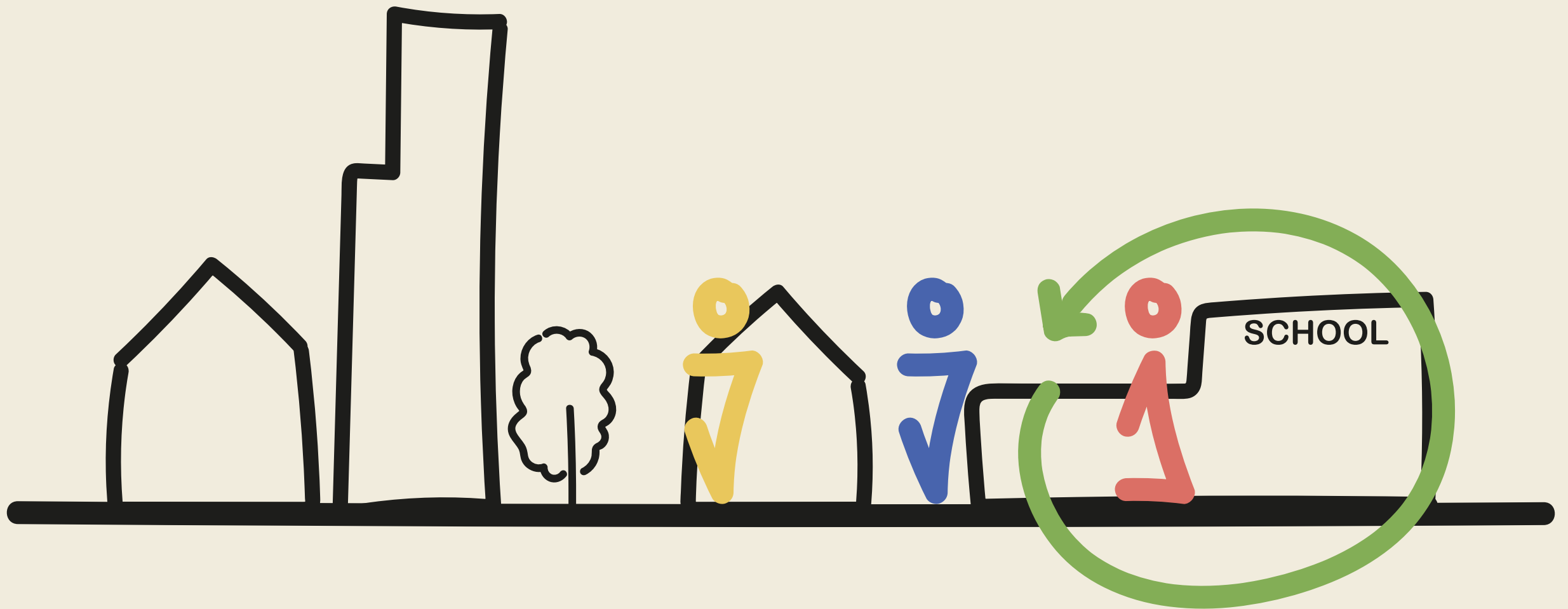




A Workshop that Engages End-users to Create Circular School Buildings

Maud Hettema | 18 January 2023

Context

Paris Agreement



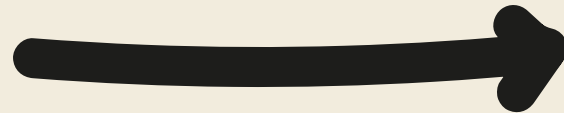
Context

Global Circularity

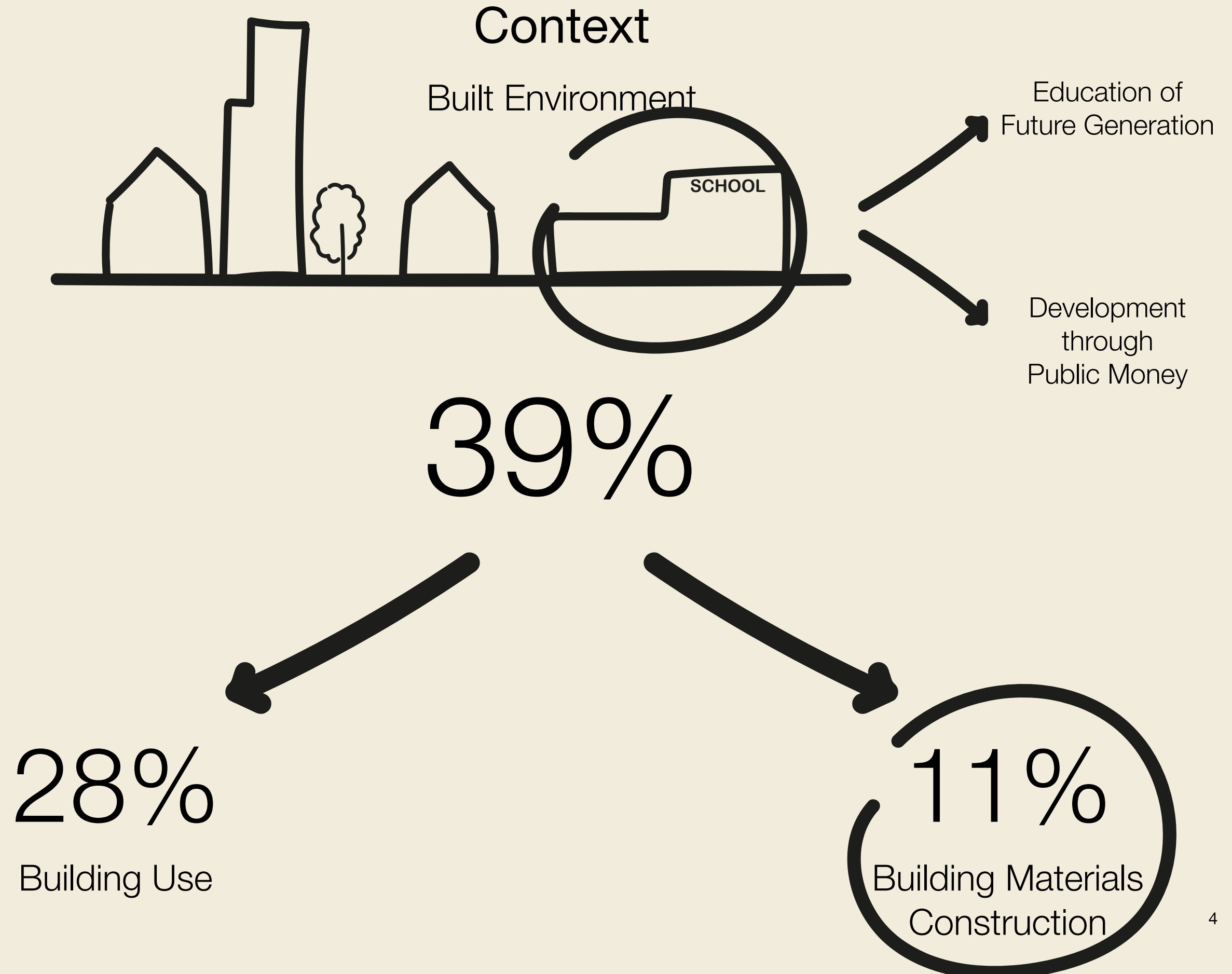
=

Percentage of materials that enter global economy and are reused

8,6%

