

Design Thinking Process

Onsite



An initiative of:



**FALLING
WALLS
FOUNDATION**

With funding from the:



THIS PROGRAMME IS SUPPORTED BY:



WELCOME



Young Entrepreneurs in Science



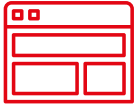
- opens up new career perspectives for young researchers
- part of the Falling Walls Foundation
- enabled by Federal Ministry of Education and Research



Your learning materials



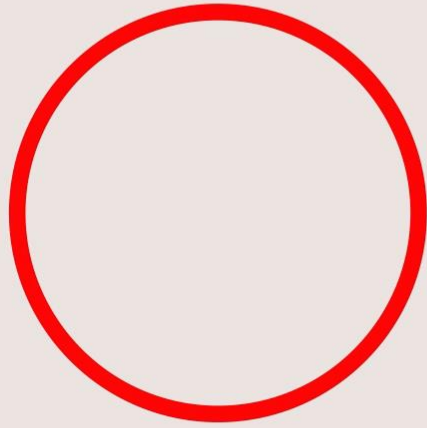
- **Download link:** You will receive a download link for the handout and your certificate within 3–5 days after the workshop



- **Template:** Blank templates will be included



- **Photos:** If you want to document your results, please take photos after getting consent from you team



YOUNG ENTREPRENEURS IN SCIENCE

A Project of the Falling Walls Foundation

Workshop setting



YES



Coaches



Partner

Today's agenda



Morning

- Check-in & Coffee Break
- Understand & Observe: User Research
- Define: How-Might-We questions

Afternoon

- Ideation & Brainstorming
- Prototyping & Testing
- Presentations
- Check-out & Evaluation

WHO IS HERE?



DESIGN THINKING

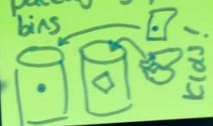
How might we show
... of
... food
... less time consuming

Bio-degradable
take
out
packaging

INFO APP
-APPWAY
-PRODUCT 1
-POSTAL USE
-PACKAGE
-RAC
-USE

How might we
make trash organization
in the house
easier & more fun?

color-coding
system on
packaging
bins



How might we
make trash organization
recycling
look nicely & be
hygienic?

bio-waste

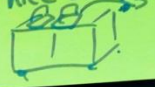


Bins
with
Motivation
quote

WASTE
LIFT



bin system
that is
movable, has
a nice design

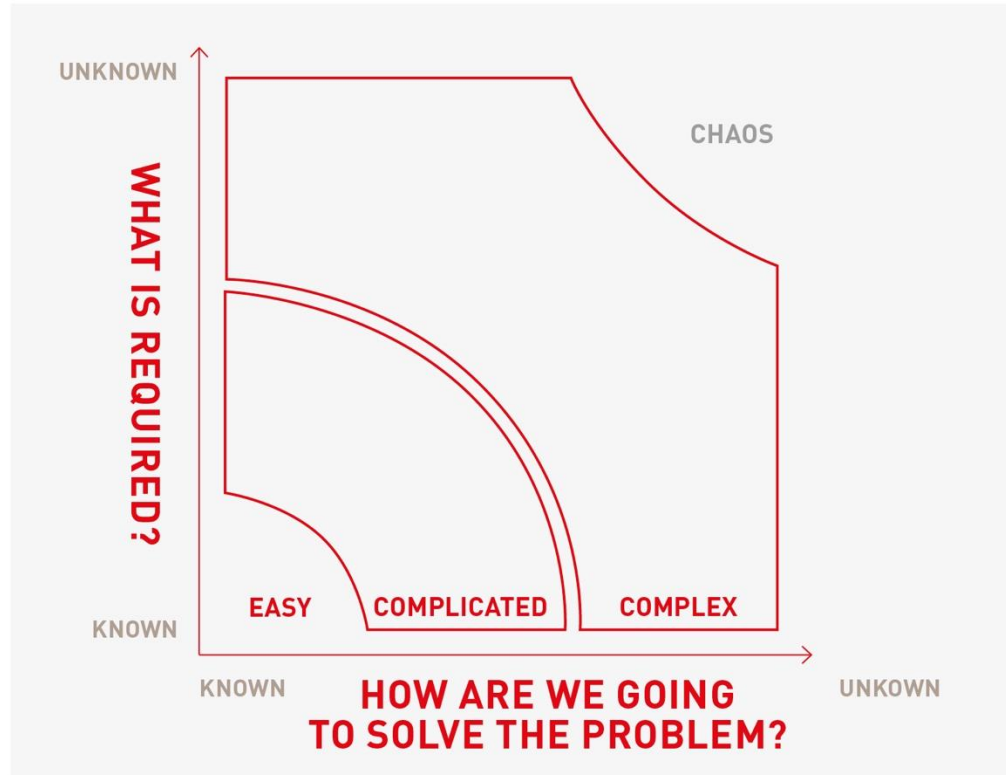


Learning Goals

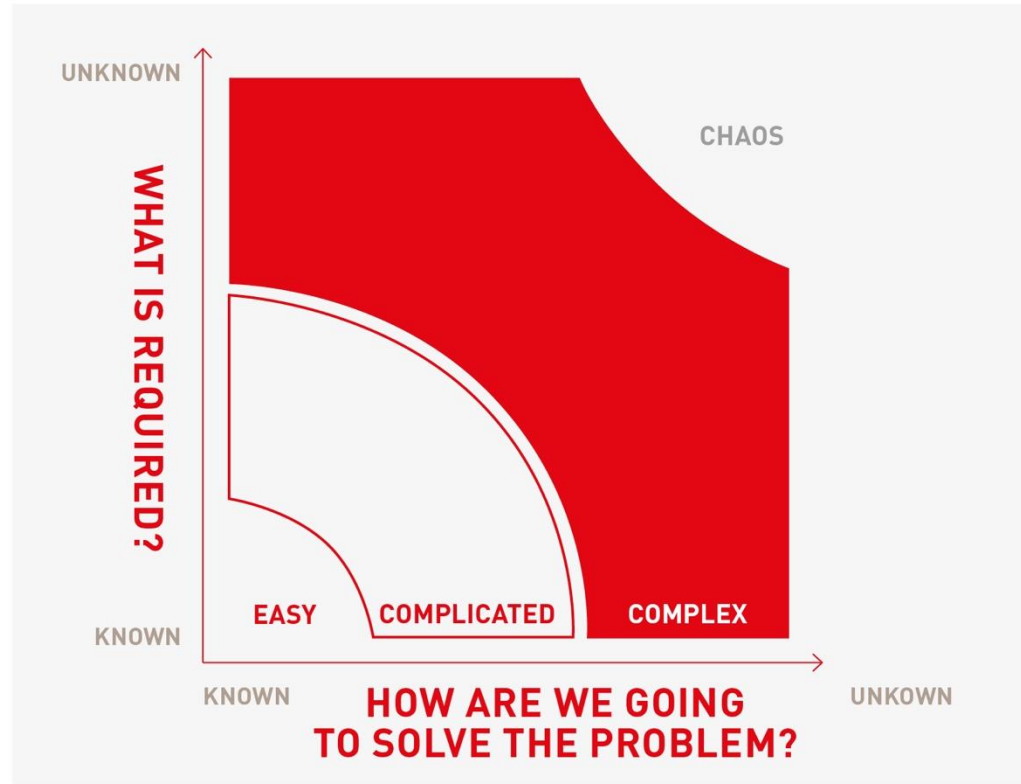


- Introduction to the Design Thinking approach
- Interdisciplinary and agile teamwork
- Changing perspectives & build empathy

Work in Iterations



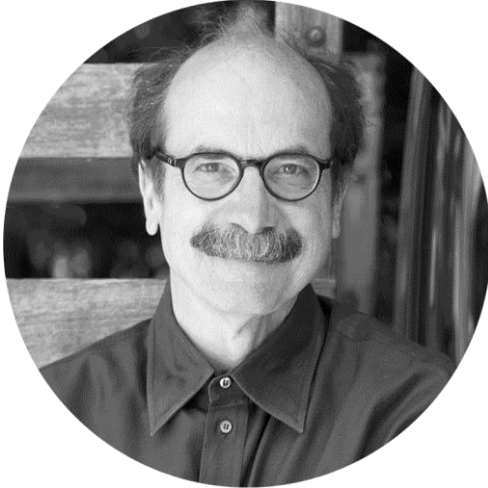
Work in Iterations



What is Design Thinking?

