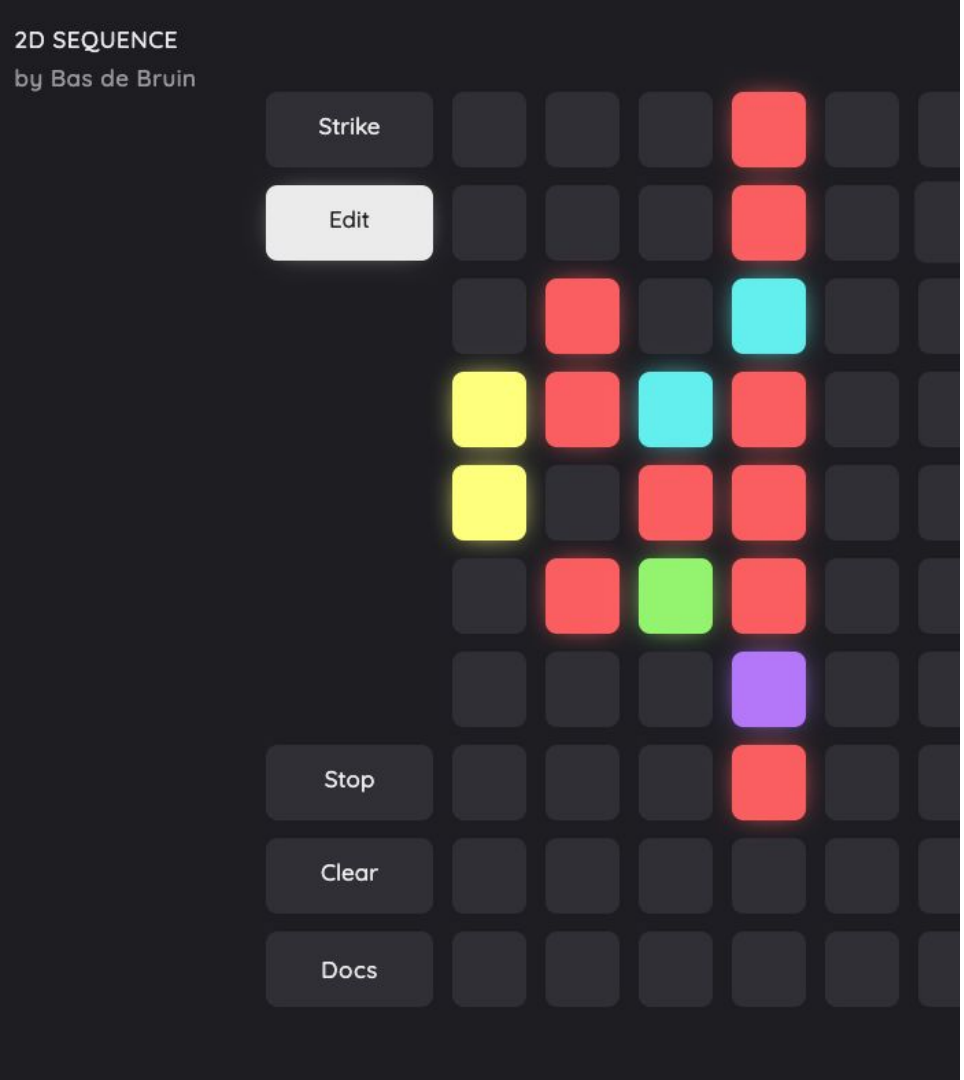
Voorbeeld projecten

Opzet Blok 2d - CSD jaar 2



Opzet Blok 2d - CSD jaar 2

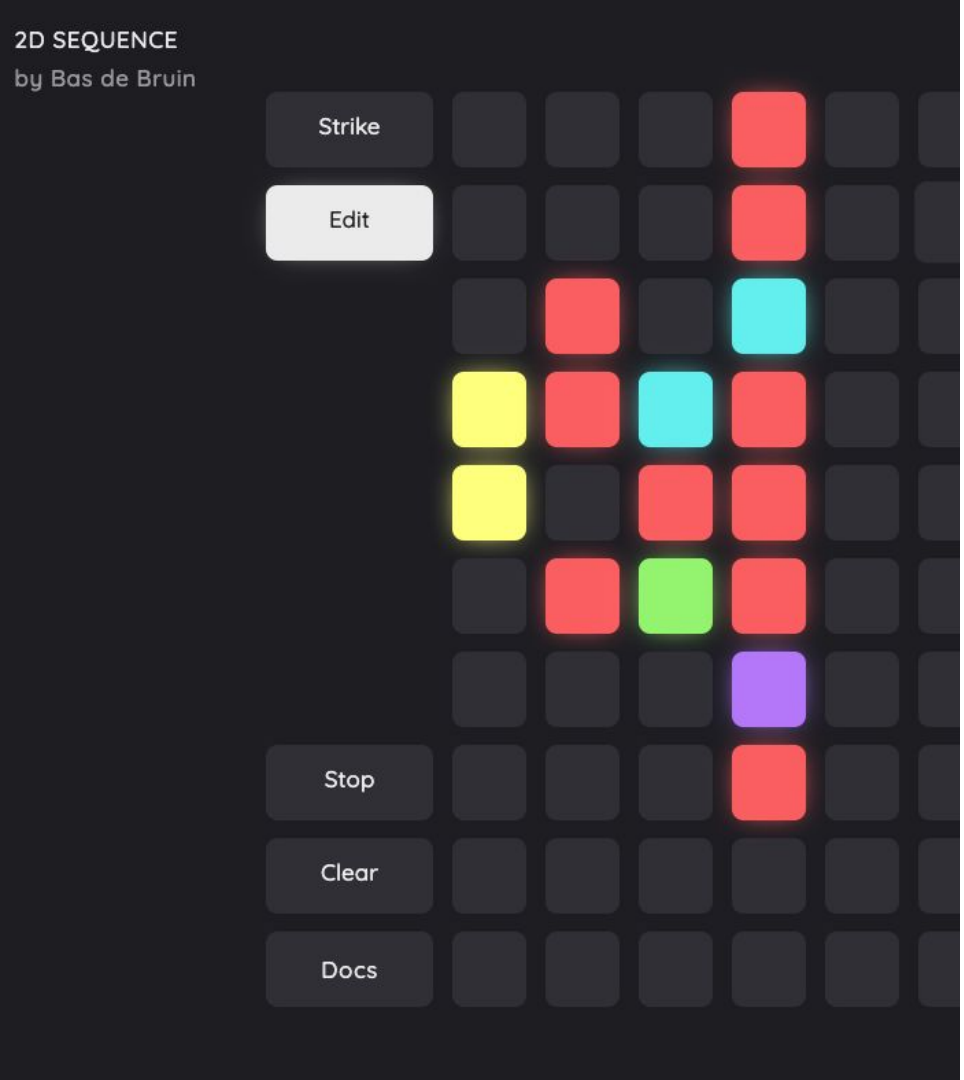




Keuze project

“In dit blok voer je één of twee **eigen projecten** uit, bij voorkeur met enkele klasgenoten. De keuze van het project en welke programmeertechnieken, talen en systemen je gebruikt is heel ruim en bepaal je in overleg met de docenten.”

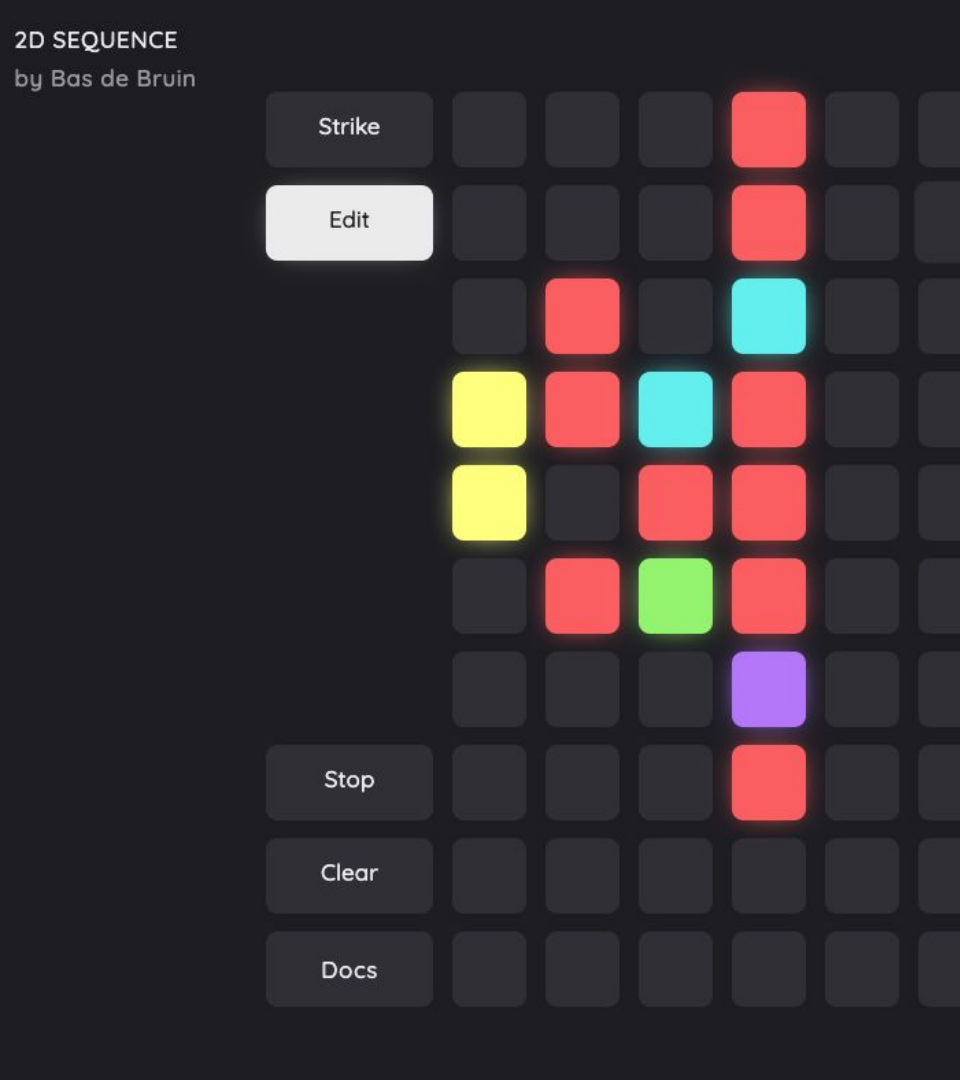
https://basdebruin.github.io/2d-sequence/, https://sirius.hku.nl/blok-2d-csd-project/