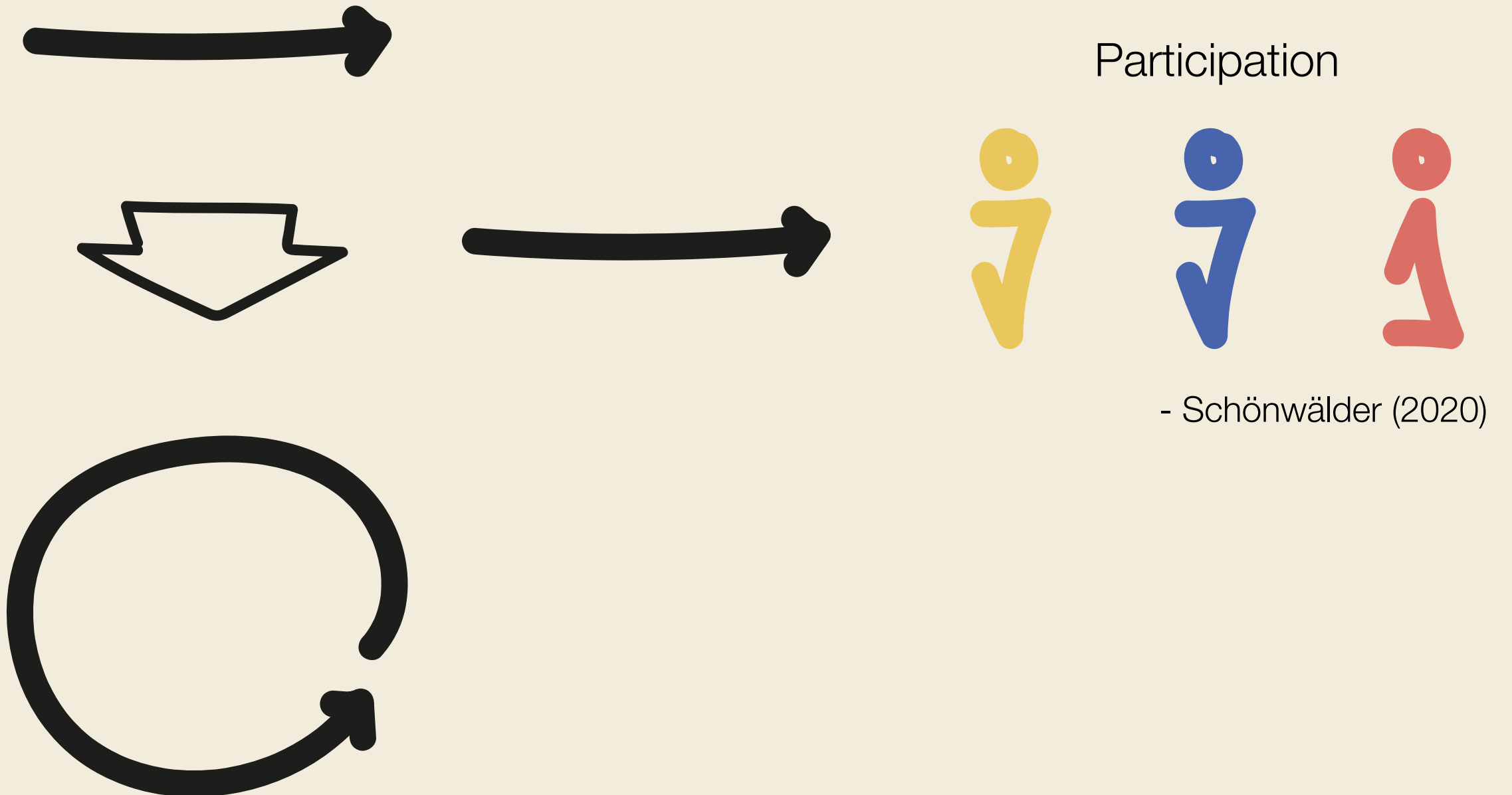


17%



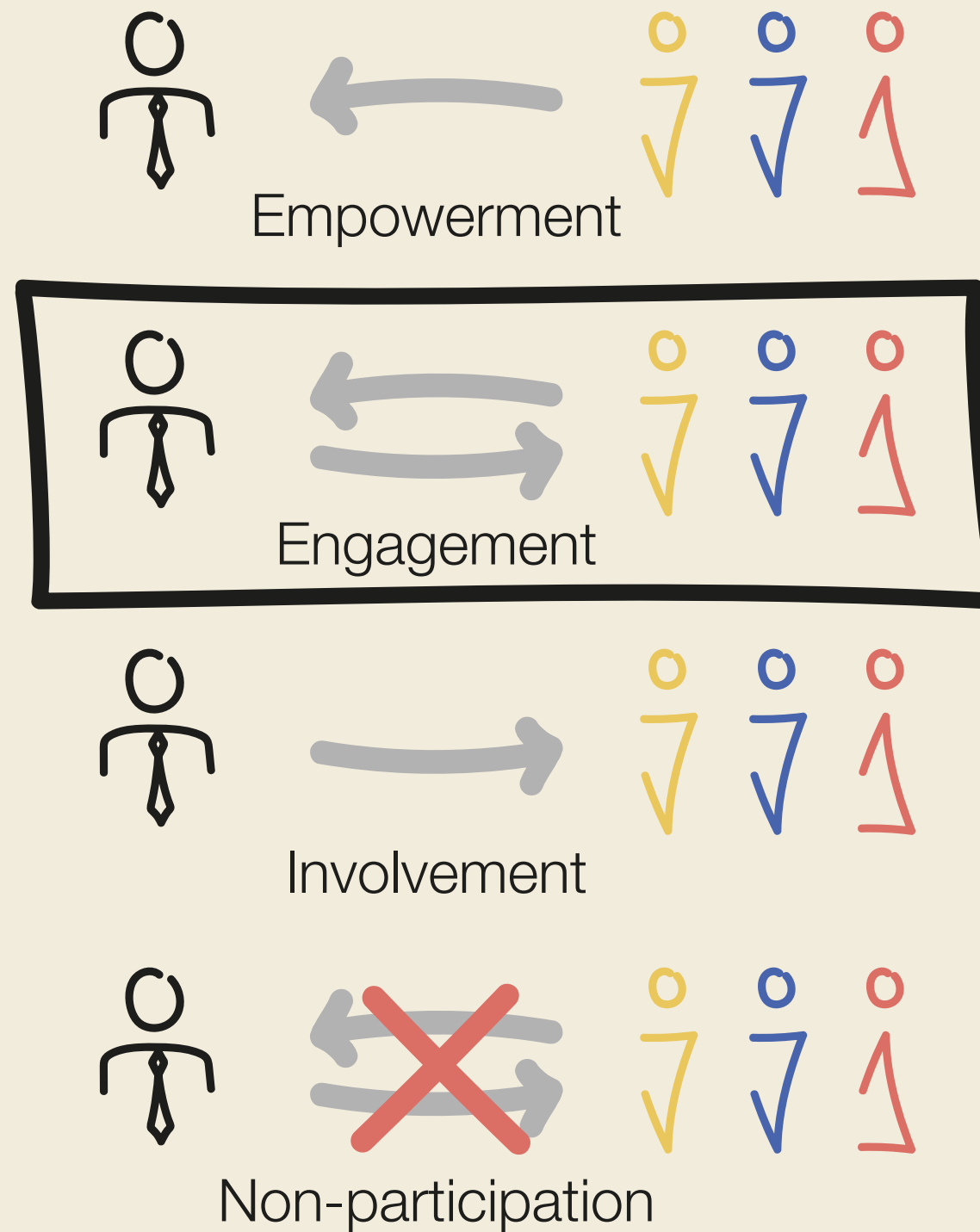
Context

Circularity & Participation

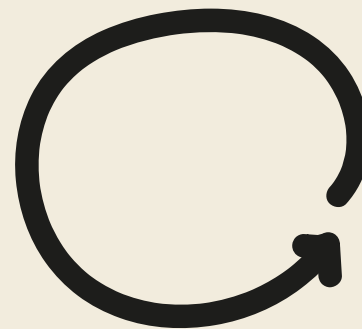
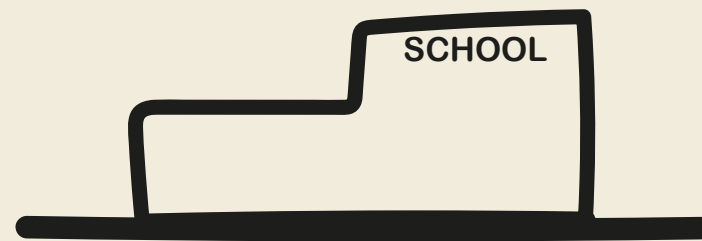


Context

Level of Participation



Main Focus



Research Question

How to **create a workshop** that
engages end-users of schools
in developing a **circular school building**?