- Design Thinking ≠ Design
- Is a holistic innovation approach
- Is a work mode & mindset
- Puts the human and their needs in center
- Is based on three components: process, team, space
- Works as a catalyst for innovation culture

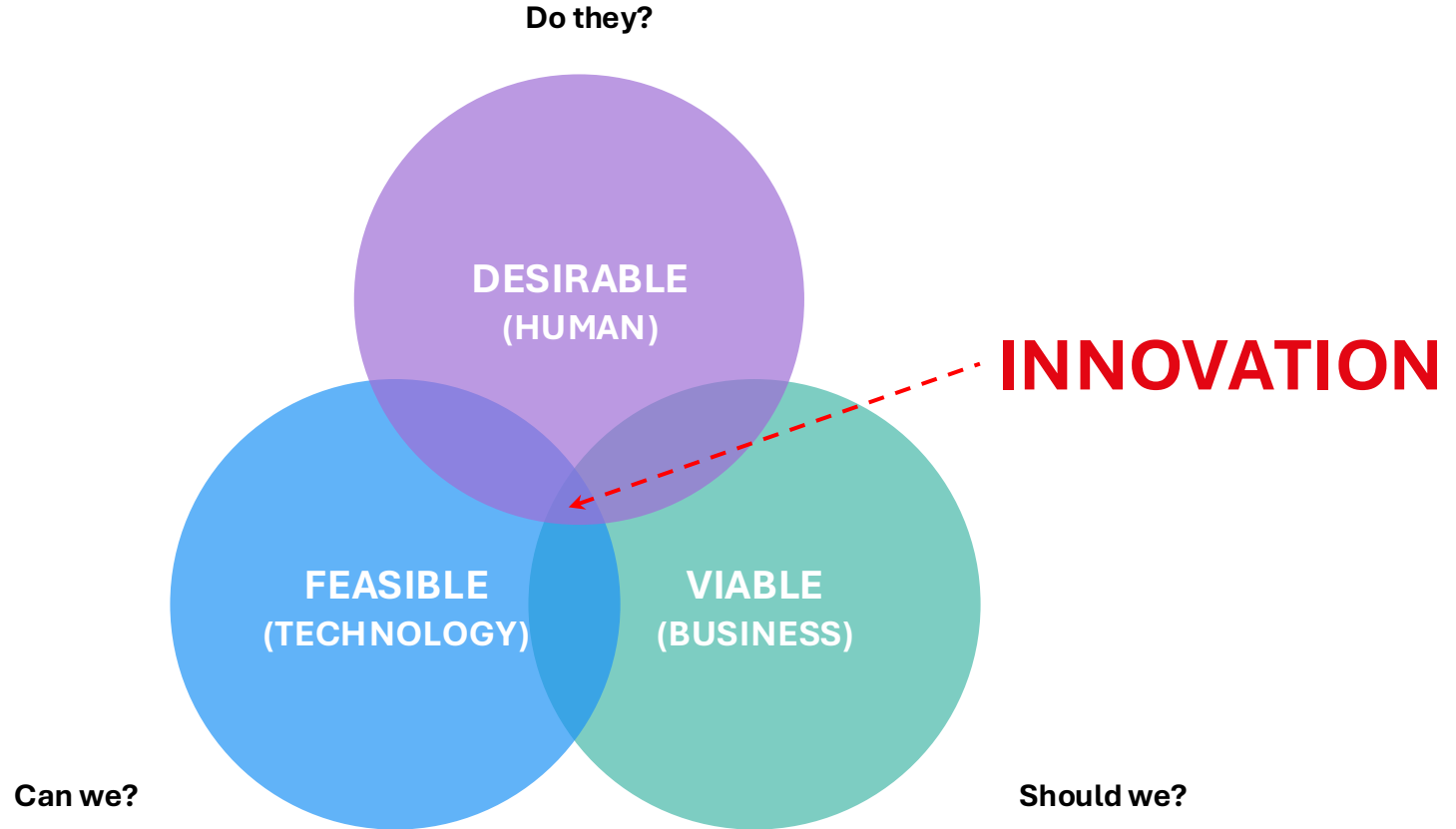
Design Thinking pioneer



DAVID KELLY

- Pioneer and name giver of the innovation approach Design Thinking
- Engineer, 2nd degree in product design
- Founder of the design studio IDEO
- Lecturer at Stanford University