Keuze project

- Beoordeling
  - Behaald / niet behaald *(Goed bij voldoende aanwezigheid)*
- Benut artefact (en proces!) als portfolio - eindejaars presentatie

https://basdebruin.github.io/2d-sequence/, https://sirius.hku.nl/blok-2d-csd-project/



Voorbeelden

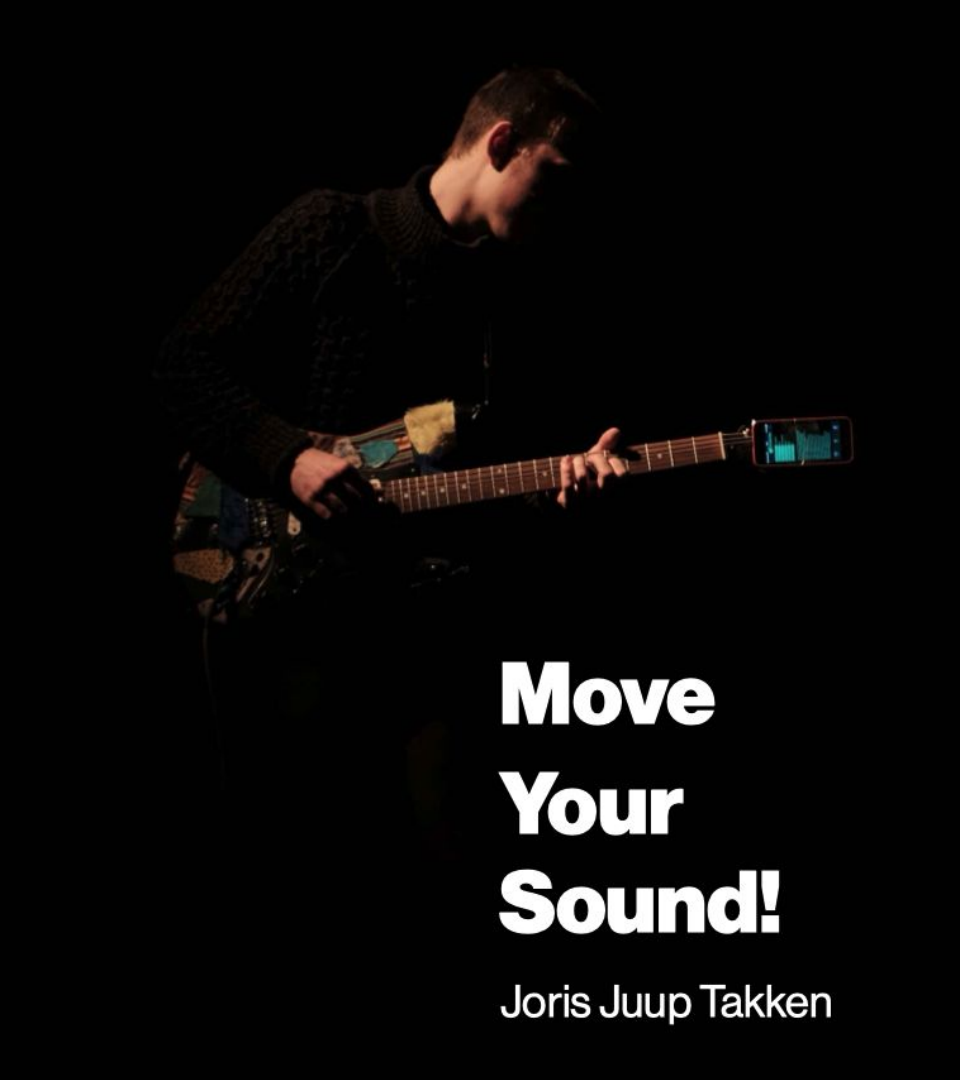
https://basdebruin.github.io/2d-sequence/

Voorbeelden

https://studentpress.hku.nl/jari.deelstra/?p=61

Voorbeelden

https://studentpress.hku.nl/jari.deelstra/?p=61

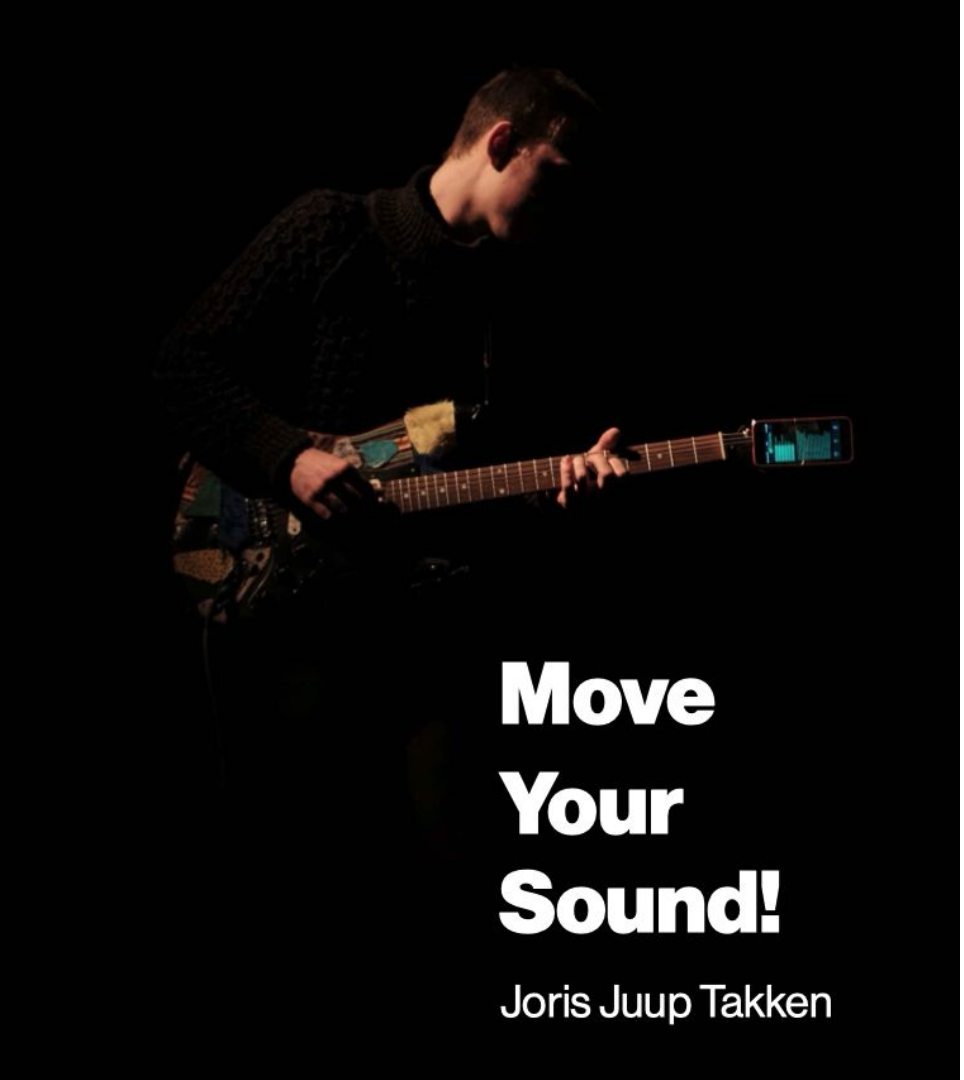


Voorbeelden

https://joristakken.nl/portfolio/move-your-sound/

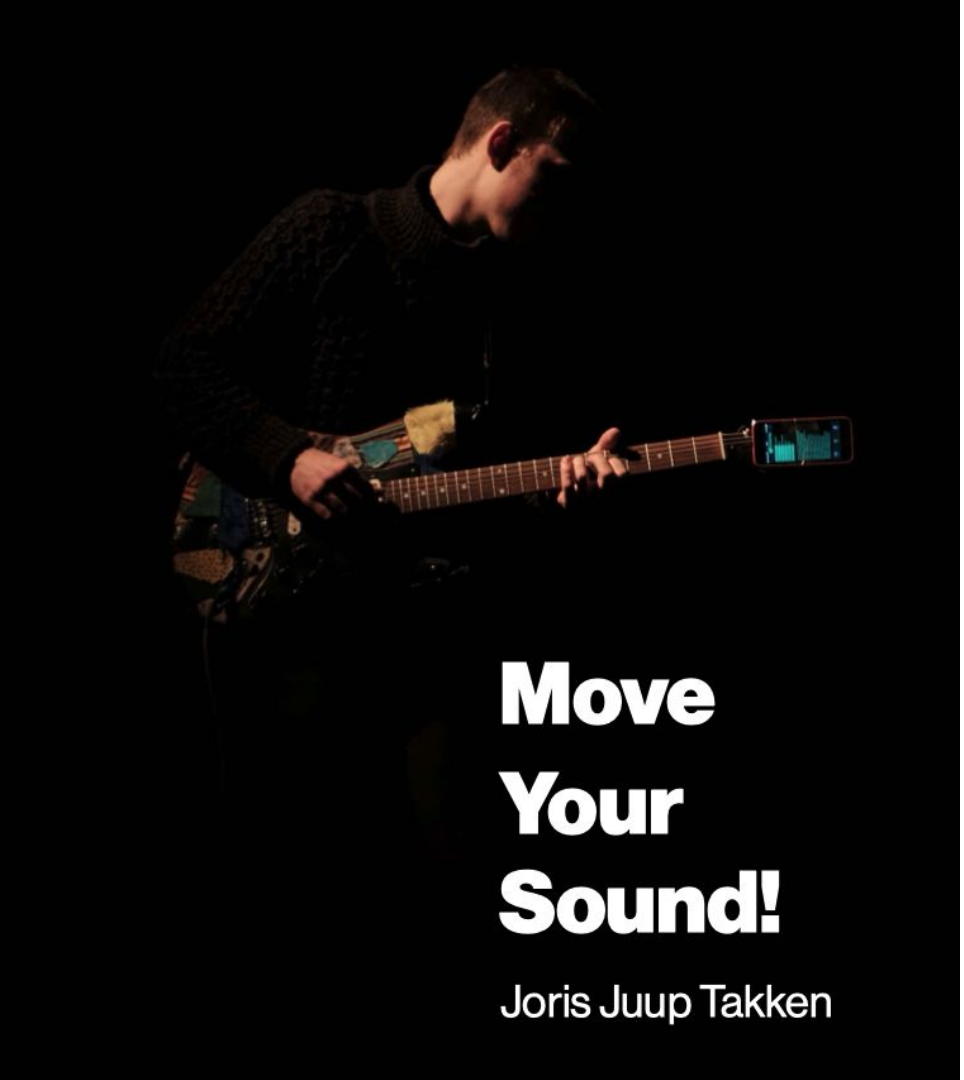
- **CSD2d**
  - Proof of Concept
  - Proof of Technology
- **SN**
  - maker onderzoeker profiel


CHICO STA
JUST DO



CSD2d - Centrale aspecten

- Project omschrijving
- Planning
- Leerdoelen
- Criteria



Centrale aspecten

- Project omschrijving
- Planning
- Leerdoelen
- Criteria

EN **ONDERBOUWING**!