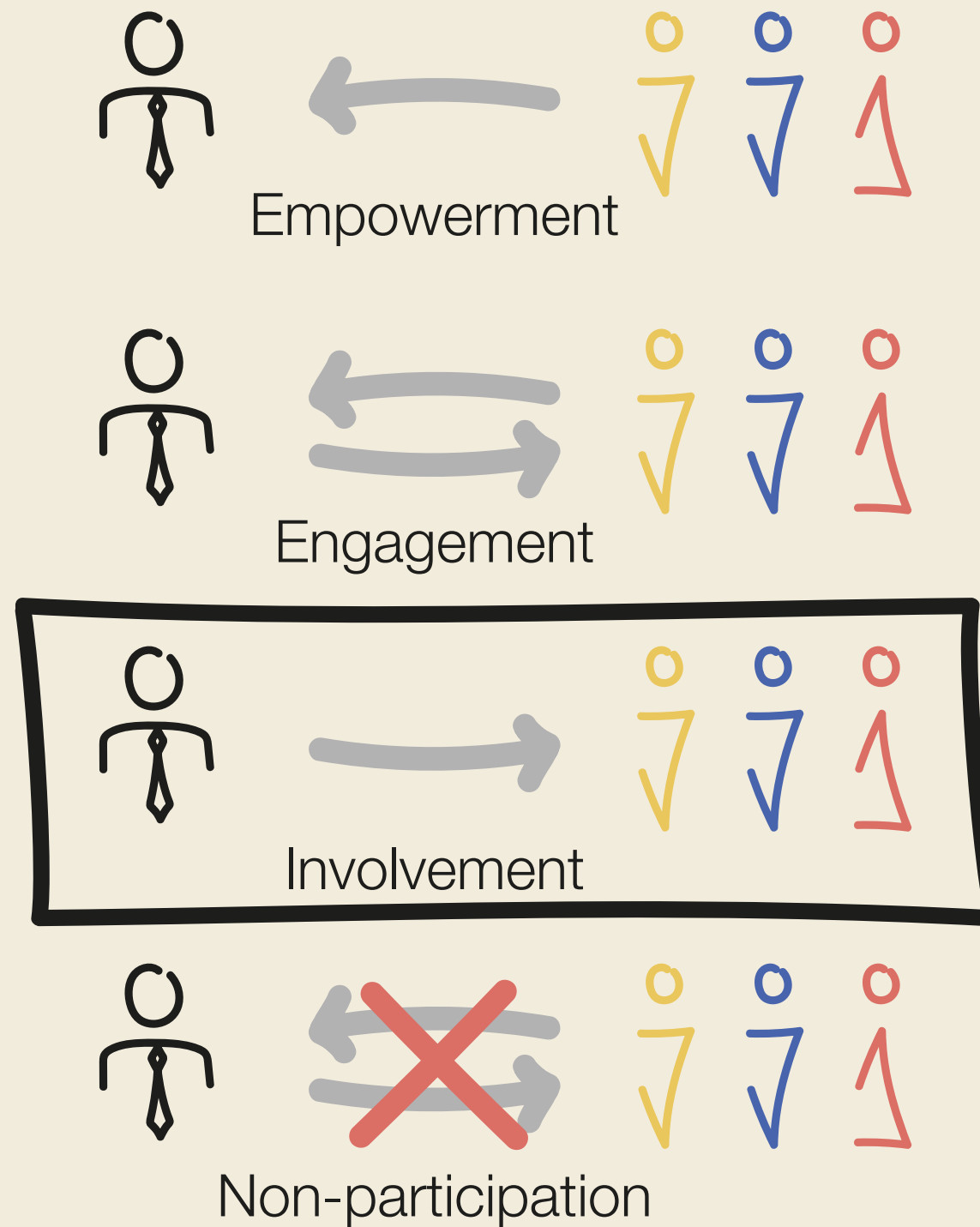
Mini-workshop

How to **create a workshop?**



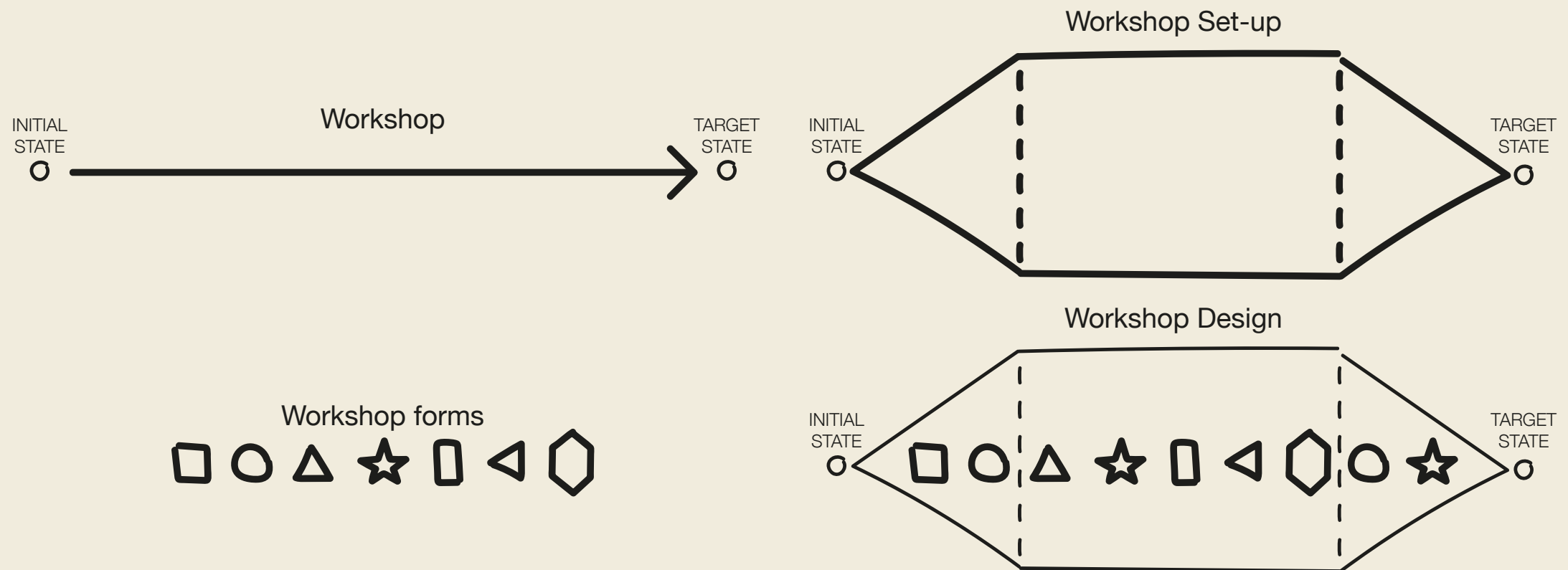
Mini-workshop

Level of Participation

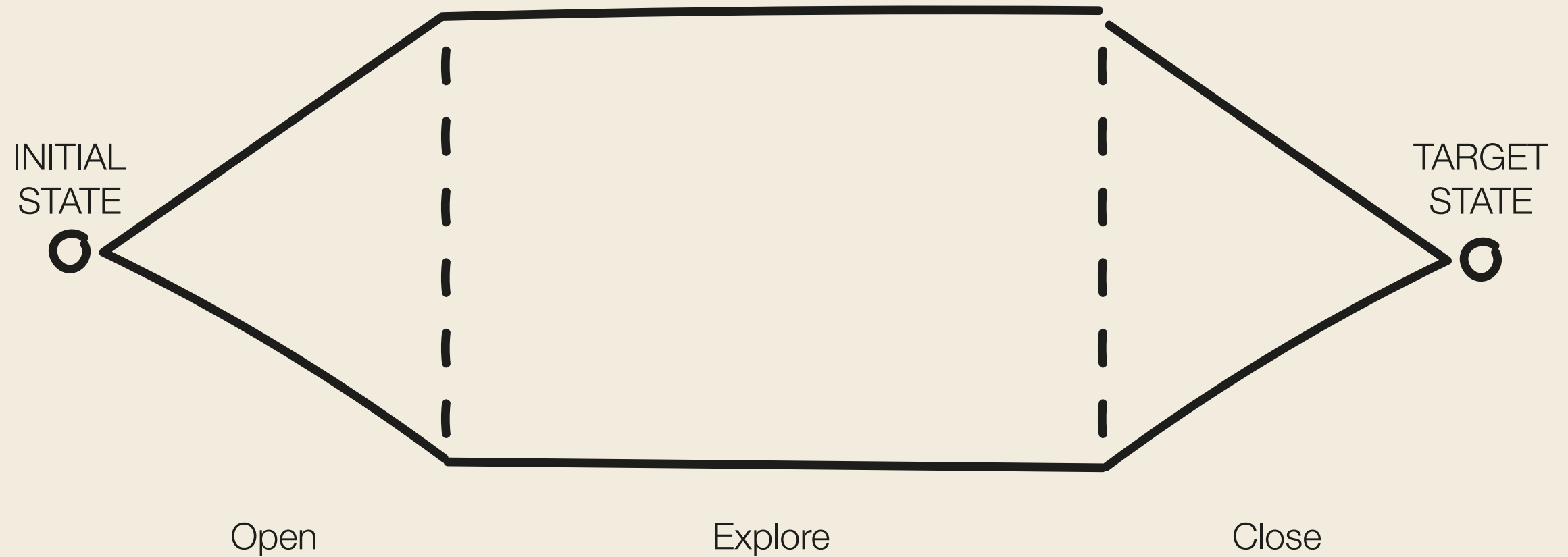


Mini-workshop

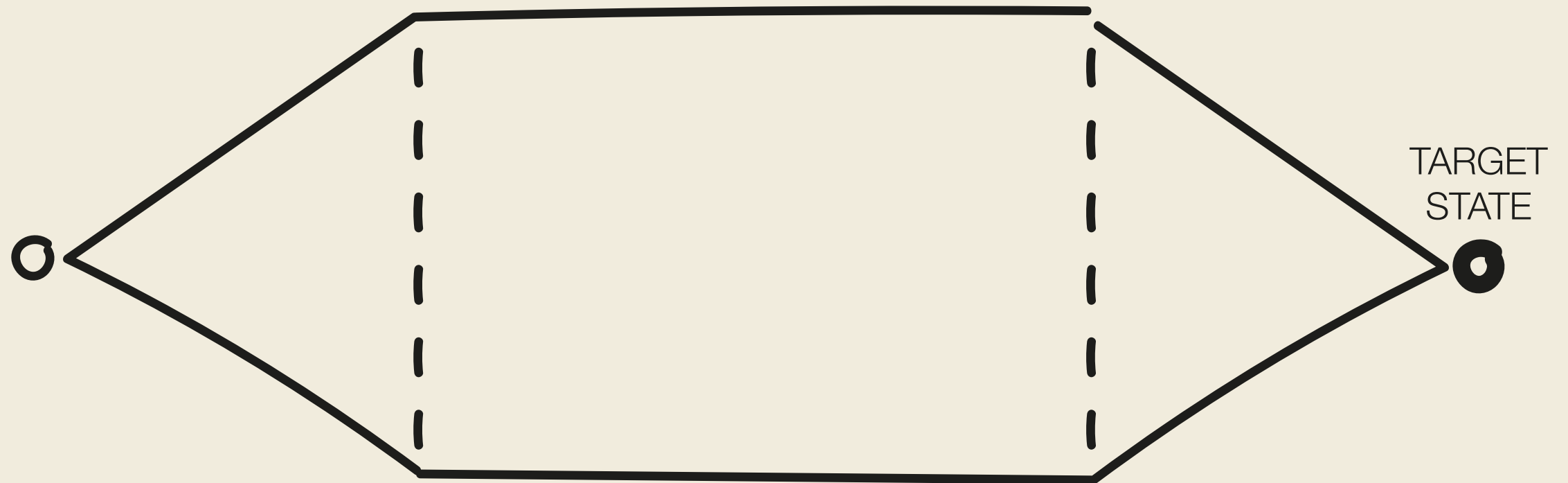
Definitions



Mini-workshop



Mini-workshop



Goal of the workshop

=

Participants know how to create a workshop

Mini-workshop



Starting point of the workshop

Who is on the team?
What do we know now?
What resources are available?