Innovation



**Design Thinking
needs space ...**



Design Thinking guidelines

1. Timeboxing



Design Thinking guidelines

2. Build on the ideas of others



Design Thinking guidelines

3. Defer judgement



Design Thinking guidelines

4. Listen actively



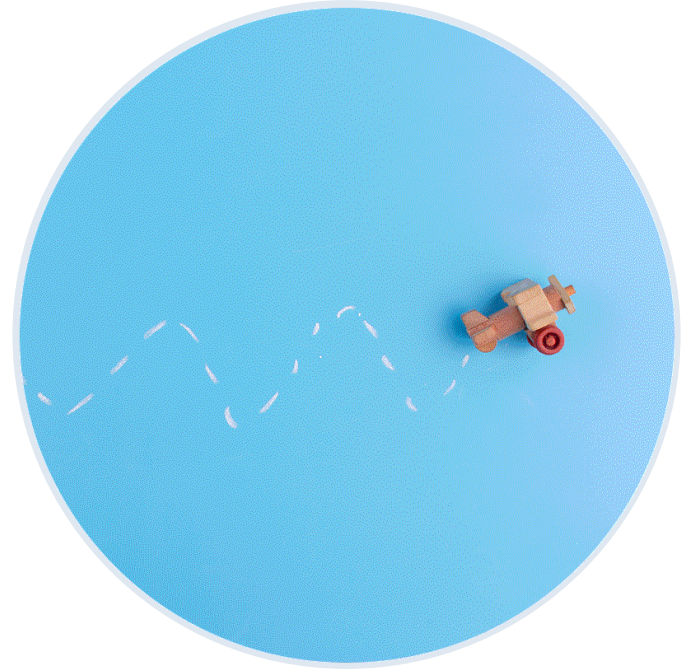
Design Thinking guidelines

5. Stay on topic



Design Thinking guidelines

6. Fail early and often



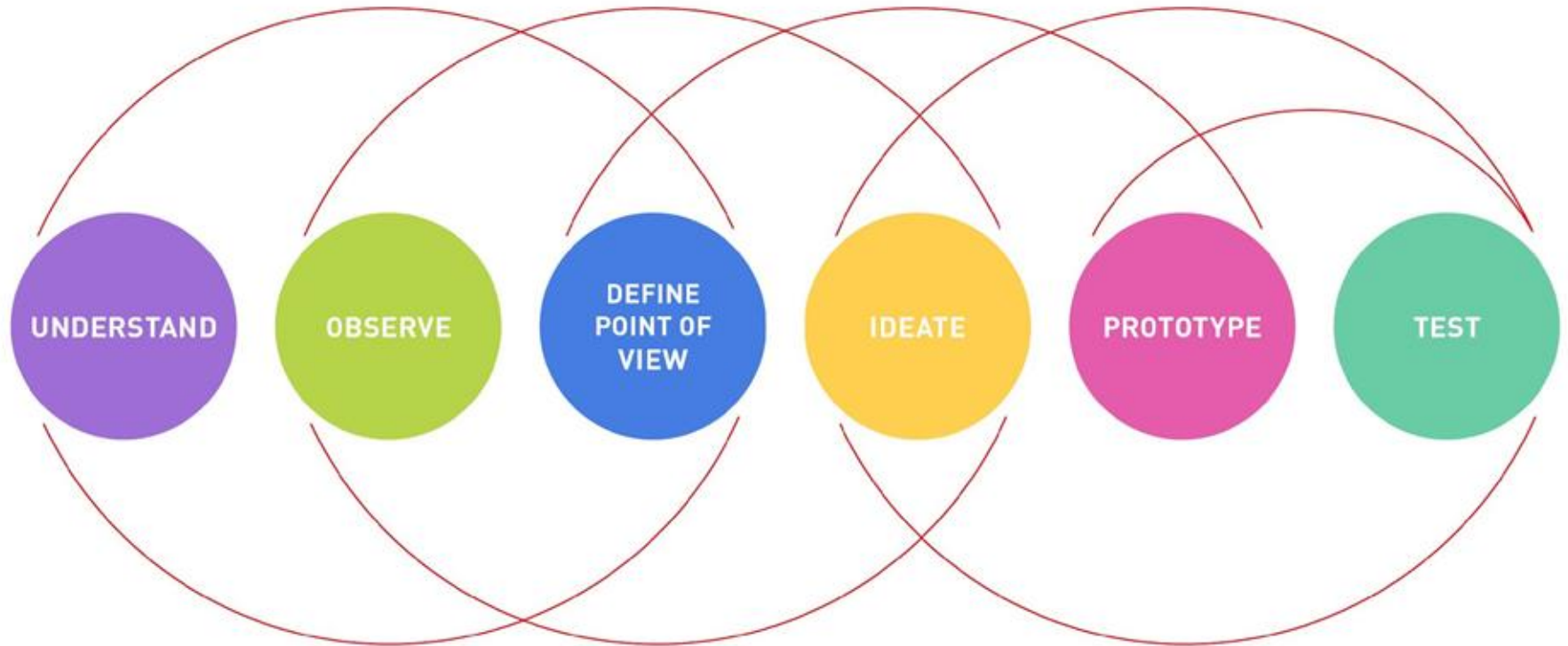
**Design Thinking
needs a team ...**



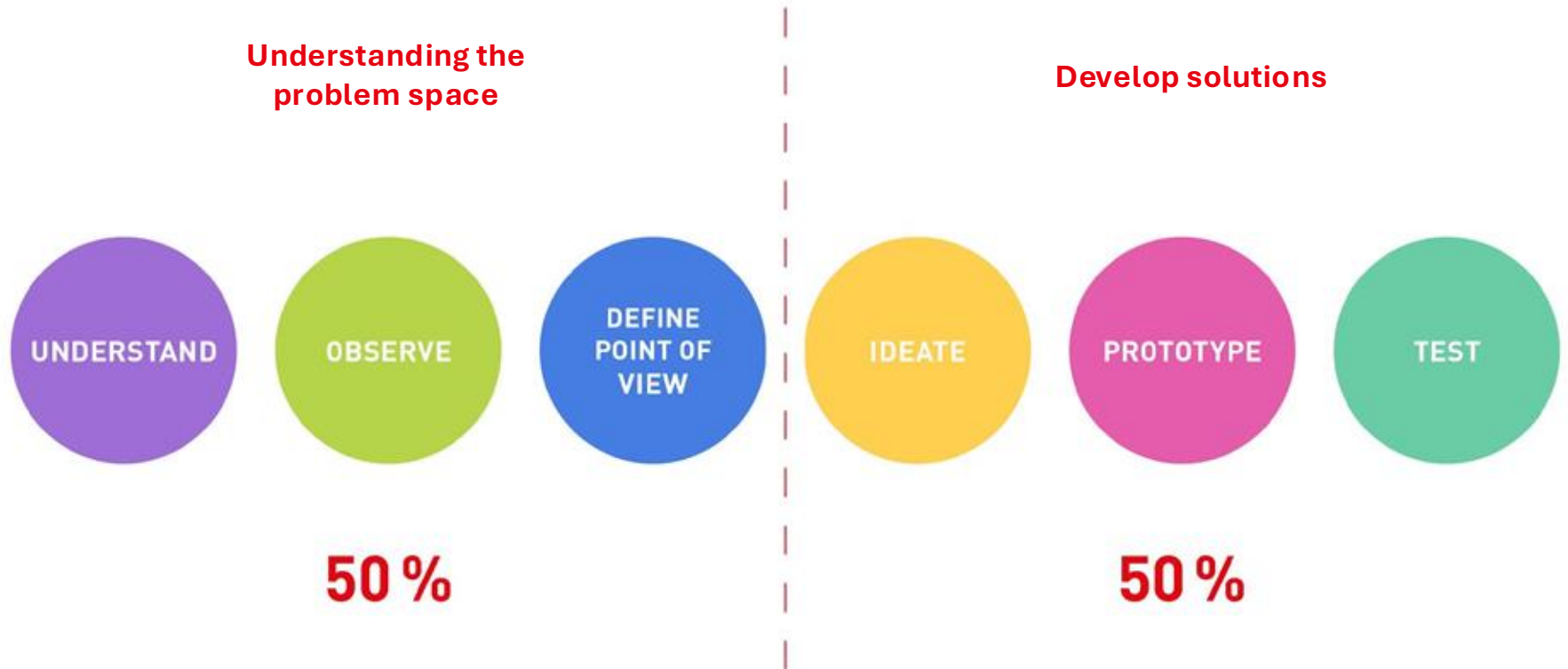
Design Thinking is a process ...