- Gehanteerde proces
- Ontwerpkeuzes
- Leerdoelen

2. Aan de slag

Eerste idee

Een idee

Individueel, 15 min.

Bedenk wat je wil doen komend blok en probeer dit te vangen in een idee.

Kom je tot niets? → *freewriting*

> Schrijf alles op wat in je gedachten op komt. Dus ook *“Ik heb echt geen idee, wat een * opdracht dit …”*.
> (10 min. schrijven & 5 min. reduceren)

image source: https://www.yogajournal.com/lifestyle/what-is-freewriting/

Een idee

Reflectie

- Hoe ging dit?
- Paar ideeën delen

image source: https://www.yogajournal.com/lifestyle/what-is-freewriting/

Een idee

Eerste idee → weg ermee!

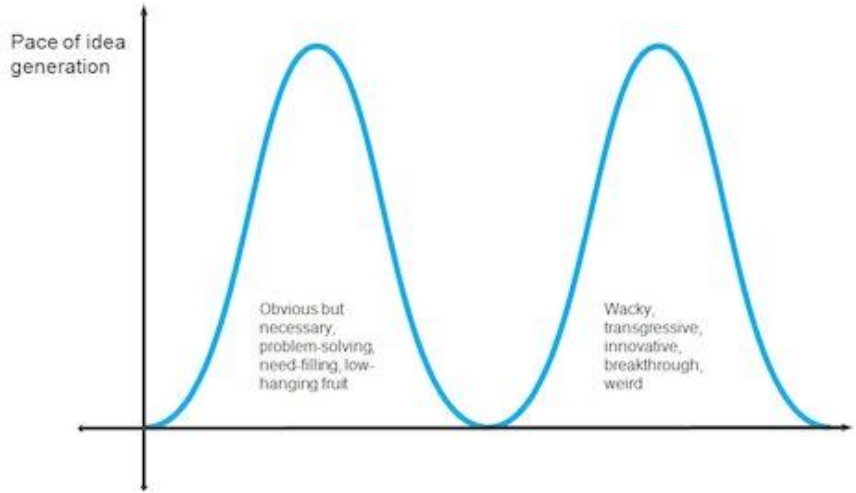
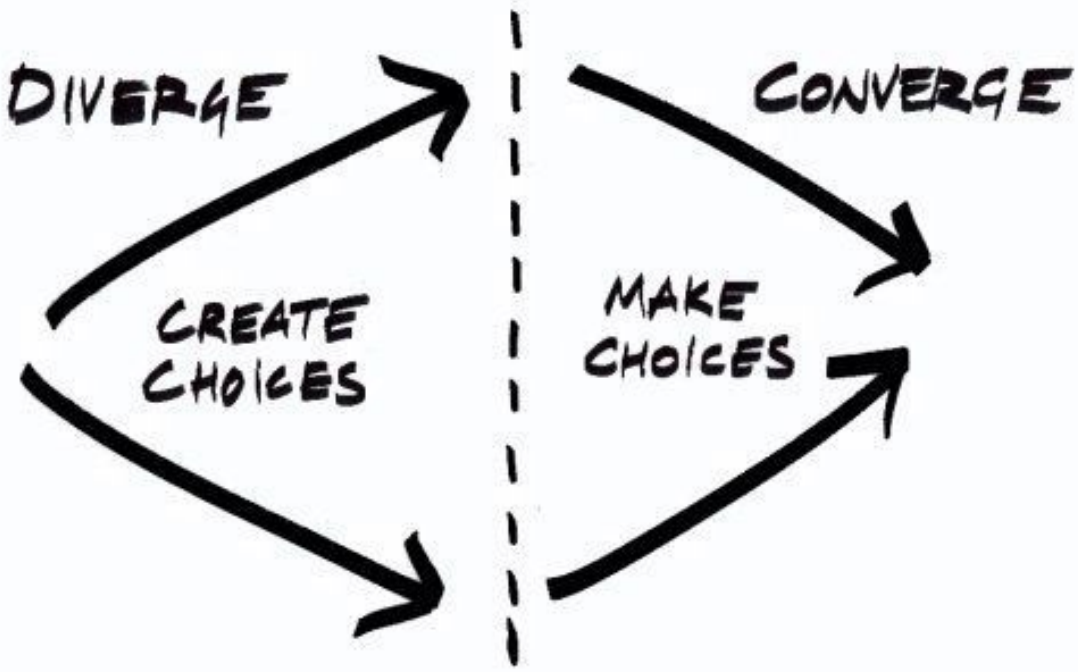


image source: https://www.yogajournal.com/lifestyle/what-is-freewriting/

3. Recap

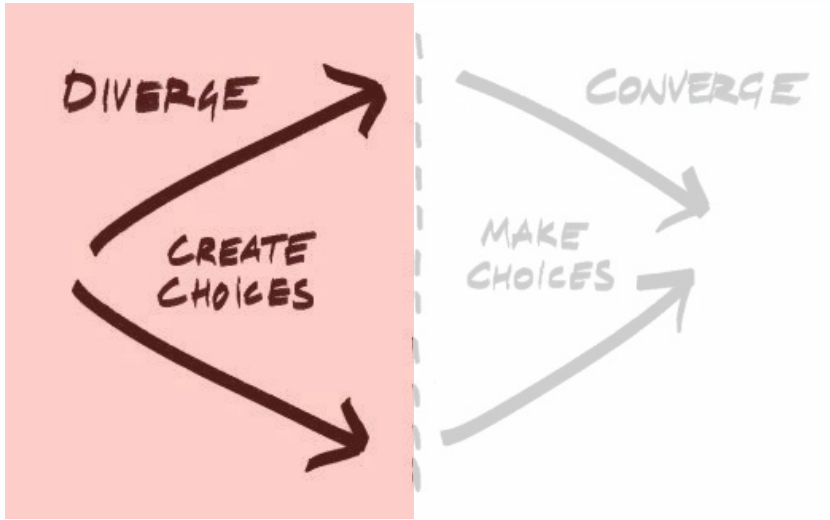
Divergeren

Creatieve proces

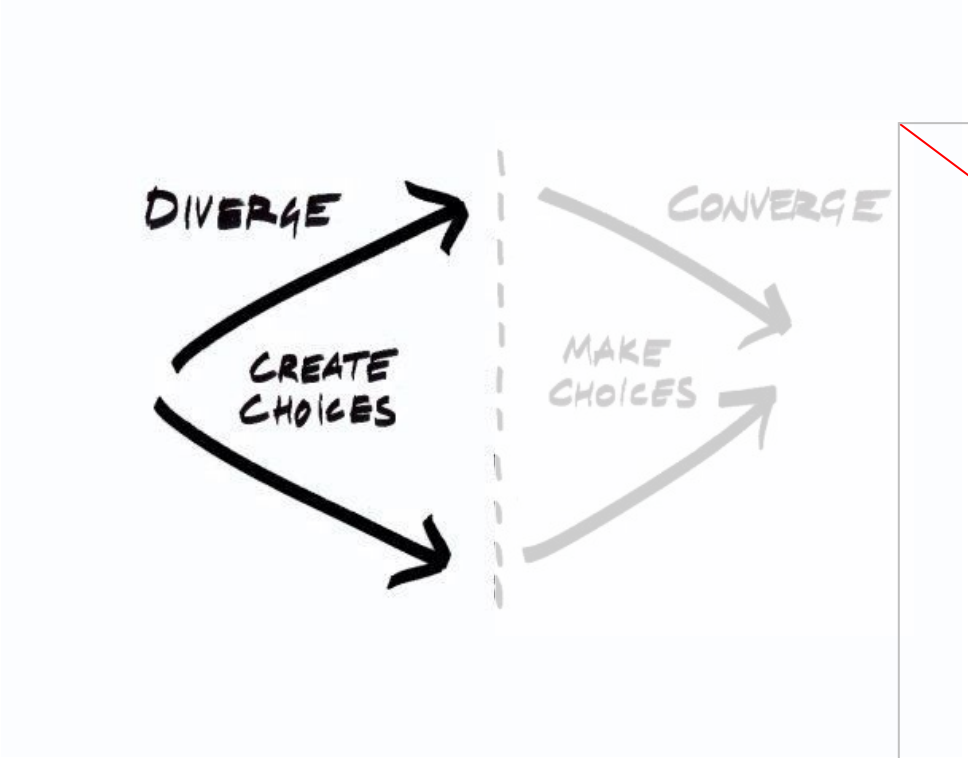

DIVERGE
CONVERGE
CREATE CHOICES
MAKE CHOICES

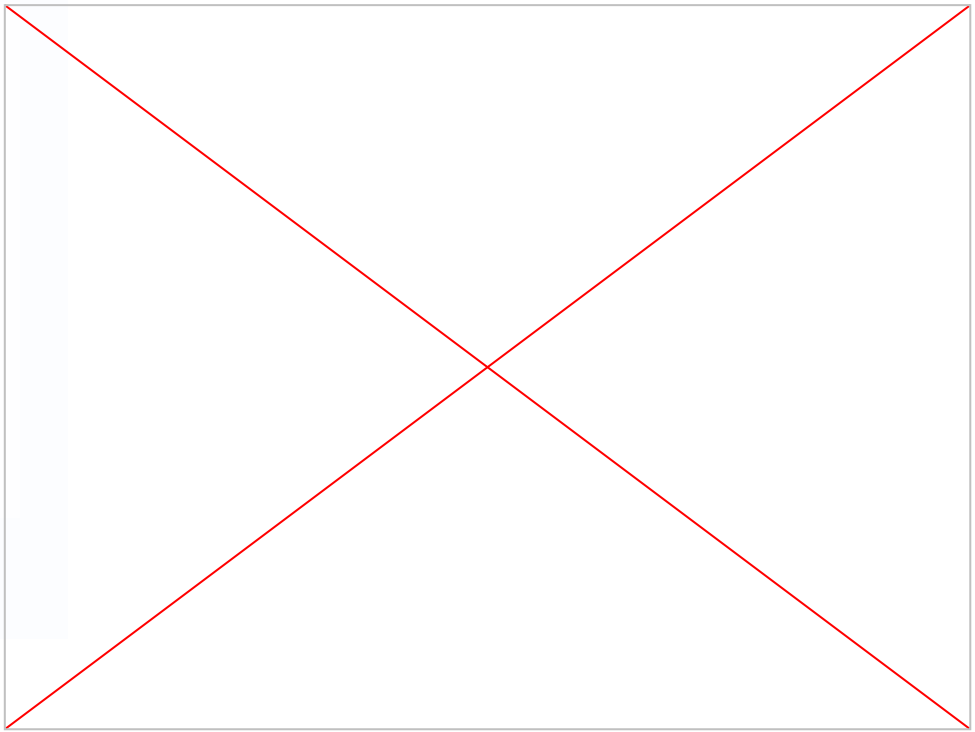
Ideation

Hoe kom je tot ideeën?