Mini-workshop



Who ever participated in a workshop?

Wie heeft er ooit deelgenomen aan een workshop?

Mini-workshop



Who ever organised / created a workshop?

Wie heeft er ooit een workshop georganiseerd / gemaakt?

Mini-workshop



Starting point of the workshop

Who is on the team?
What do we know now?
What resources are available?

Mini-workshop



Open

Opening

Set the stage

Introduce

Inform

Mini-workshop



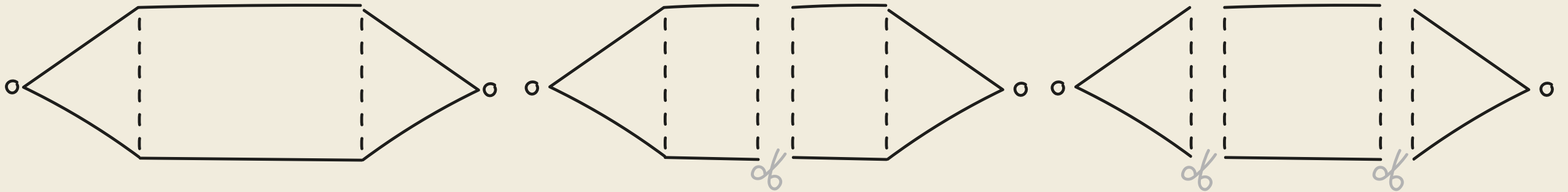
Explore

Exploring

Explore
Experiment
Experience

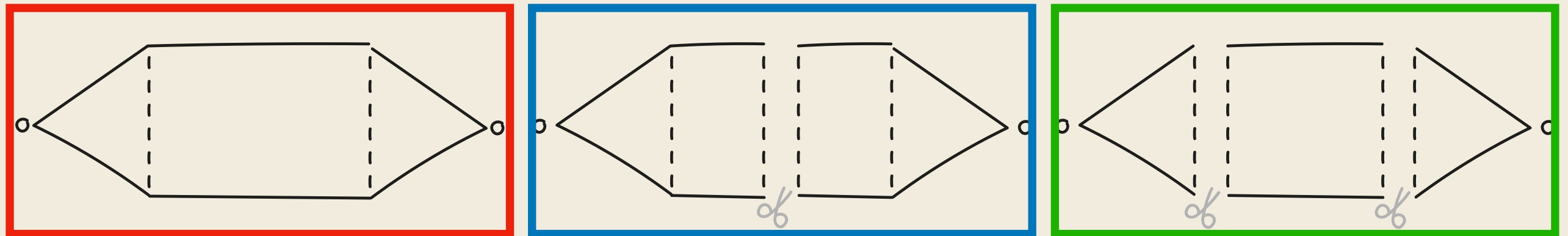
Mini-workshop

Different set-ups



Mini-workshop

Different set-ups

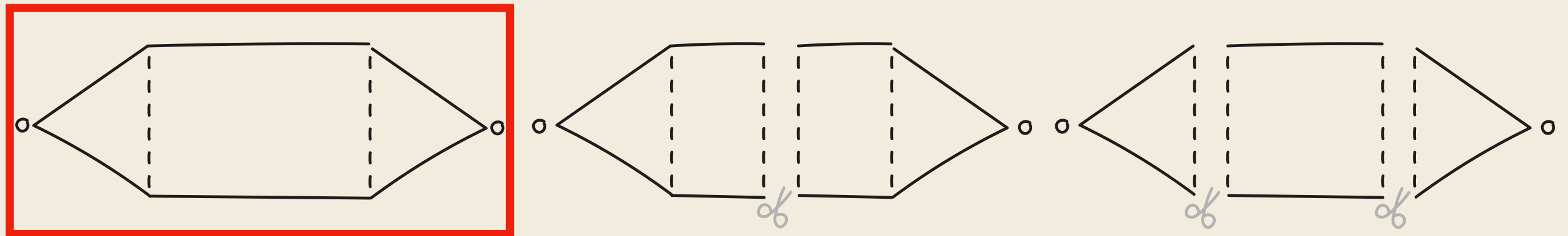


There is a consistent group of participants, however there is no time to process the outcomes of one part for the next.

Er is een vaste groep deelnemers, maar er is geen tijd om the uitkomsten te verwerken van een deel voor het volgende deel.

Mini-workshop

Different set-ups



There is a consistent group of participants, however there is no time to process the outcomes of one part for the next.

Er is een vaste groep deelnemers, maar er is geen tijd om the uitkomsten te verwerken van een deel voor het volgende deel.