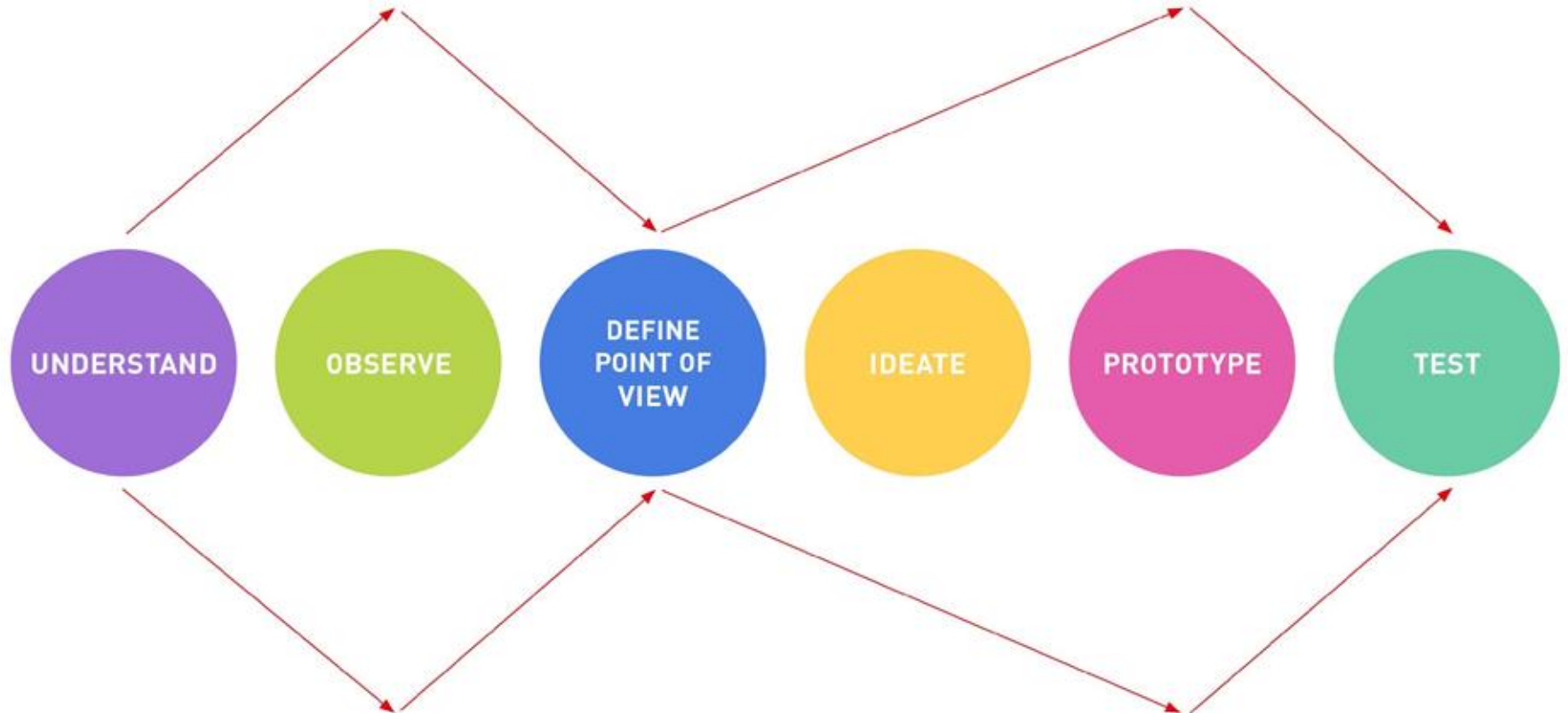
Design Thinking process



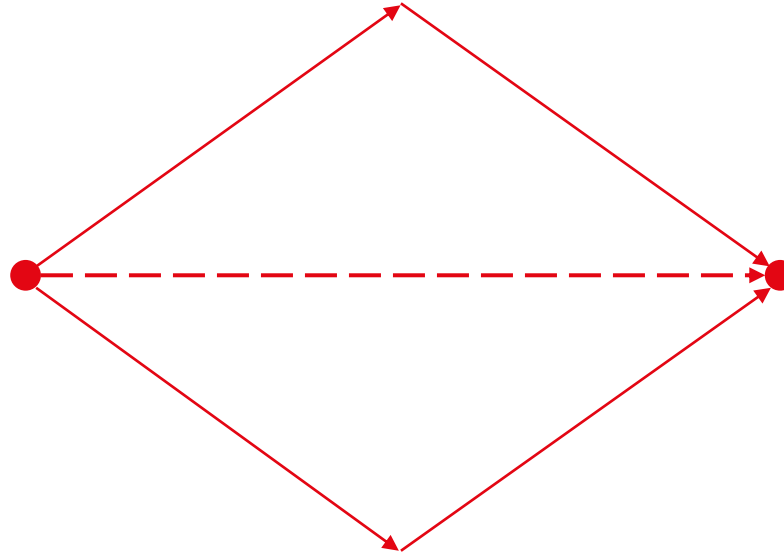
Design Thinking process



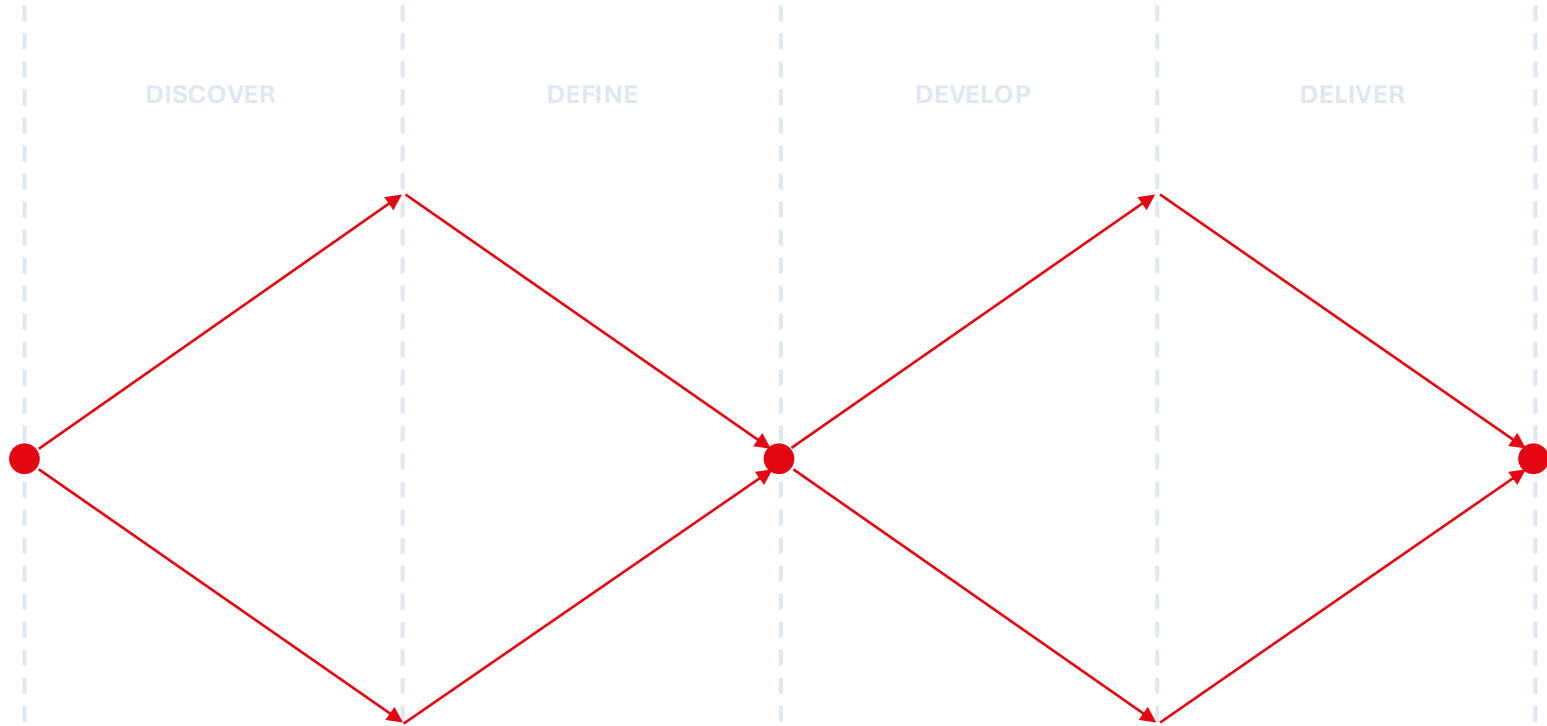
Design Thinking process



Divergent/convergent



Double diamond model



IN PRACTICE



IN PRACTICE



**It's coffee
o'clock!**



Building the teams



How it works ...



Small teams

Form diverse teams
of 3–4 people.
This will be your
team for today!



Get to know your team

Pay attention to diversity:
background, gender, age, experience in Design
Thinking ...
Find a creative team name



5 min

Heli Check-in



How it works ...



Small teams



Share with your team



10 min

Share with your team ...

- What am I feeling today?
- What is preventing me from being here 100%?

CHALLENGE



**Redesign the public toilet
experience.**

CHALLENGE



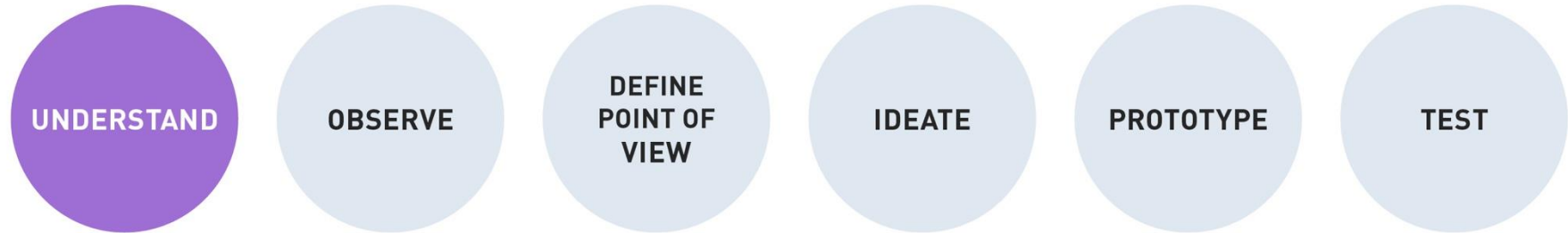
**Design a way to
reduce mental load
for parents of
young children.**