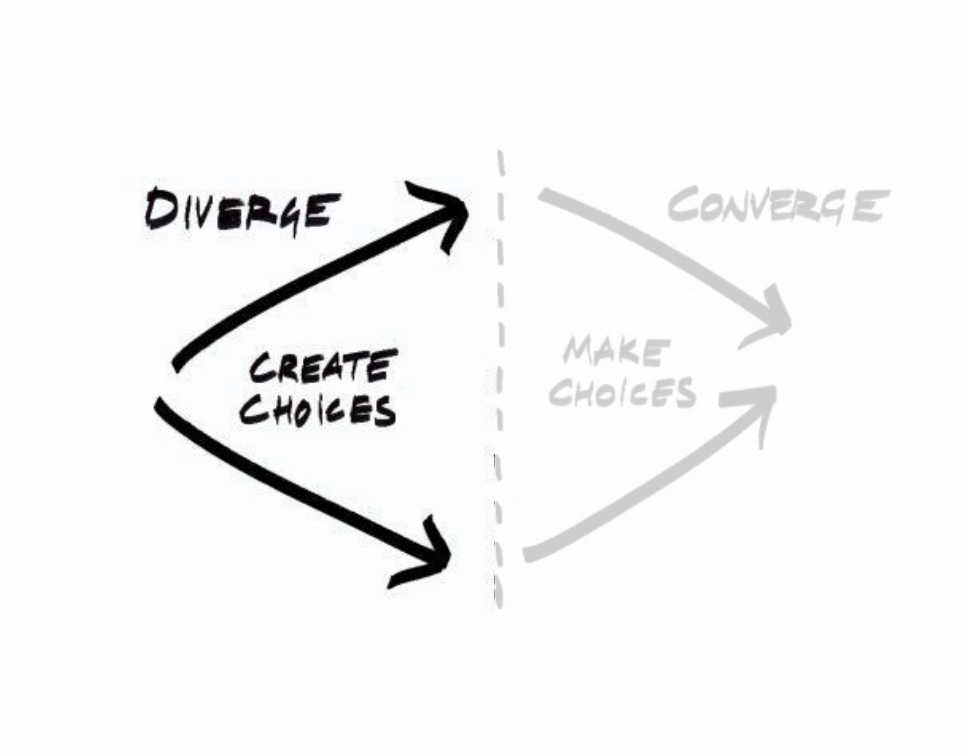


Mindset - Open modus



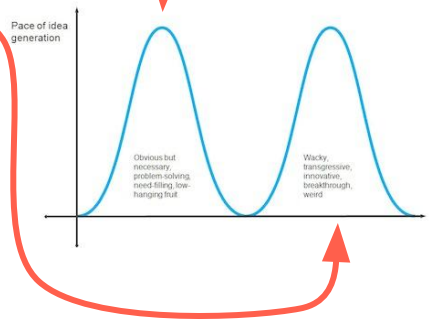


Mindset - Open modus



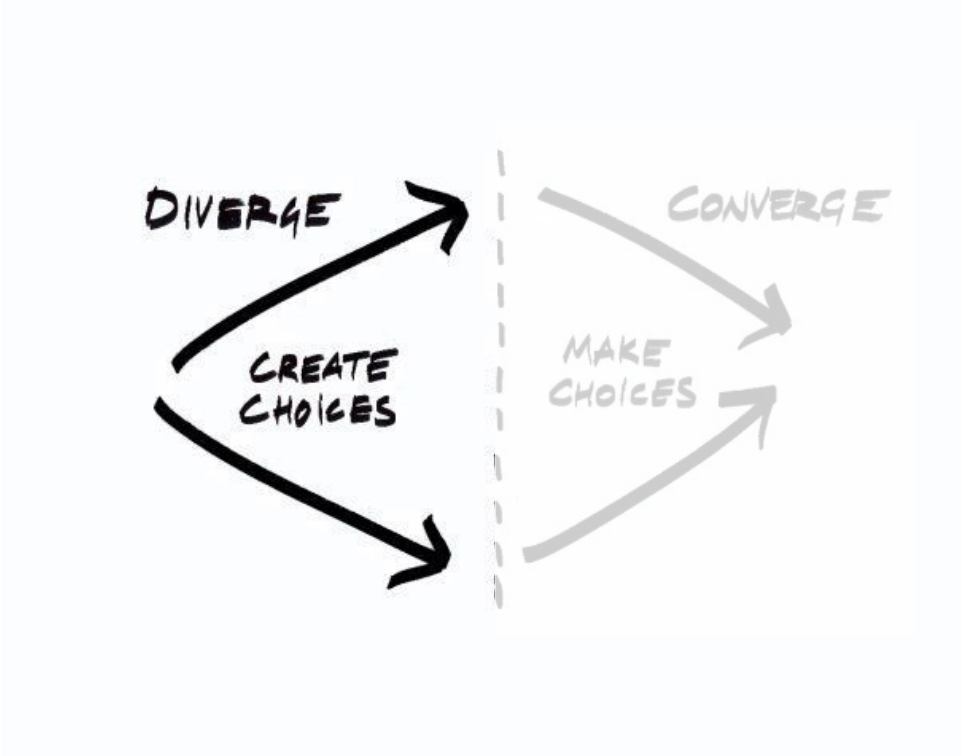
Divergeren in **open modus**

1. Space
2. Time
3. Time*
4. Confidence
5. Humour



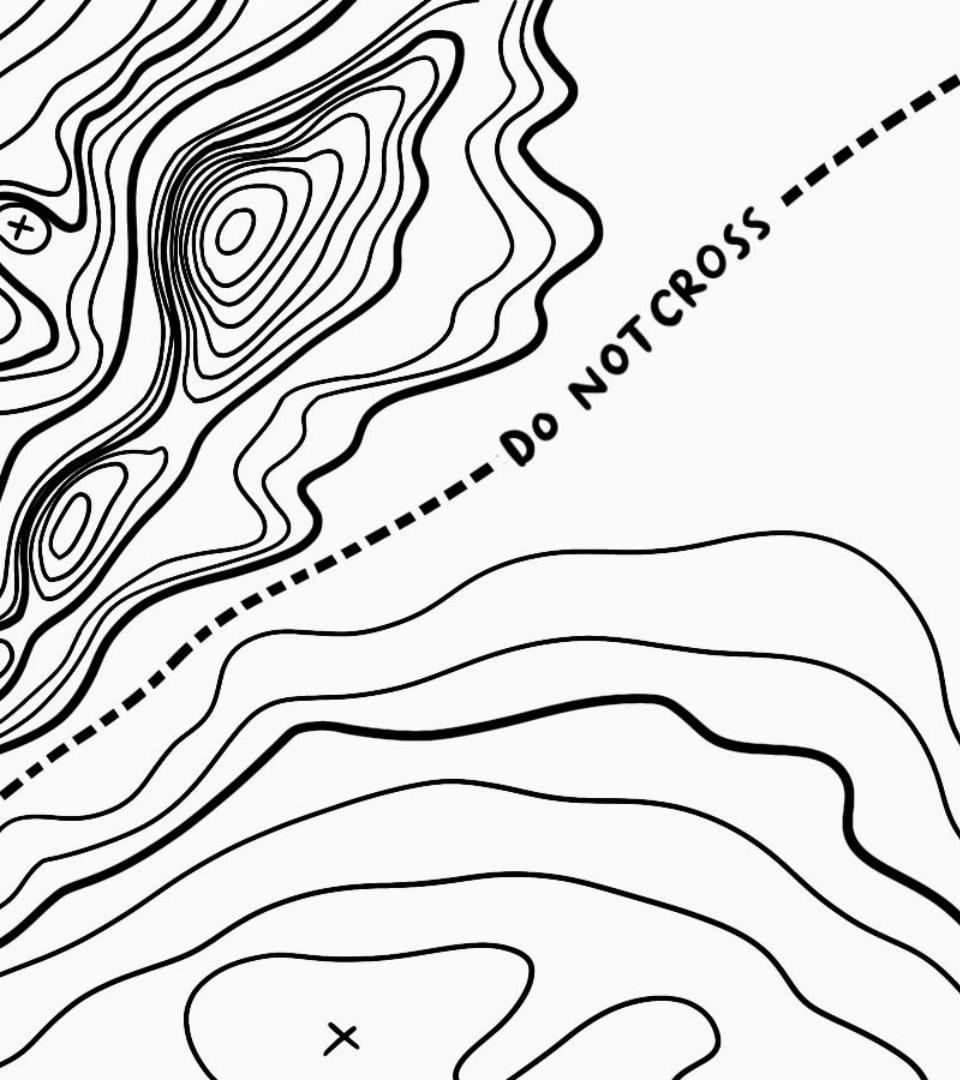
Bron: John Cleese on creativity “Open Mode and Closed Mode”