Mini-workshop

Different workshopforms



Mini-workshop

Different workshopforms



Informing



Exploring



Deciding

Mindmap

Mini-workshop

Different workshopforms



Informing | Exploring | Deciding

Mindmap

Mini-workshop

Different workshopforms



Informing



Exploring



Deciding

Dot-voting

Mini-workshop

Different workshopforms



Informing



Exploring



Deciding

Dot-voting

Mini-workshop

Different workshopforms



Informing | Exploring | Deciding

Puzzel het model

Mini-workshop

Different workshopforms



Informing | Exploring | Deciding

Puzzel het model

Mini-workshop

Different workshopforms



Informing | Exploring | Deciding

Mood board

Mini-workshop

Different workshopforms



Informing



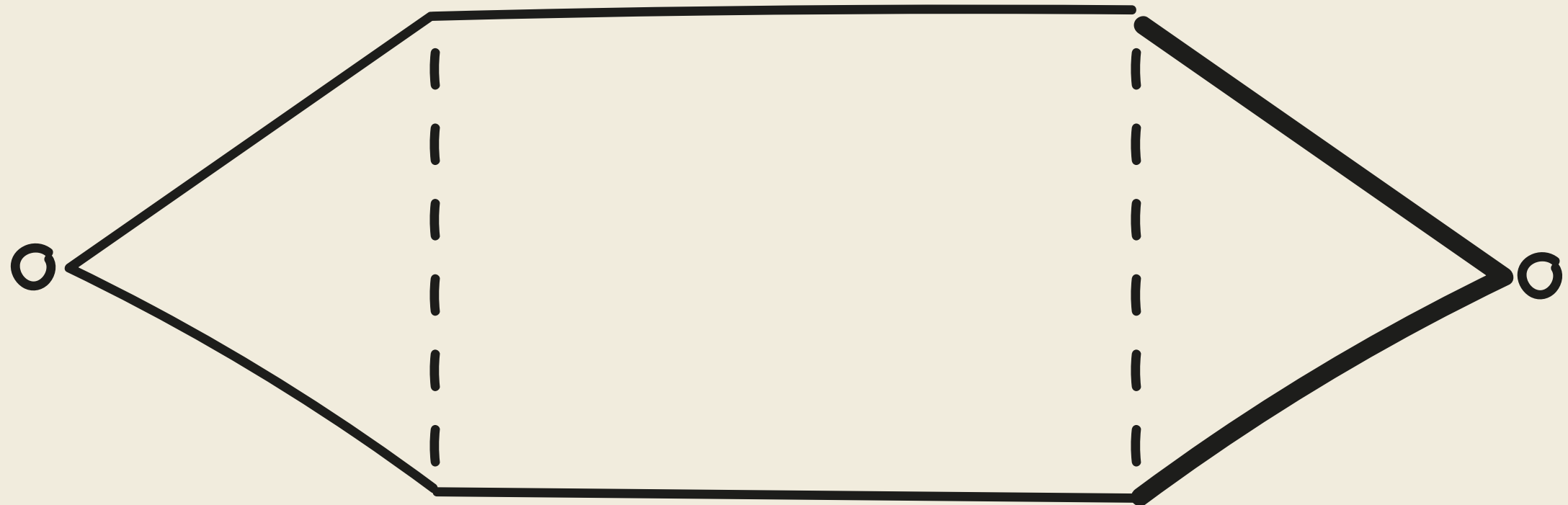
Exploring



Deciding

Mood board

Mini-workshop

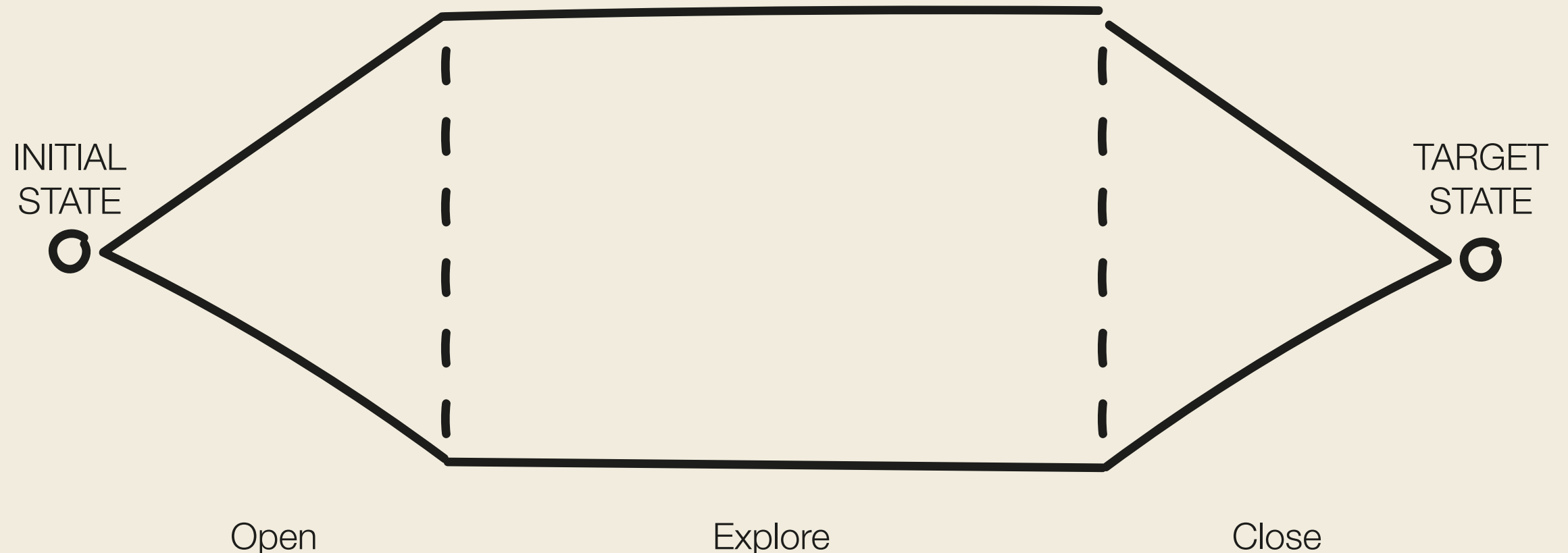


Close

Closing

Conclude
Decide

Mini-workshop



+

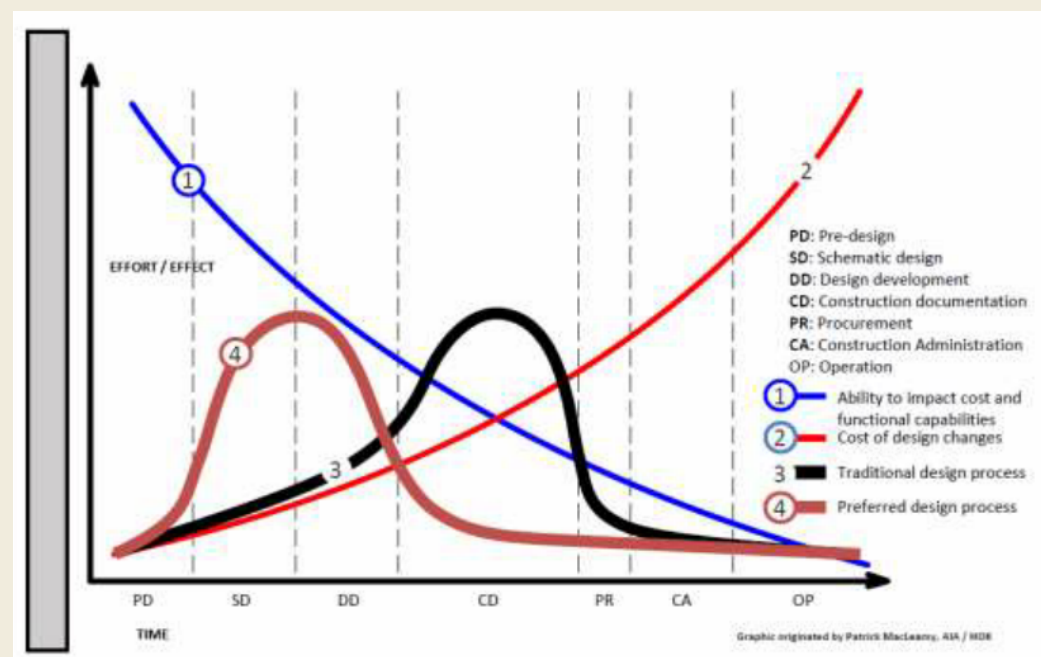
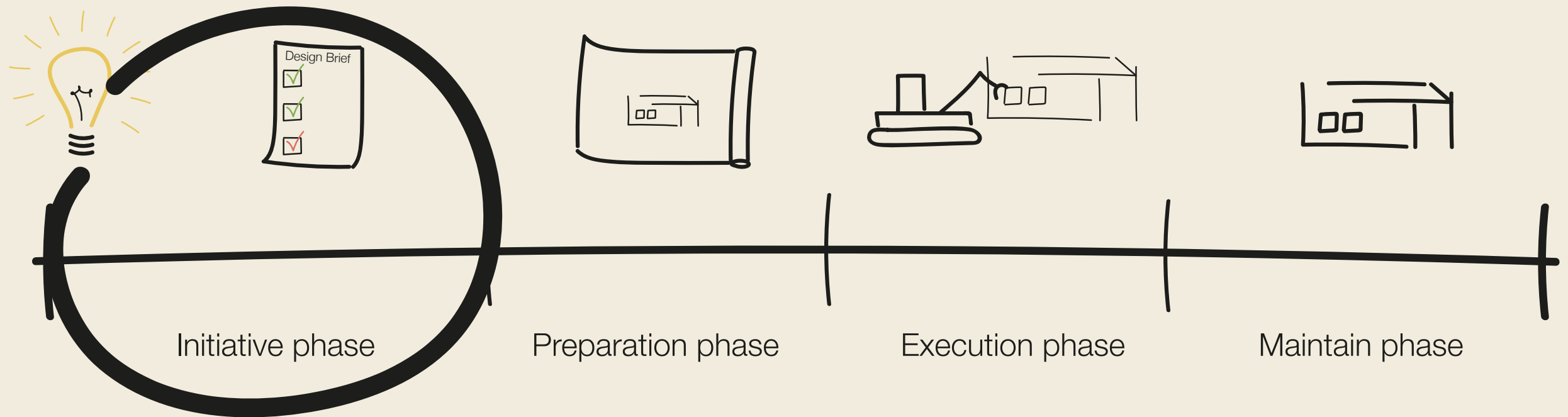