CHALLENGE

**Design a way to reduce anonymity
in urban life.**

Understand

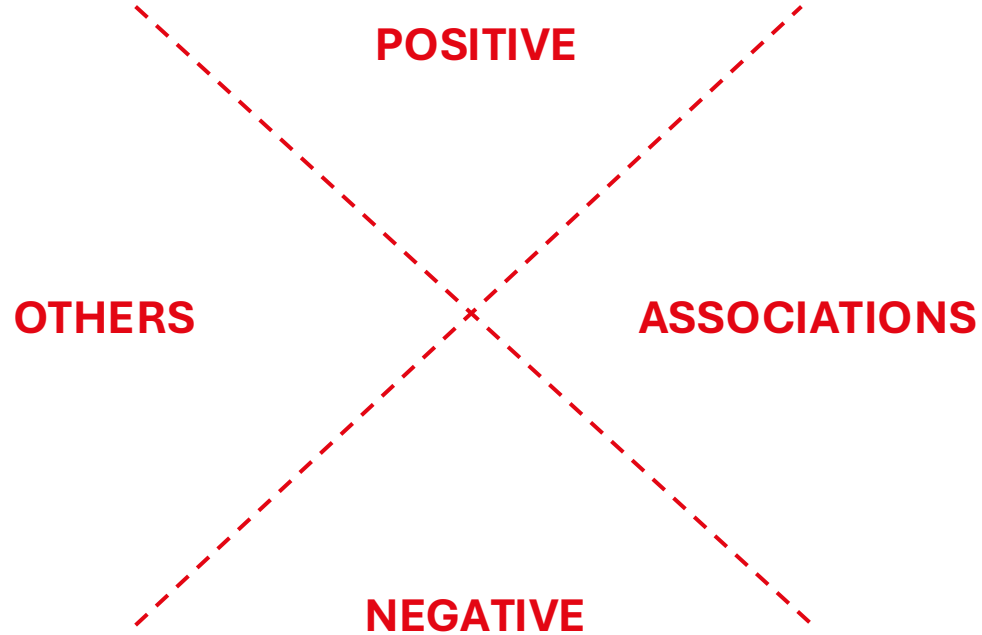


Dive into the topic

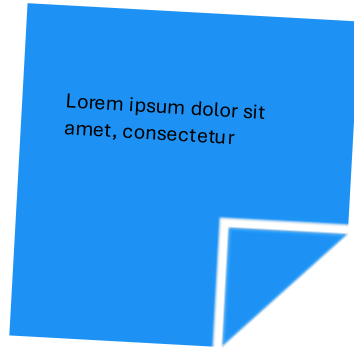
Share ideas and associations

Identify possible stakeholders

Mindmap

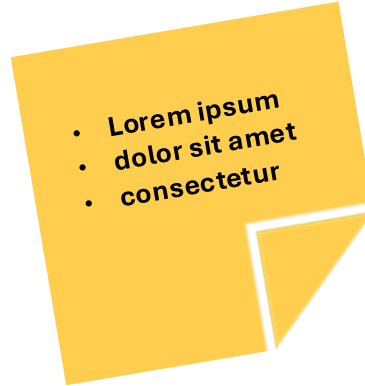


Sticky notes: Don't



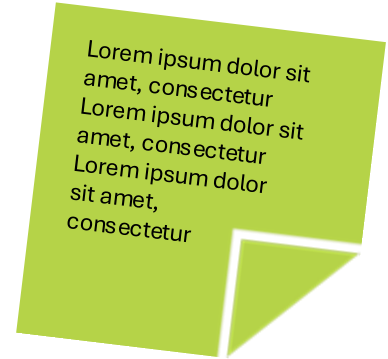
Don't

write very small text



Don't

make bullet points



Don't

overfill the note

Sticky notes: Do



Do

Use thick pens



Do

1 post-it = 1 idea



Do

be visual

Understanding the challenge



How it works ...



Solo work



Prepare your pitch!



5 min

Think about and answer these questions individually. Write your thoughts on sticky notes.

- How do you understand the challenge?
What are your associations?
- What are potential problems or pain points you find within the challenge?
- What are good or bad experiences you can think of?

How it works ...



Small teams



Share with your team



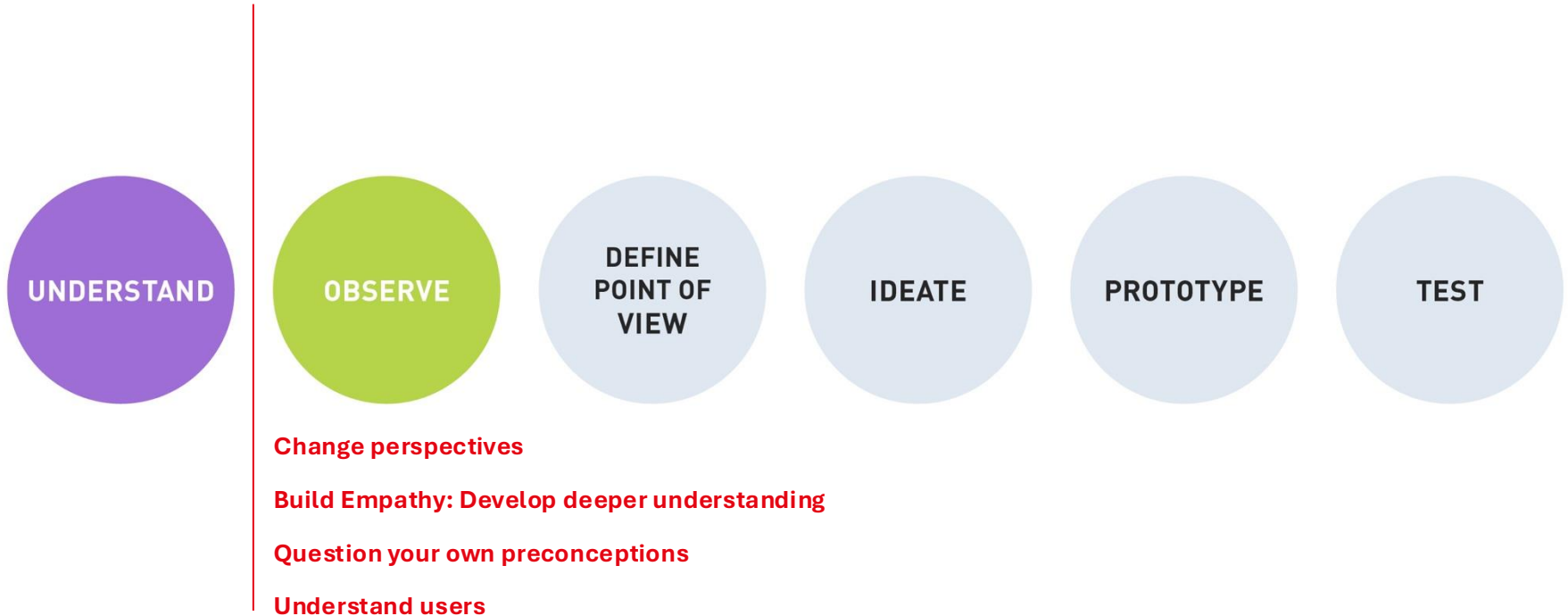
10 min

**Share your notes with your group and
put your sticky notes on the wall according
to the mindmap.**

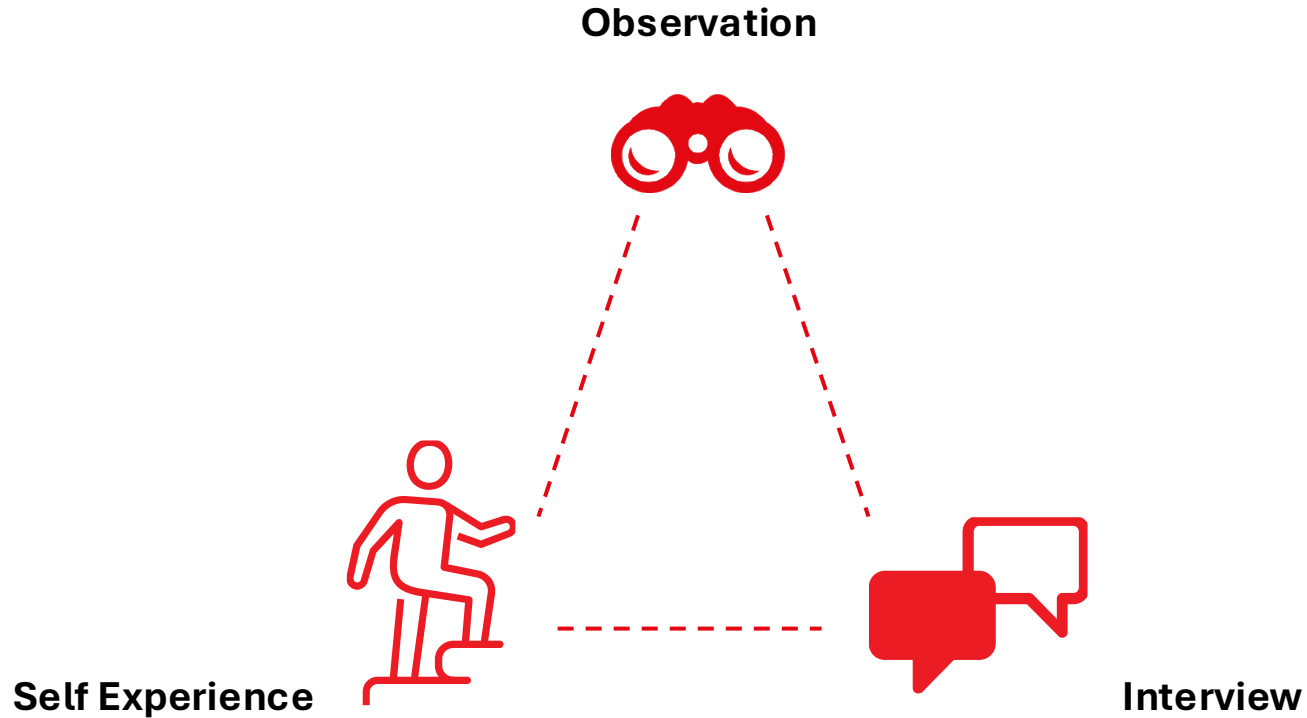
OBSERVE



Observe



Empathy



OBSERVE

WHAT DO YOU SEE?