Ideation



Mindset - Open modus

Spelen, pielen, klooien, uittesten, experimenteren, bevragen, ***durven****, …*



Ideation

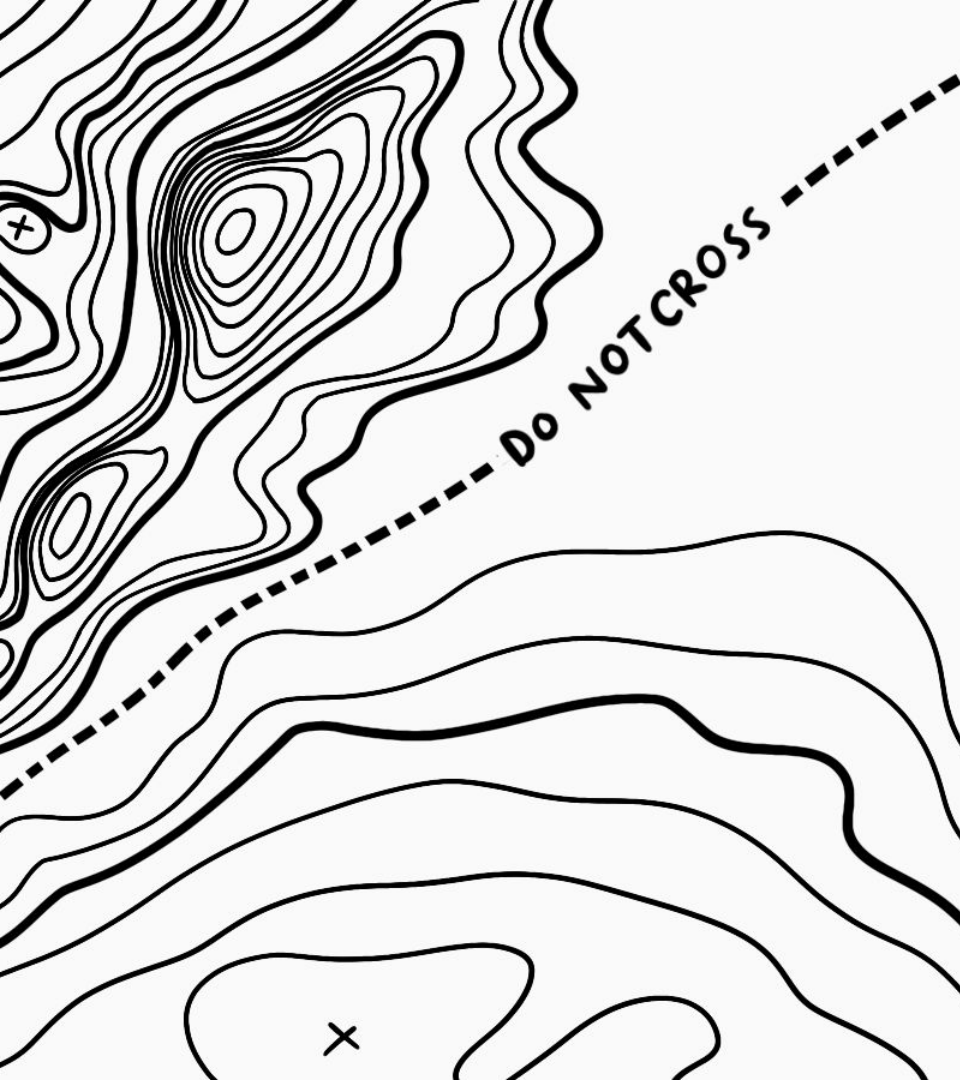
Mindset - Open modus

Spelen, pielen, klooien, uittesten, experimenteren, bevragen, durven, …

Kaders

Wat kan een kader zijn?

image source:
https://www.workovereasy.com/wp-content/uploads/2020/10/IMG_2645-1200x900.png



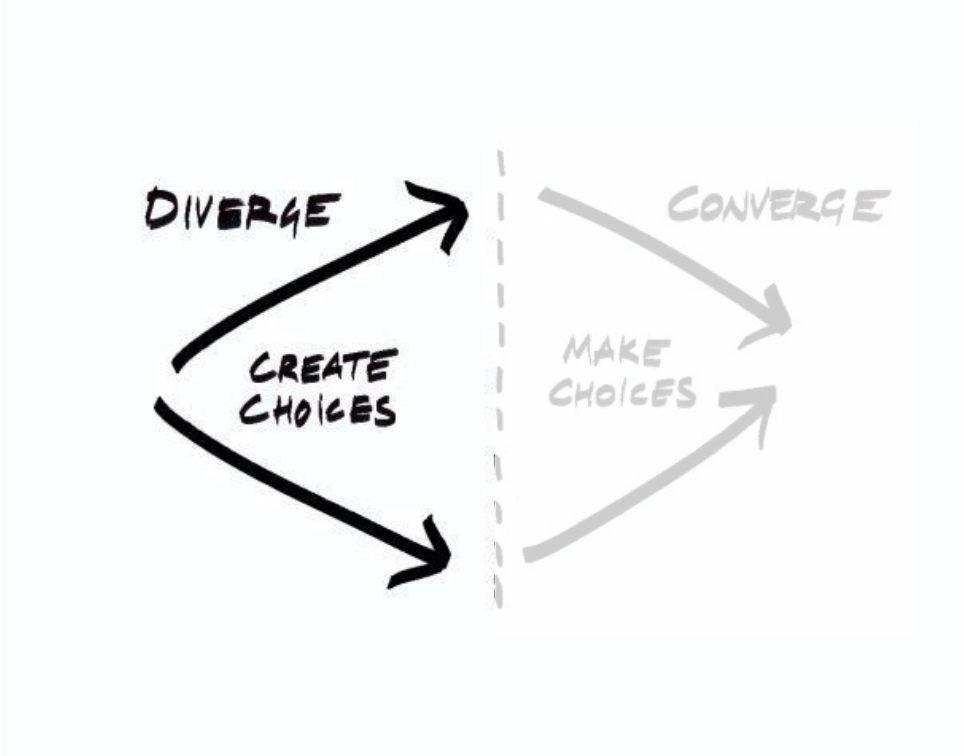
Ideation

Kaders op het gebied van:

- Zeggingskracht
- Disciplines
- Materiaalgebruik
- Interactie
- Doelgroep
- Afbakenen a.d.h.v. fascinaties, thema, …
- Zintuigen
- …

image source:
https://www.workovereasy.com/wp-content/uploads/2020/10/IMG_2645-1200x900.png

Ideation



Mindset - Open modus

Spelen, pielen, klooien, uittesten, experimenteren, bevragen, durven, …

Kaders

Zeggingskracht, disciplines, materiaalgebruik, interactie,. doelgroep, fascinaties, thema's, …

Ideation

Mindset - Open modus

Spelen, pielen, klooien, uittesten, experimenteren, bevragen, durven, …

Kaders

Zeggingskracht, disciplines, materiaalgebruik, interactie,. doelgroep, fascinaties, thema's, …

Ontwerpmethodes

Welke ontwerpmethodes?

Ontwerpmethoden

- zijn **manieren** om vanuit een ‘idee’ (gedachte, visie, uitdaging, probleem, fascinatie, etc.) tot een ‘eindproduct’ (compositie, applicatie, productie, installatie, etc.) te komen

- zijn **werkwoorden** zoals *brainstormen* en *schetsen* of hebben namen zoals de *Acting Out-methode* en *de Wizard-of-Oz-methode*

- leveren **artefacten** (‘maaksels’) op die je dichter bij je eindproduct brengen

Ontwerpmethodes

- Brainstorm
- Braindump
- Creative pausing
- Improviseren
- Wizard of Oz
- Schetsen
- Creative matrix method
- …

Zie bijvoorbeeld, https://www.designkit.org/methods.html, https://www.thisisservicedesigndoing.com/methods, https://toolkits.dss.cloud/design/, https://www.designmethodsfinder.com/methods/search/ideas, https://cmdmethods.nl/

DMF

ENTER SEARCH TERM OR TAG

70

OPEN FOR FILTER AND SEARCH TAG SUGGESTIONS

All Methods (70)

Share this

Affinity Diagram IAK

Sort, structure and organize data, information or individual elements according to relationships and contexts.

Alignment Diagram IAK

Visually combining the user side and the business side

Axis Mapping

Arrange terms or information by relation, similarity, and relationship to each other on an XY axis diagram.

Be Your Customer

The manufacturer or company representative actively puts himself in the position of his own customers in order to describe and uncover their actual needs from

Behavioral Mapping

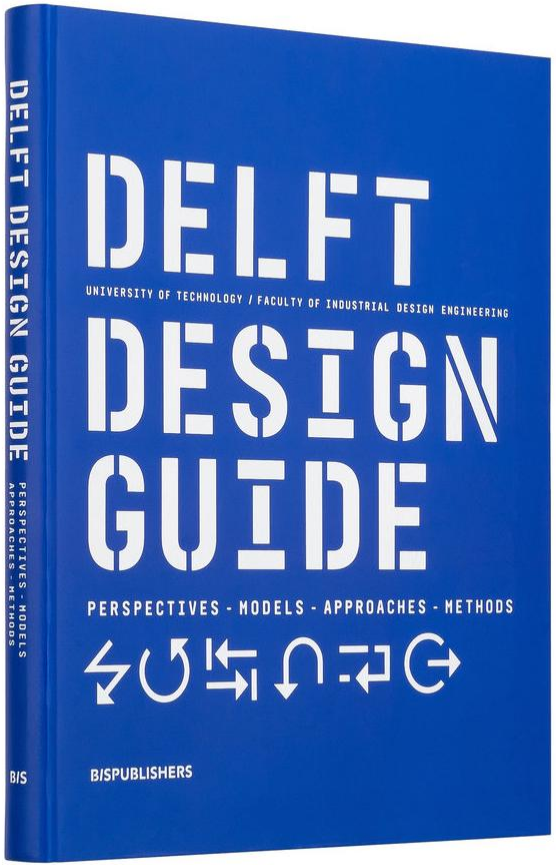
Visual documentation of the positions and routes of persons in a defined area, within a certain period of time.

Bet-Cost-Matrix blizz'able

Technique for evaluating the potential of ideas to generate value in relation to their cost


IDEO METHOD CARDS
IDEO METHOD CARDS
IDEO METHOD CARDS


Get Started
Check Around
Break It Down
Break Free
Evaluate & Select
± 180 min
± 3
INCOGNITO
SOMETIMES ASKING PEOPLE DIRECTLY ABOUT THE TOPIC
THEM FEEL UNCOMFORTABLE OR THEY WILL
ANSWER TO PLEASE YOU. THIS TOOL HELPS YOU
OW PEOPLE REALLY BEHAVE IN A PARTICULAR
xt of the situation (e.g. an airport lobby).
ng a list of issues you are interested in to
ation (e.g. the way people behave or the
in behaviour takes place).
role. This means you will be experiencing
teracting with the people around you, e.g.
bby or the general manager, just like an
/our own, but your team could also take
e time.
e same situation.
Category
A
UNPEELING THE ONION
Category
B
OGNITO
und
75 TOOLS FOR CREATIVE THINKING
"A fun card deck for everyone that needs creative inspiration"
75 TOOLS FOR CREATIVE THINKING
A fun card deck for everyone that needs creative inspiration.



Morphology is the study of the evolution of form. Morphology originates from the biological study of animals and their functional body parts. In the design process it is used to deconstruct an overall function in sub-functions and to generate innovative combinations.