Research Question

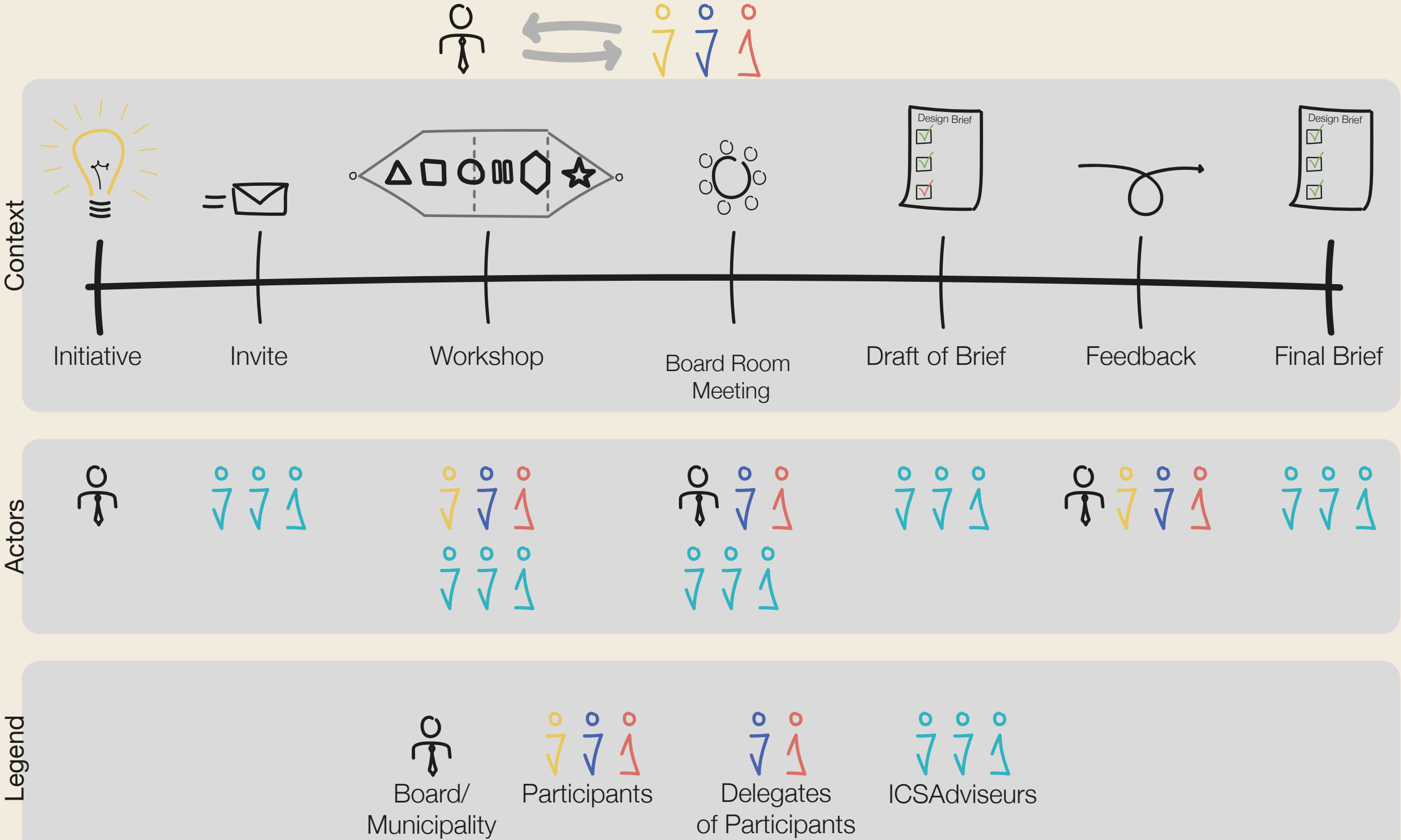
How to **create a workshop** that
engages end-users of schools
in developing a **circular school building**?