Foto by Andrea Piacquadio via pexels.com

OBSERVE

**WHAT DO YOU
INTERPRET?**

Foto by Andrea Piacquadio via pexels.com

A young woman with blonde hair tied back, wearing a light pink blazer, is sitting on a wooden park bench. She is holding a black smartphone and looking at it. An elderly woman with short white hair, wearing a white cardigan over a blue top and a pearl necklace, is sitting next to her, smiling and looking at the phone. The background is a blurred park scene with green grass, trees, and other people in the distance.

OBSERVE

**WHICH QUESTION
WOULD YOU LIKE
TO ASK NOW?**

The “need” onion



Find questions



Interview Template

TEAMWORK: DESIGN THINKING PROCESS

FIND INTERVIEW QUESTIONS

Prepare your interview questions.

10 min

Step 1: Kick off your interview

Introduce yourself and build trust by sharing something about yourself. Ask for specific experiences:

- Can you tell me about the first time you ...?
- What was your best/worst/craziest/most memorable experience with ...?
- Could you tell me a story about a time when you ...?

Step 2: Dig Deeper

Explore emotions:

- Why do you say that? Tell me more.
- How did you feel at that moment?
- Could you tell me why is ... important to you?

KICK OFF YOUR INTERVIEW

DIG DEEPER

How it works ...



Small teams



Find interview questions



10 min

Find interview questions based on your team synchronisation:

- What are your most prominent hypotheses?
- What do you want to learn?

**It's coffee
o'clock!**



**Let's have a
conversation!**



Interview guidelines

**Introduce
yourself**



**80% Listening
20% Speaking**



**Dig for stories and
emotions**



One at a time



**Conversation
at eye level**



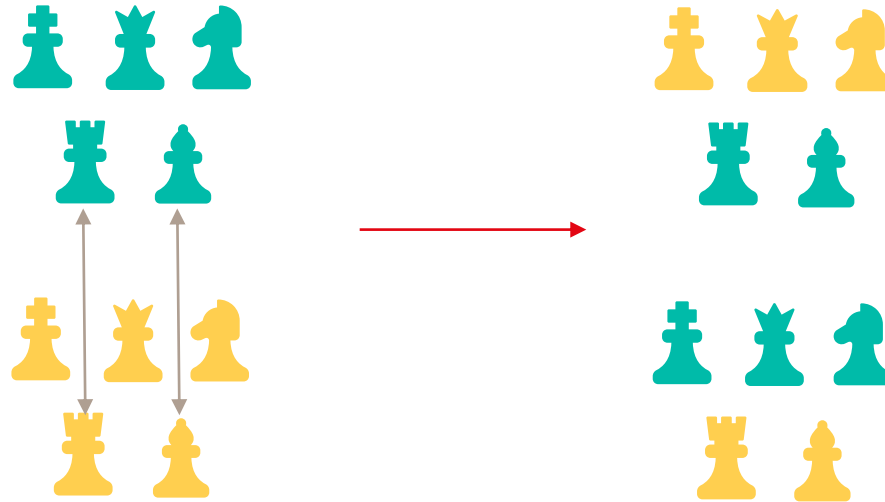
**Ask short and open
questions**



Ask “why”

Interviews

Split your team into 2 groups of 2–3 people.
The subgroups will join another group for the interview.



Interviews

Each team should have

- The questions
- 1 interviewer
- 1–2 people that write down the learnings



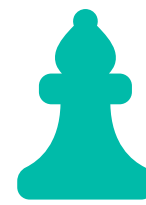
Interviewer



Writer



Interviewer



Writer

How it works ...



Small teams



Interview each other!



20 min

Split into groups and interview each other.

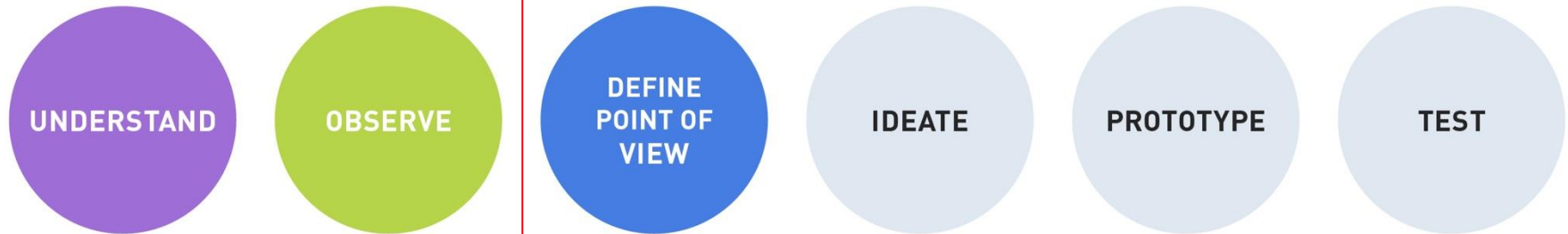
2x 10 min

- Take turns for the interview.
- The first team starts with their questions. Don't forget to take notes on your findings!
- Rotate! Now, the other team will conduct the interview.

DEFINE



Define



Structure and synthesise user insights and findings

Search for strong problems and emotions

Don't find solutions yet, but focus on user need

Evaluate your interview insights ...



**Filter the most
interesting findings out of
your interview notes.**



**Look for
strong emotions!**



**What has been
surprising to learn?**

What is the need?



Share your interview results



How it works ...



Small teams



Share your interview results



5 min

In Subgroups:

Select the 3-5 most important quotes from your interviews. Write them down on large sticky notes!

How it works ...



Small teams



Share your interview results



15 min

Share the quotes with your whole team!
Collect them on your board. Talk about it:

- What is most interesting to you?

Create a persona



Create a persona

Make your interview insights tangible by creating personas.



Persona

YOUR PROTAGONIST



NAME, AGE
Christian, 32

PERSONALITY

conservative	☐	☐	☐	☒	☐	open
carefree	☐	☐	☐	☐	☒	organized
introverted	☒	☐	☐	☐	☐	extroverted
competitive	☐	☐	☐	☐	☒	cooperative
self-confident	☐	☐	☐	☒	☐	vulnerable

KEY DATA AND BIOGRAPHY

- works as a teacher at comprehensive school
- just moved to Hamburg after living in Bamberg all his life
- is single and shy
- very organised
- likes to watch Netflix but also doing sports outside

NEEDS, DESIRES & MOTIVATIONS

PROBLEMS & FRUSTRATIONS

NEEDS, DESIRES & MOTIVATIONS

- wants to find friends but doesn't want to force it
- doesn't want to be alone but is too shy to motivate himself to find somebody
- "I don't want to feel stupid when I meet new people"

PROBLEMS & FRUSTRATIONS

- would like to get to know his colleagues, but they are older and have families
- lives in a district/house where it feels impossible to get to know people
- Hamburg seems huge for him. He is afraid that his mentality is not the right one for this big city

How it works ...



Small teams



Create a persona!



20 min

Create a persona with the (for you)
most interesting need / desire / motivation.
Fill in the persona template.

HOW MIGHT WE?



How might we?

- HMW questions reframe the needs and problem areas into opportunities for design
- They suggest, that there is a solution for the users' challenge
- They open up a solution space by the chance to answer them in various different ways
- They are the launchpad for your brainstorming



Build them on your most powerful interview insights.

NEEDS, DESIRES & MOTIVATIONS

- wants to find friends but doesn't want to force it
- doesn't want to be alone but is too shy to motivate himself to find somebody
- "I don't want to feel stupid when I meet new people"

PROBLEMS & FRUSTRATIONS

- would like to get to know his colleagues, but they are older and have families
- lives in a district/house where it feels impossible to get to know people
- Hamburg seems huge for him. He is afraid that his mentality is not the right one for this big city

Persona



How Might We help Christian to get to know his neighbours?