SUB-FUNCTIONS							
SUPPORT KART	4 wheels A	4 wheels B	3 wheels A	3 wheels B	3 wheels C		
PUT KART INTO MOTION	Direct drive	Chain drive	Belt drive	Drive shaft	Crankshaft		
STOP KART	Disk brakes	Rim breaks	Tire breaks	Feet	Parachute	Anchor	
CONTROL DIRECTION	Central axis	Ackermann					
SUPPORT DRIVER'S BODY	Saddle	Chair	Plank	Cloth			

Example of of a morphological chart for a pedal kart. In the left column the main functions are listed. On the right for each function all possible solutions are listed. The most promising combinations are selected to be used as starting points for further development.

METHODS: DEVELOP AND DELIVER

Morphological Chart

The Morphological Chart helps designers generate solutions in an analytical and systematic way. It is based on the deconstruction of the overall function of a product or service into sub-functions.

WHAT & WHY? The Morphological Chart is a matrix of sub-functions and solutions – also referred to as parameters and components. While functions are abstract, solutions are concrete, but they do not need to have a definite shape or size yet. The matrix enables to describe possible principal solutions by combining solutions for each sub-function.

MINDSET: Similar to methods such as Problem Definition, this approach is rather analytic, in that the deconstruction requires you to have a systematic and analytical way of working. Solutions for sub-functions need idea generation, so you also need a creative and free minds for this process.

WHEN? The Morphological Chart is useful at the beginning of the idea generation phase after some ideas have been sketched. A Function Analysis is used as a starting point to break down the overall product function into sub-functions. In most cases, a number of solutions to these sub-functions are already known, while others still need to be generated.

HOW? Start with a well-defined main function of the product or service and its sub-functions. These describe all the product characteristics needed to fulfill its function. Express these by an active verb and a measurable noun. For example, a teapot: receives water; it contains tea, and allows for holding and pouring tea in a cup. In a Morphological Chart, functions and sub-functions are independent and have no reference to material features. Through a careful selection and combination of a set of solutions, a 'principal solution' is formed.

Step 1: Formulate the main function of the product or service.

Step 2: Identify all the functions and sub-functions that are needed in the solution.

Step 3: Construct a matrix with these sub-functions as rows. For example, in designing a pedal cart, its sub-functions could be: put cart into motion; stop cart; control the direction and support the driver's body.

Step 4: Fill the rows with solutions for a particular parameter. Solutions can be found by analysing similar products or by thinking up new principles for these sub-functions. Use evaluation strategies to limit the number of principal solutions.

Step 5: Create solutions by combining one solution per row for each sub-function.

Step 6: Carefully analyse and evaluate all solutions with regard to the design requirements, and choose at least three principal solutions.

Step 7: Sketch possible ideas for the whole product based on each solution.

Step 8: Elaborate on a selection of the ideas by turning them into design proposals with more detail. For services, use methods such as roadmapping and scenarios to further detail the best service ideas.

TIPS & CONCERNS

A 10 x 10 matrix yields 10.000.000.000 solutions! To limit the number of options, analyse the rows critically and group the solutions together before making the combinations.

Use the design requirements to rank the solutions per sub-function in order of first and second preference.

Group the sub-functions in groups of decreasing importance. At first only evaluate the most important ones.

Choose one or more combinations of solutions for evaluation.

Draw all the solutions or components when you develop an idea or design proposal.

Challenge yourself by making counterintuitive combinations of solutions.

LIMITATIONS

This method is initially developed for design problems in the field of engineering design, but can also be applied to other design problems.

For service design, you need to have a very clear goal and a main function. Otherwise use less systematic methods.

REFERENCES & FURTHER READING: Heijne, K.G. & van der Meer, J.D., 2019. *Road map for creative problem solving techniques. Organizing and facilitating group sessions.*Amsterdam: Boom / Reazenburg, N.F.M. & Eekels, J., 1995. *Product Design: Fundamentals and Methods.* Utrecht: Lemma. / Cross, N., 1989. *Engineering Design Methods.* Chichester: Wiley. / Steen, M. Manschot, M. & Koning, N. (2011) Benefits of co-design in service design projects, *International Journal of Design*, Vol. 5(2) August 2011

Innovating for People METHODS OF HUMAN-CENTERED DESIGN

Looking
Methods for Observing Human Experience

ETHNOGRAPHIC RESEARCH: Studying human behavior in its natural setting

Interviewing
A technique for gathering information through direct dialogue

Fly-on-the-Wall Observation
An approach to conducting field research in an unobtrusive manner

Contextual Inquiry
An approach to interviewing and observing people in their own environment

Walk-a-Mile Immersion
A way of building empathy for people through firsthand experience

PARTICIPATORY RESEARCH: Learning from people through cooperative design activities

What's on Your Radar?
An exercise in which people plot items according to personal significance

Buy a Feature
A game in which people use artificial money to express trade-off decisions

Build your Own
An activity in which people express ideal solutions using symbolic elements

Journaling
An activity that invites people to record personal experiences in words and pictures

EVALUATIVE RESEARCH: Examining the usefulness and usability of solutions

Think-Aloud Testing
A testing format where people narrate their experience while performing a given task

Heuristic Review
An auditing procedure based on ten rules of thumb for good design

Critique
A forum for people to give and receive constructive feedback

System Usability Scale
A short survey for quantifying feedback from subjective assessments of usability

Understanding
Methods for Analyzing Challenges & Opportunities

PEOPLE & SYSTEMS: Synthesizing and summarizing knowledge

Stakeholder Mapping
A way of diagramming the network of people who have a stake in a given system

Persona Profile
An informed summary of the mindset, needs, and goals typically held by key stakeholders

Experience Diagramming
A way of mapping a person's journey through a set of circumstances or tasks

Concept Mapping
A way of depicting the relationships between various concepts in a given topic area

PATTERNS & PRIORITIES: Identifying relationships and determining significance

Affinity Clustering
A graphic technique for sorting items according to similarity

Bull's-eye Diagramming
A way of ranking items in order of importance using a target diagram

Importance/ Difficulty Matrix
A quad chart for plotting items by relative importance and difficulty

Visualize the Vote
A quick poll of collaborators to reveal preferences and opinions

PROBLEM FRAMING: Characterizing the situation to address

Problem Tree Analysis
A way of exploring the causes and effects of a particular issue

Statement Starters
An approach to phrasing problem statements that invites broad exploration

Abstraction Laddering
A way of reconsidering a problem statement by broadening or narrowing its focus

Rose, Thorn, Bud
A technique for identifying things as positive, negative, or having potential

Making
Methods for Envisioning Future Possibilities

CONCEPT IDEATION: Exploring extensive possibilities

Thumbnail Sketching
A series of small drawings used to quickly explore a variety of ideas

Creative Matrix
A format for sparking new ideas at the intersections of distinct categories

Round Robin
An activity in which ideas evolve as they are passed from person to person

Alternative Worlds
A way of using different perspectives to help generate fresh ideas

MODELING & PROTOTYPING: Envisioning solutions in the service of people

Storyboarding
A series of images showing the key elements and interactions of a new scenario

Schematic Diagramming
An outline of the structure and essential components of a system

Rough & Ready Prototyping
A rapidly built model of a new idea that approximates its appearance and behavior

Appearance Modeling
A refined model of a new idea that emphasizes the visual styling

DESIGN RATIONALE: Promoting new and improved solutions

Concept Poster
A presentation format illustrating the main points of a new idea

Video Scenario
A short movie showing the attributes of a new concept in use

Cover Story Mock-up
A mock news article describing the successful future of a new idea

Quick Reference Guide
A short document summarizing the key principles and elements of a proposed solution

CMD Methods Pack

This pack supports your design research planning in any CMD project. Browse through the cards to find methods that suit your needs. Pick a combination of methods belonging to different research strategies to balance your research plan. You can use this card set in many ways. It is really up to you!

Sort alphabetical

Shuffle cards

Biometrics

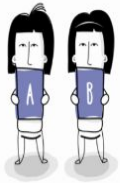
Why?

To get objective data about users' attention and physical state.

Save to favorites | More info

Comparison Chart

A/B Testing



Why?

A minor change in a design may alter user behaviour in ways that are hard to detect in a usability test. An A/B test allows you to compare real-world user behaviour across different versions of the product.

Save to favorites | More info

Bag tour

Why?

As a low threshold introduction to the user, which still gives valuable insights, the bag tour asks users to report about themselves based on the content of their bag.

Save to favorites | More info

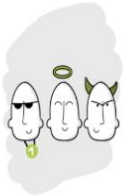
Benchmark creation

Why?

Existing products in your niche can be a valuable reference and source of inspiration.

Save to favorites | More info

Best, good & bad practices



Why?

Why invent the wheel again? Incorporating what others have learned is an important practice.

Save to favorites | More info

Business Model Canvas

Why?

Dream up in a structured and visual way, how a new company can reach its customers and make revenues in order to understand, discuss, create and analyse a business idea.

Save to favorites | More info

Card sorting

Why?

Find out what information organisation structures are considered intuitive by users.

Save to favorites | More info

Co-creation

Why?

Gain inspiration from your users by involving them in the design process. It may lead to unexpected and sensible project outcomes.

Save to favorites | More info

Co-reflection

Why?

Involve stakeholders and other experts early in the design process in order to set an innovative direction and to create openness for novel ideas among stakeholders.