Persona



How Might We help Christian to
start conversations with new people?

Persona



How Might We help Christian to identify shared hobbies and interests with his neighbours?

Develop brainstorming questions



How it works ...



Small teams



Develop brainstorming questions



10 min

Find How Might We questions for your persona.

Build them on your most powerful interview insights.

Select one out of the questions.

NEXT UP ...



AGENDA

1. WELCOME & INTRO	09:00
2. TEAMBUILDING	09:30
3. UNDERSTANDING	10:00
4. DESIGN / SKETCHING	10:30
5. DIVE	11:00
6. DESIGN	11:30
7. INITIAL	12:00
8. REACTION	12:30
9. PROTOTYPING	13:00
10. TESTING	13:30
11. PRESENTATION	14:00
12. ASSIGNMENT	14:30 / 15:00

Lunch Break



IDEATE

How might we show
the possibilities of
buying organic food
more affordably &
less time consuming

Bio-degradable
take
out
packaging

INFO APP
-APPWAY
PRODUCT 1
POSTAL USE
PACKAGE
↓

Bins
with
Motivation
quote

How might we
make trash organization
in the house
easier & more fun?

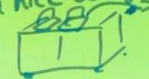
color-coding
system on
packaging
bins
↓
kids!

How might we
make trash organization
recycling
look nicely & be
hygienic?

bio-waste
↓
Compost machine

WASTE
LIFT

bin system
that is
movable, has
a nice design



Ideate



Find various ideas & solutions based on your HMW question

Use the multidisciplinary thought power of your team

Be sure to divide idea generation and idea selection

BRAINSTORMING METHODS



AGENDA

1. WELCOME & INTRO	09:00
2. TEAMBUILDING	09:30
3. UNDERSTANDING	10:00
4. DESIGN / SKETCHING	10:30
5. IDEAS	11:00
6. DESIGN	11:30
7. INITIAL	12:00
8. REACTION	12:30
9. PROTOTYPING	13:00
10. TESTING	13:30
11. PRESENTATION	14:00
12. ASSIGNMENT	14:30 / 15:00

Silent brainstorm

**Write as many different
solutions as you can
individually and silently.**



Anti / reverse

**Reverse the problem or
challenge by asking:
“How could I possibly cause
the problem?”**



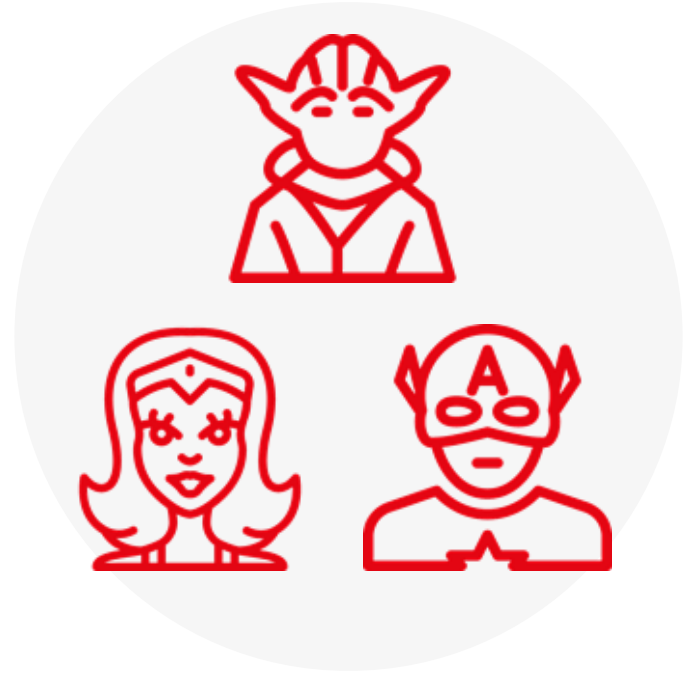
Back to the future

**Put yourself in a future world as
it might look like in 100 years.**



Super hero brainstorming

Put yourself into the shoes
of a super hero.



Bodystorming

**Act like the product or service
already exists.**

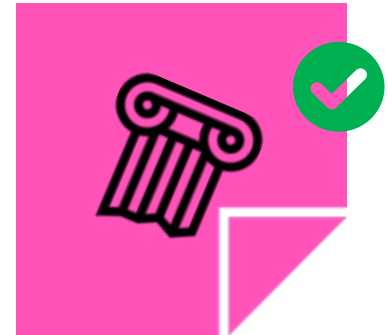
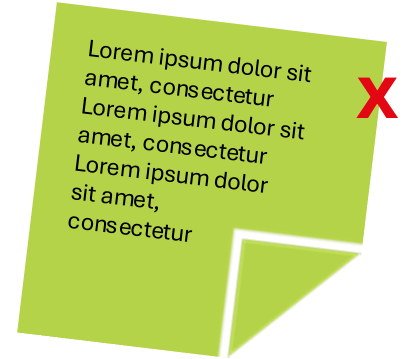
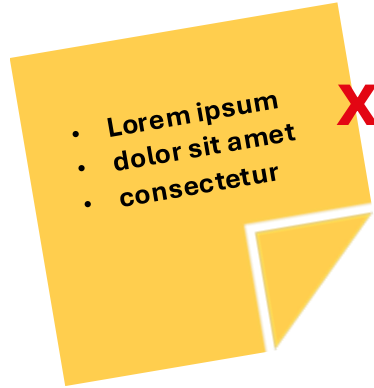
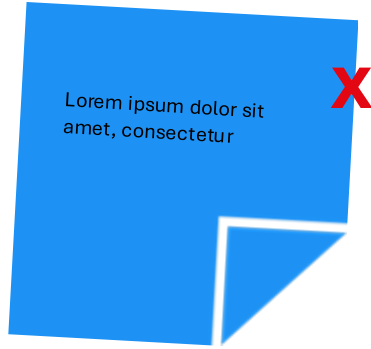


Object storming

**Reimagine an
existing product in order to
invent something new.**



Remember the sticky notes guidelines!



Remember ...

- Keep track of the time
- Keep it short
- Don't judge ("Yes, and ..." instead of "No, but ...")

Brainstorming Session



How it works ...



Teamwork



Brainstorming Session



25 min

Together with your team, use the brainstorming methods. Keep in mind the Design Thinking Guidelines:

- Build on the ideas of others
- Defer judgement
- Listen actively
- Stay on topic
- Fail early and often

SELECTING THE BEST IDEAS



Dotmocracy



The Dotmocracy method is used for democratic evaluation of ideas, using sticky dots. Each team member gets the same amount of dots to vote for their favorite ideas.

PROTOTYPE



Prototype



Make idea tangible and testable

Think with your hands

Develop your idea further

Building the prototype

- The vague idea turns into more concrete shapes
- The team synchronises
- The idea gets tangible and therefore ready to be tested

Building the prototype



What?

Make the idea tangible



How?

Quick and dirty



Why?

Understand and test

**There are different
kinds of prototypes ...**



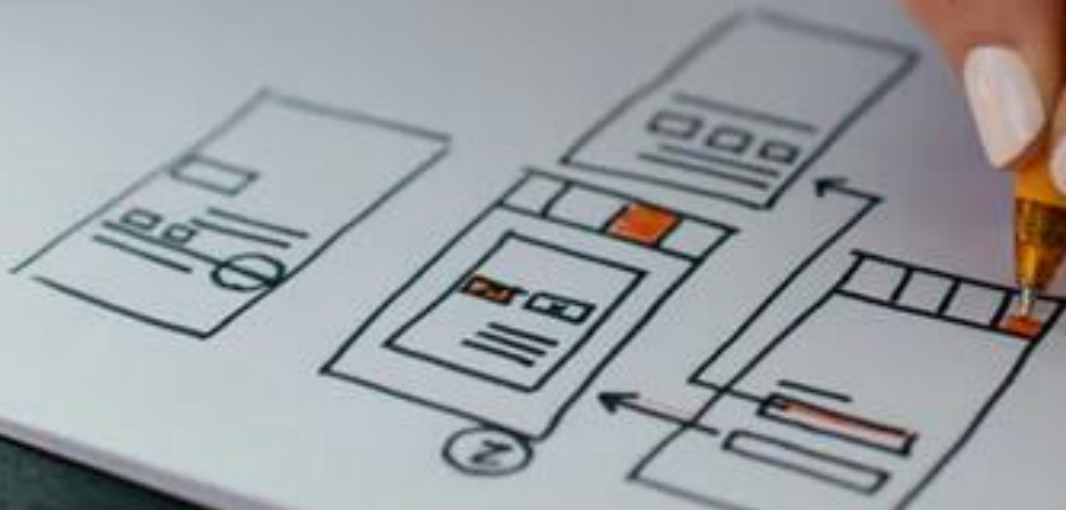
SKETCH



MOCK-UP



WIREFRAME



USER JOURNEY



In summary ...