Save to favorites | More info

Makersmanieren

Wroeten naar wat mensen nou écht willen, ook als ze dat zelf niet eens weten

Makersmanieren, Ontwerpen 16 maart 2024

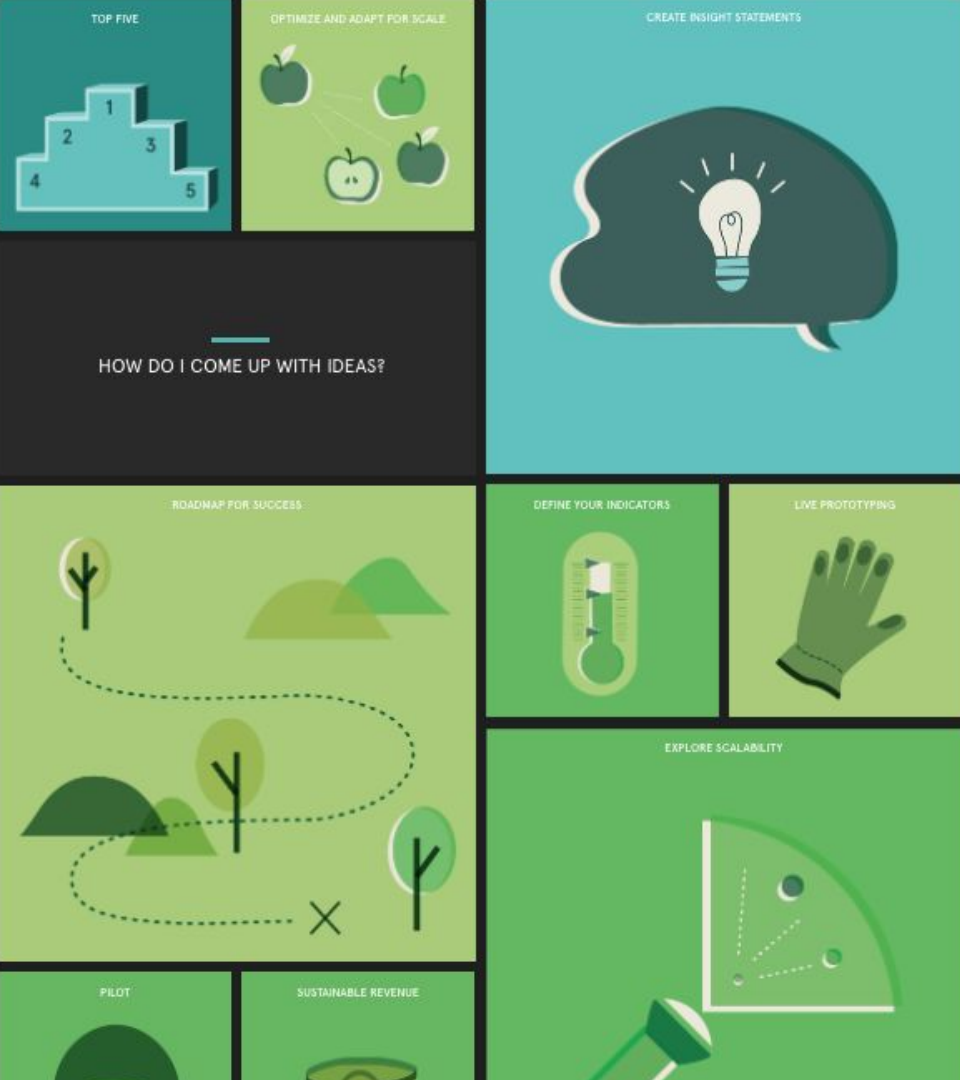
Dorien leeft zich als interieurarchitect voor particulieren in in haar opdrachtgevers. Als ontwerper voelt ze zich bijna een soort therapeut. Ze is dienstbaar aan de werkelijke behoefte van haar opdrachtgevers, maar niet aan de opdracht zoals die binnenkomt. Soms begrijpt... Lees verder ›

Heen en weer bewegen tussen chaos en vrijheid, categoriseren en kadreren

Makersmanieren, Media 13 maart 2024

Antoin komt tot de kern van een maakopdracht door afwisselend informatie te verzamelen en die berg te beknotten door categorieën, prioriteiten en andere (rand)kaders toe te voegen. Het eindproduct moet zo kernachtig mogelijk worden, maar het gevaar van teveel 'uitkleden'... Lees verder ›

HKU



Ontwerpmethodes

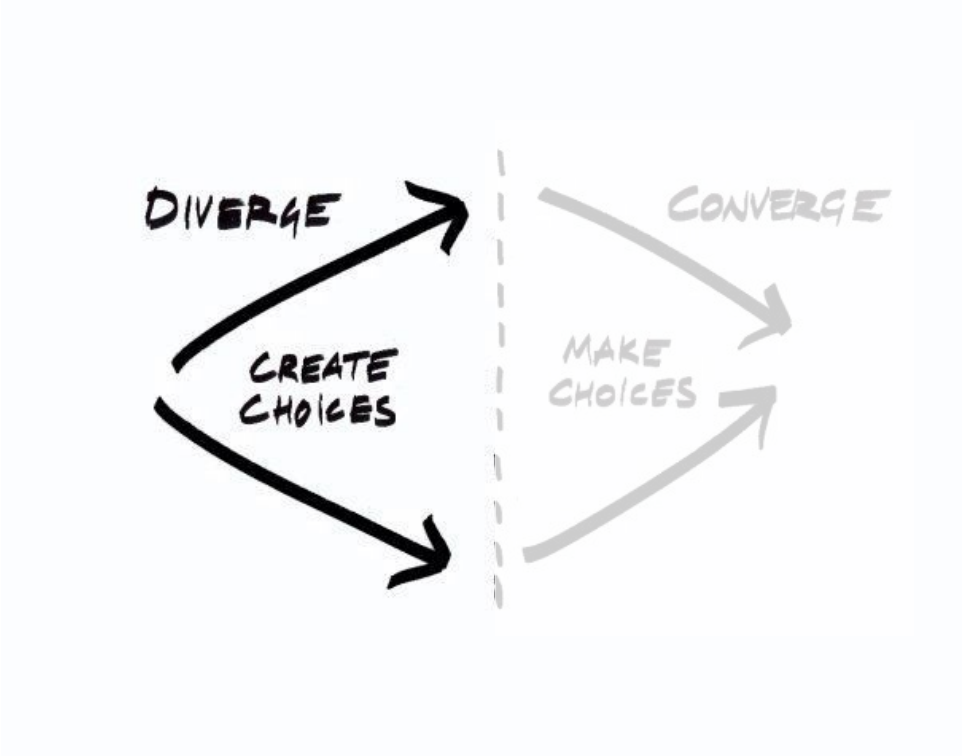
Bekijk eens

https://www.designkit.org/methods.html
https://www.designmethodsfinder.com/
https://toolkits.dss.cloud/design/
https://hbr.org/2014/01/a-taxonomy-of-innovation
https://cmdmethods.nl/
https://makersmanierenblogs.hku.nl/category/makersmanieren-kop/

Let op:

- Is het een proces of methode?
- Wanneer in het proces is de methode zinvol?
  - Vooronderzoek
  - Ideation
  - …
- Hoe veel tijd / energie kost de methode?

Ideation



Mindset - Open modus

Spelen, pielen, klooien, uittesten, experimenteren, bevragen, durven, …

Kaders

Zeggingskracht, disciplines, materiaalgebruik, interactie,. doelgroep, fascinaties, thema's, …

Ontwerpmethodes

Brainstorm, creative pausing, wizard of Oz, schetsen, creative matrix method, …

Ideation

Mindset - Open modus

Spelen, pielen, klooien, uittesten, experimenteren, bevragen, durven, …

Kaders

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Ontwerpmethodes

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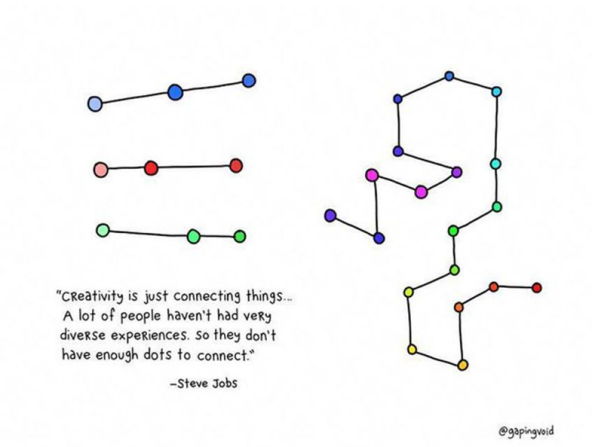
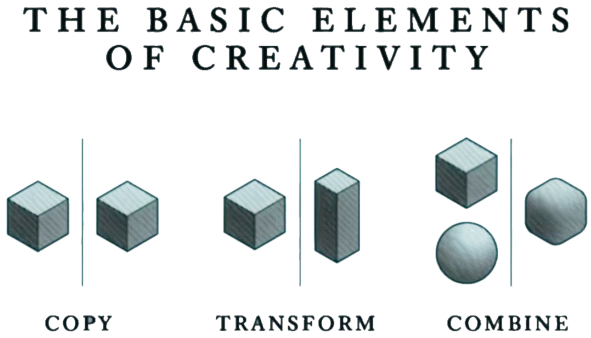
Materiaalonderzoek

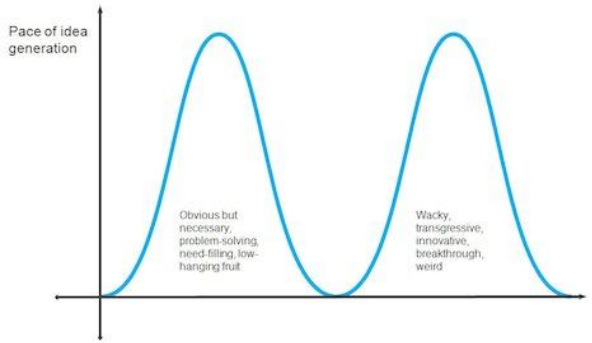
Wat houdt materiaalonderzoek in?

→ ***PAUZE***

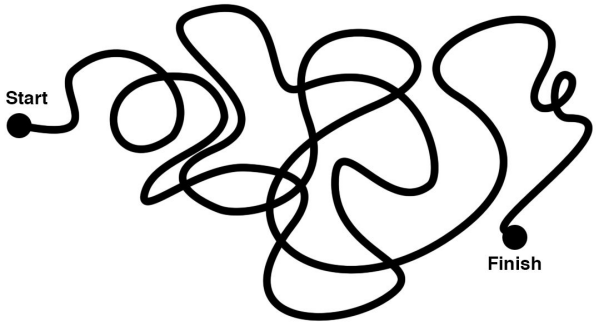
image source: https://formdesigncenter.com/en/exhibition/material-driven-design-0