**... think about what you want to test first.
Based on that, build the prototype as
simple as possible.**

Filter your ideas



How it works ...



Teamwork



Filter your ideas



10 min

Use the Dotmocracy method to find the best idea within your team. For each question, vote in a different colour.

- Favorite idea: Which idea are you most excited about?
- Degree of Novelty: Which idea is the most innovative one?
- Easy to implement: Which idea is the easiest to implement?

Build a prototype



How it works ...



Teamwork



Build your prototype



30 min

Together with your team, build a prototype.
You can ...

sketch

wireframe

mockup

... and build with the material on the
prototyping table!

A group of people are gathered on a city street. In the foreground, a man with a beard sits on the ground, holding a beer bottle, surrounded by cardboard boxes. One box is labeled 'EMONAIID' and another 'PAUL-AUTOMAT'. A woman in a grey coat and scarf stands next to him, holding a clipboard. Another woman in a blue sweater and grey scarf stands to the right, holding a small object. A man in a grey hoodie is seen from the back, sitting on the ground. The background features colorful graffiti on buildings, including the word 'PRISONERS' and a rainbow flag. A silver car is parked on the street. A red box with the word 'TEST' is in the top left corner.

Testing

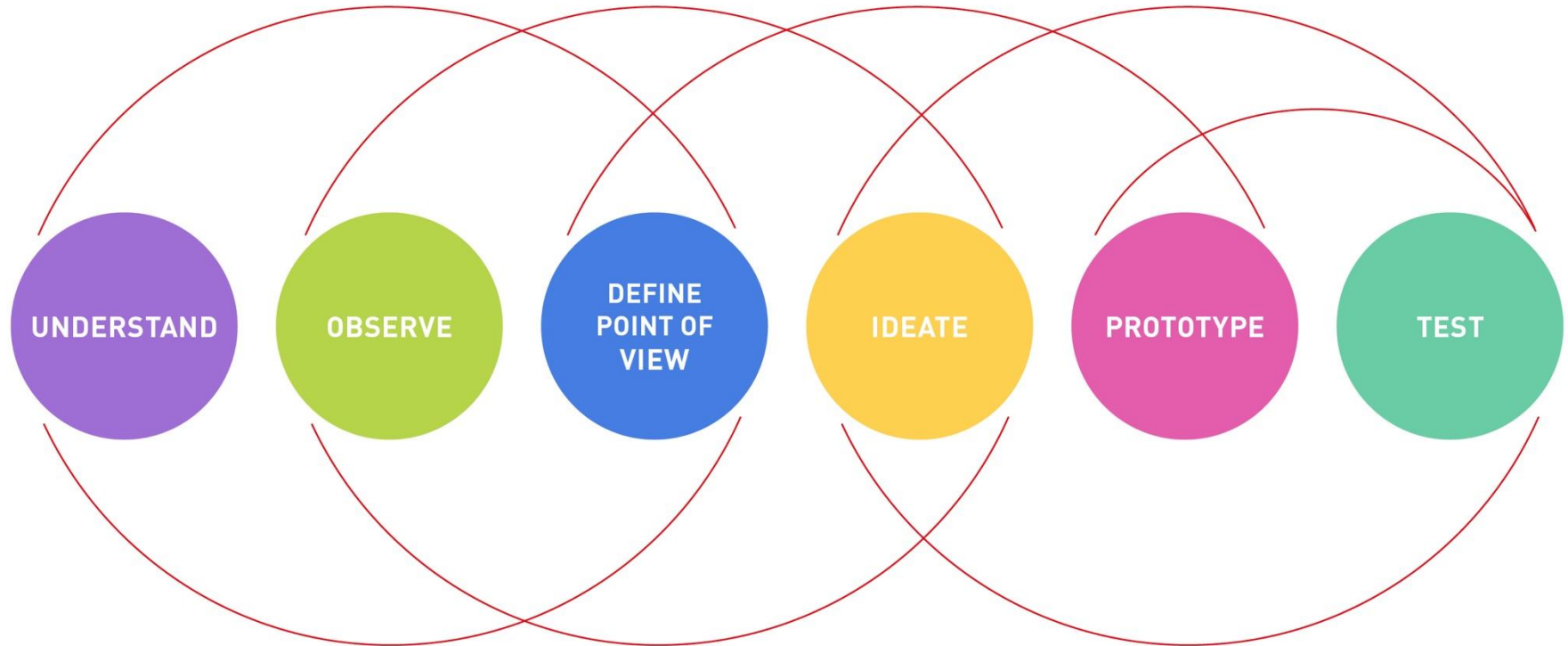


Get direct user feedback

Find your blind spots

Find the starting point for your next iteration

Design Thinking process



Prepare your test scenario



How it works ...



Teamwork



Prepare your test scenario



10 min

Discuss with your team.

- Who do you need to test your idea with?
- What do you want to learn from your user?
- Where should you test your idea?

Interview guidelines

**Introduce
yourself**



**80% Listening
20% Speaking**

**Dig for stories and
emotions**



One at a time



**Conversation
at eye level**



**Ask short and open
questions**



Ask “why”

Test, test, test!



Testing template

TEAMWORK: DESIGN THINKING PROCESS

TESTING TEMPLATE



Test your prototype!

45 min

Step 1

Provide a short introduction: What is this about, what is to be expected?

Be careful not to reveal anything that could affect your test results. Refrain from explaining things too much. Instead, observe the subject closely – write down statements, questions, and behaviors.

After testing, ask questions based on your observations and complete your notes accordingly.

YOUR PROTOTYPE

CHALLENGE

PROTOTYPE

INTRODUCTION

TEST SUBJECT

PERSONAL
INFORMATION

I LIKE... I WISH....

NEW IDEAS

OPEN QUESTIONS

OBSERVATIONS

How it works ...



Teamwork



Test your prototype!



45 min

Go outside with your team to test your prototype.

- Remember the interview guidelines
- Take notes on your test template

Including a short break

Iterate and prepare your presentation



Presentations

TEAMWORK: DESIGN THINKING PROCESS

PRESENTATION



Fill out the template with your findings from the testing interviews in preparation of your presentation.

15 min

NEED

Which need/problem do you address with your solution?

PROTOTYPE

How does your solution work?

TEST-LEARNING

Which are the three central insights from your user testing?

NEXT STEPS

Which would be the next steps in the iteration?

How it works ...



Teamwork



Prepare your presentations!



15 min

Together with your team:

- Gather your learnings
- Fill out the presentation template and prepare your presentation

How to give feedback



Feedback etiquette

Be sensitive!

- Keep in mind your varied cultural backgrounds
- Keep a sense of mutual respect
- Practice clear and constructive feedback

Feedback etiquette

Embrace feedback!

- Understand feedback as a learning opportunity
- Try not to defend yourself or explain too much
- Take notes!
- Practice listening with curiosity and openness

Feedback grid

I like ...

I wish ...

New ideas

Open questions

Presentations



3 min Presentation



2 min Feedback

THE STAGE IS YOURS!



Wrapping up...



I like, I wish, I take away ...
My first step as a sciencepreneur is ...

Stay connected with the YES community

- Join our LinkedIn group
- Take part in our community calls
- Tell your peers and spread the word via social media
- Write a testimonial about us

Write to us at youngentrepreneurs@falling-walls.com if you want to contribute to the community, or share feedback and updates about your entrepreneurial journey!



Boost your career with your YES experience

- Connect with YES and fellow participants on LinkedIn
- Share your YES certificate on Social Media
- Add YES to your trainings on LinkedIn and your CV
- ... and carry the entrepreneurial spirit further.



Time for feedback!



Thank you!



Connect with us and each other via Social Media ...



LinkedIn
Page



LinkedIn
Group



Instagram
@sciencepreneurs



Newsletter

THE END