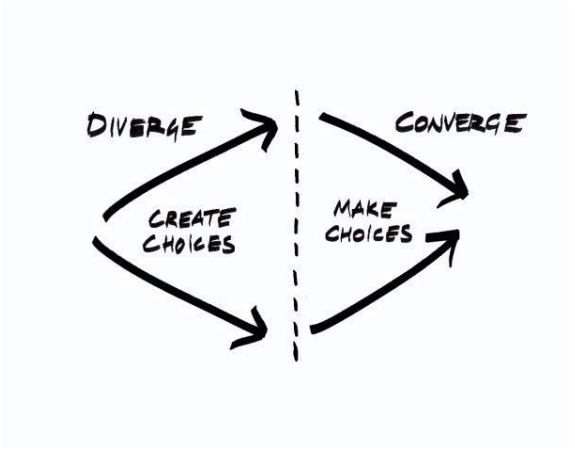


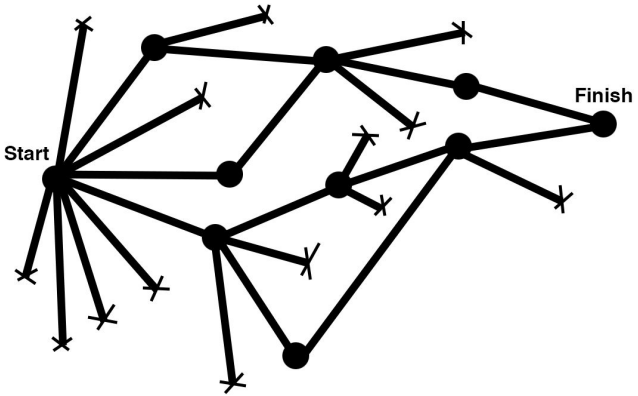




Creatieve proces



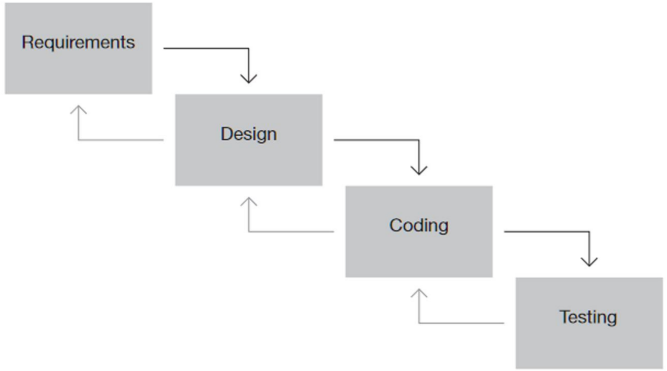




Ontwerpproces

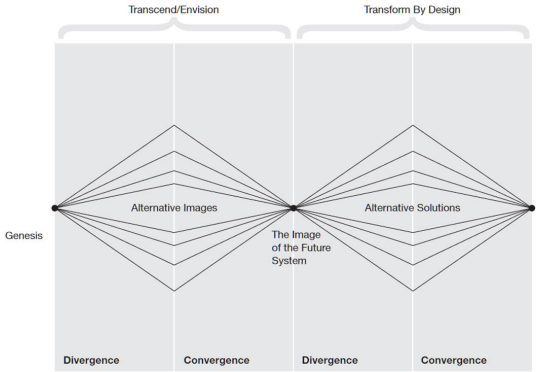
Divergeren < > convergeren

Waterfall lifecycle
after Philippe Kruchten (2004)



Dynamics of divergence and convergence
after Bela H. Banathy (1996)

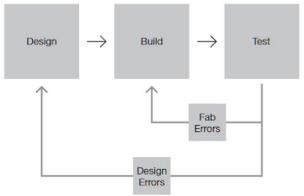
Banathy's model illustrates the iterative nature of the design process, repeating the process of divergence and convergence, analysis and sysnthesis.

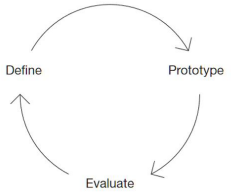


Design, build, test
after Alice Agogino (1 of 3)

This model is the first in a series of three developed by Alice Agogino for NASA's Jet Propulsion Laboratory (JPL) at California Institute of Technology. Agogino is a professor of mechanical engineering at UC Berkeley.

In the first step, Agogino presents a variation on the classic goal-action feedback loop. (See page 117.) Of course, design-build-test is also analogous to define-prototype-evaluate. (See facing page.)





Standaard ontwerpprocessen

4. Concept

Concept

Ontwerpkeuzes

CONCEPT

“Het concept van een werk gaat over de **intentie** van de maker, waarbij de **betekenis** van het werk expliciete aandacht krijgt.

Artistieke vertalingen van concept naar uitwerking dragen bij aan de **zeggingskracht** en/of sturen de maker in diens **besluitvorming**. Deze vertalingen zijn te onderscheiden in **semantische, esthetische** en **technische ontwerpkeuzes**.”

image source: https://numen.eu/installations/net/hasselt/

CONCEPT

Concept: intentie & betekenis
Uitwerking concept = artefact:

Vertalingen van concept naar uitwerking (artefact):

- Dragen bij aan zeggingskracht
- Sturen in besluitvorming
- Ontwerpkeuzes:
  - Semantische
  - Esthetische
  - Technische

image source: https://numen.eu/installations/net/hasselt/

CONCEPT

Net Hasselt

House for Contemporary Art Z33 / 02.07. 02-10-2011 Hasselt, Belgium

“Net consists of multiple layers of flexible nets suspended in the air. The flat layers of the net are subsequently connected to one another on counterpoints thus forming a “floating landscape" open for visitors to climb in and explore. The result is an **op-art social sculpture** (or a community hammock) **relating to topics of instability, levitation and regression.** ”

image source: https://numen.eu/installations/net/hasselt/

CONCEPT

Begin fase

Wat ‘nu al’ valt in concept vangen?

- Intentie & betekenis
- Grove kaders

Wat nog niet?

- Specifieke keuzes op het gebied van de uitwerking - *“esthetische, semantische en technische ontwerpkeuzes.”*

image source: https://www.itsliquid.com/installations-carsten-holler.html

5. Aan de slag

Ideation ontwerpmethodes

Ingrediënten verzamelen

Individueel, 20 minuten

Stap 1. Noteer zo veel mogelijk (10 min.)

- MT aspecten / elementen waar je *‘van aan gaat’*
- Fascinaties
- Dingen die je nog wilt leren

image source: https://www.treehugger.com/mighty-benefits-of-writing-by-hand-7507457

Ingrediënten verzamelen

Individueel, 20 minuten

Stap 1. Noteer zo veel mogelijk (10 min.)

- MT aspecten / elementen waar je *‘van aan gaat’*
- Fascinaties
- Dingen die je nog wilt leren

Stap 2. Maak selectie top 5 per categorie (5 min.)

image source: https://www.treehugger.com/mighty-benefits-of-writing-by-hand-7507457

Ingrediënten verzamelen

Individueel, 20 minuten

Stap 1. Noteer zo veel mogelijk (10 min.)

- MT aspecten / elementen waar je *‘van aan gaat’*
- Fascinaties
- Dingen die je nog wilt leren

Stap 2. Maak selectie top 5 per categorie (5 min.)

Stap 3. Noteer op kaartjes - 3 x 5 (5 min.)

image source: https://www.treehugger.com/mighty-benefits-of-writing-by-hand-7507457

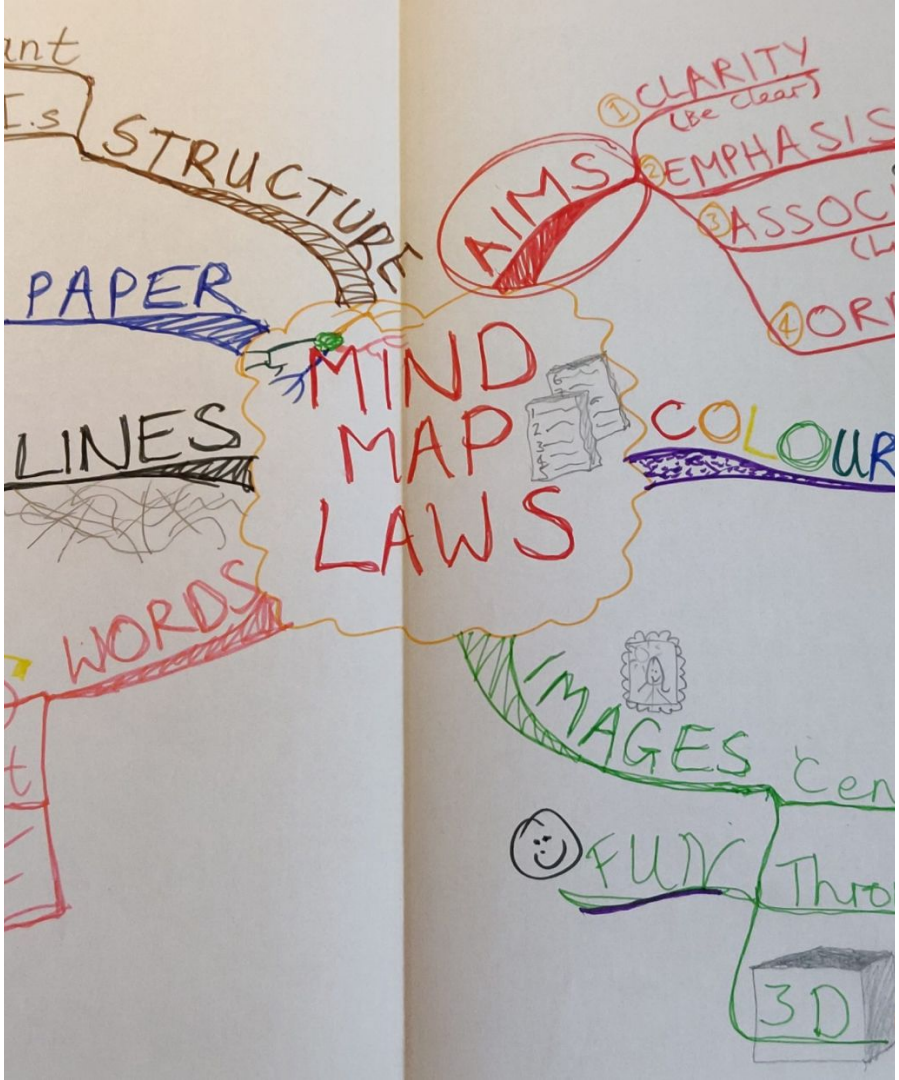
Ideation - Ronde 1

Individueel, 12 minuten

8 x 1.5 ideeën bedenken

1. Trek per categorie een kaartje
2. Bedenk een idee
3. Noteer werktitel en kernzin

image source:
https://www.creativefabrica.com/prod/versatile-stack-of-white-cards-mockups-FuWPsxnPJ/



Ideation - Ronde 2

In duo's, 30 min. - per persoon 15 min.

2 x
Maak een mindmap voor één van jullie (*maker*) waarbij je de kernwoorden van diens kaartjes gebruikt, noteert en met ideeën aan elkaar verbindt.

De *maker* kiest stuk voor stuk een **kernwoord** van kaartjes en noteert deze in de *map*.

Samen bedenken jullie vanuit 'het gesprek' **ideeën** die twee of meerdere kernwoorden verbindt. (De *ander* bevraagt de *maker*.)

image source:
https://www.creativefabrica.com/prod/versatile-stack-of-white-cards-mockups-FuWPsxnPJ/

Ideation - Ronde 3

Individueel, 15 minuten

Maak een creativity matrix

- 2D grid met 2 categorieën
  - MT aspecten / dingen
  - Fascinaties

Bedenk ideeën voor elke cel.