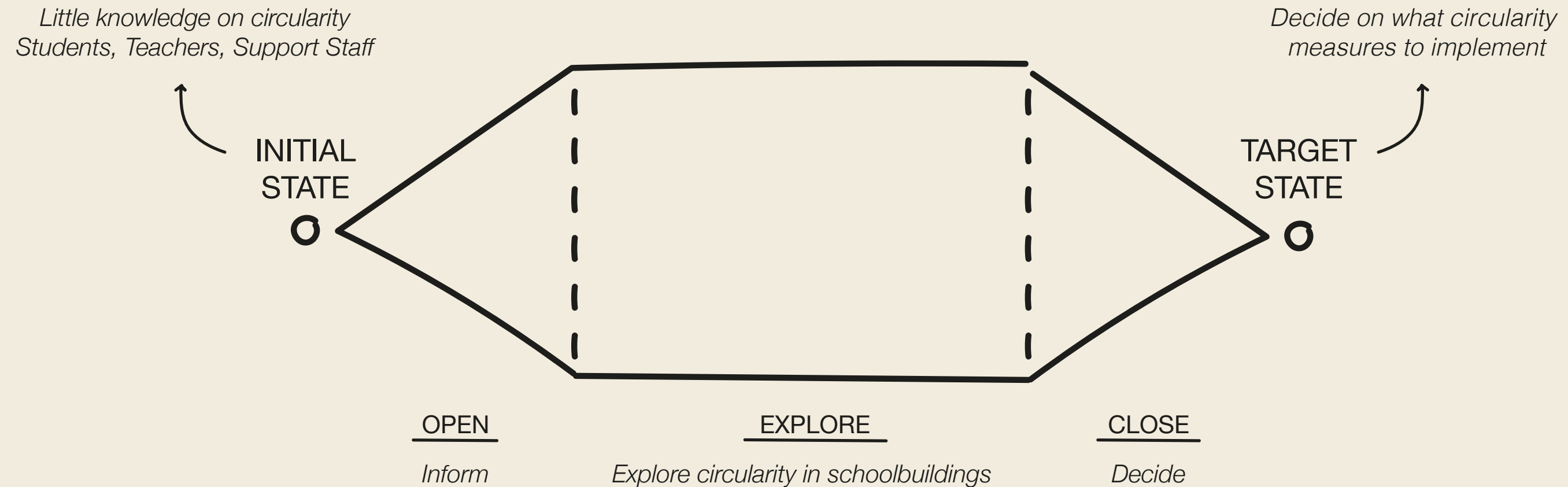
Workshop Context



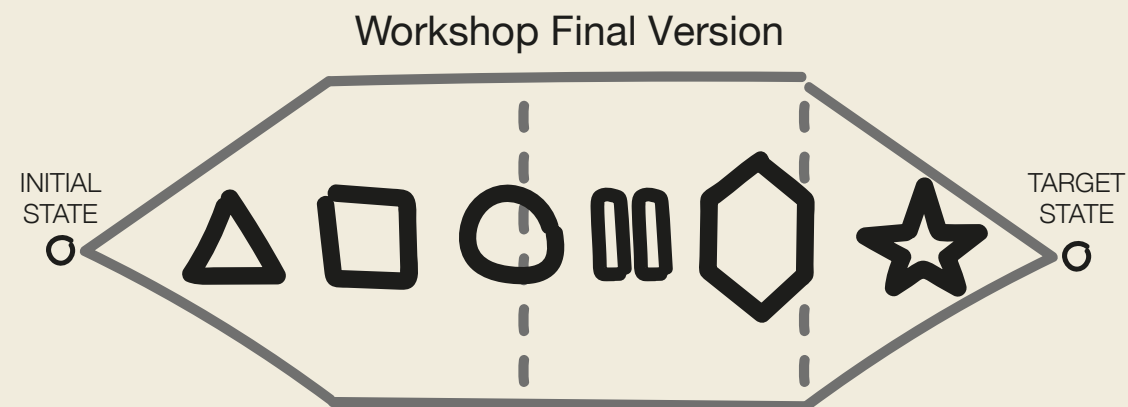
Workshop Context

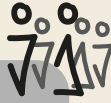
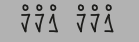
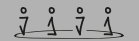
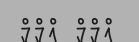


Workshop Design



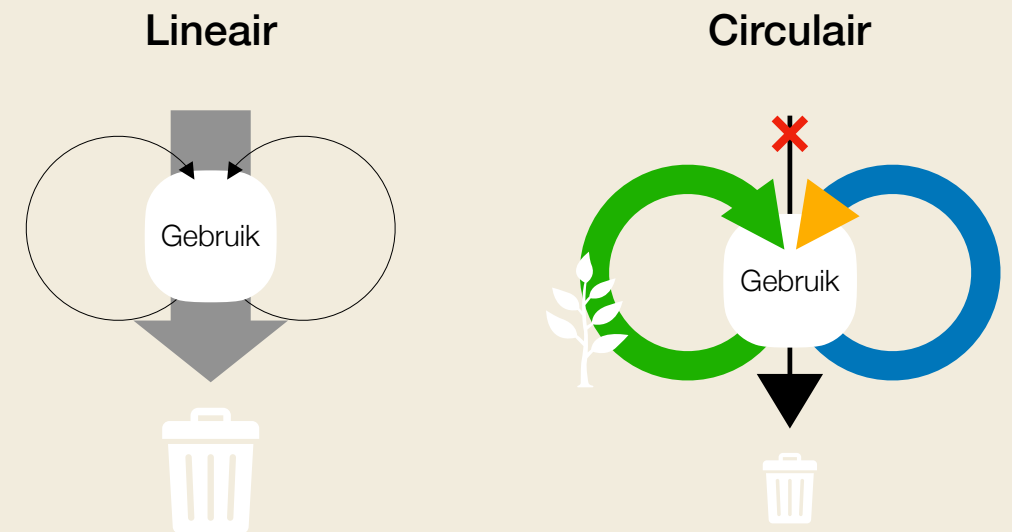
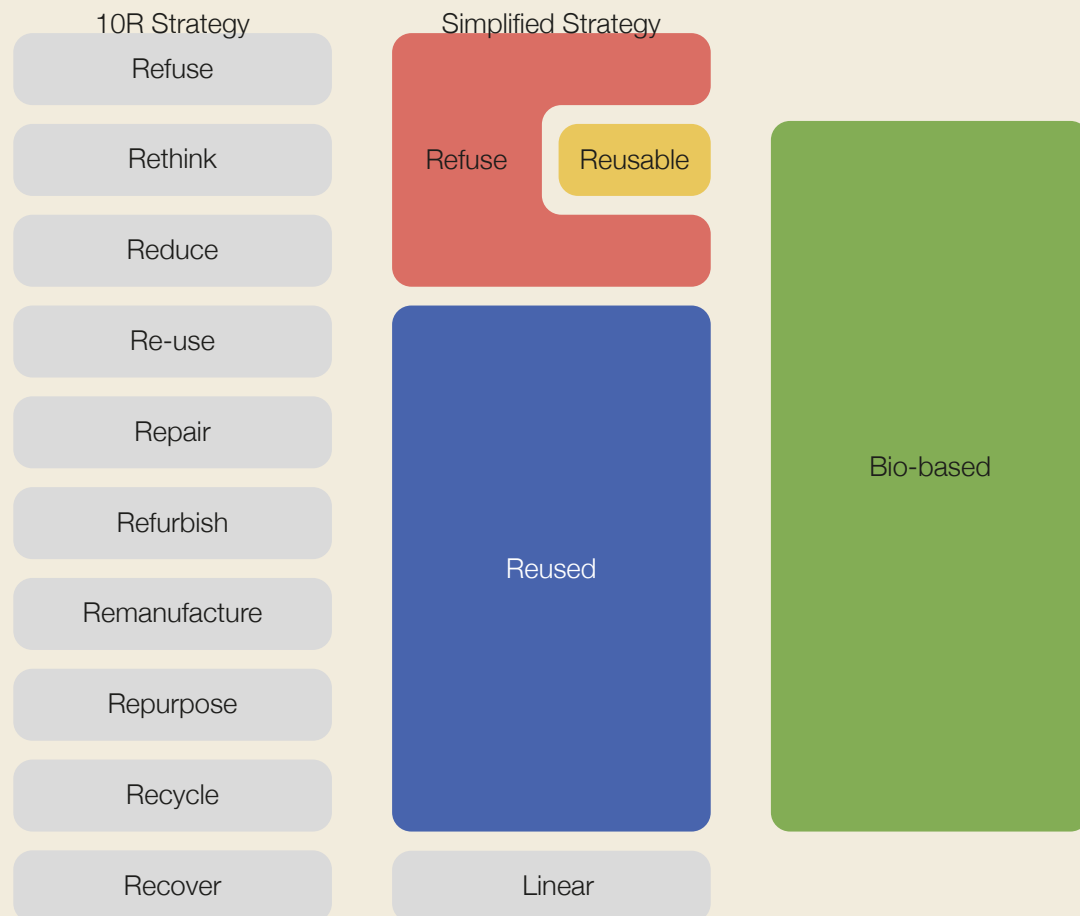
Workshop Design



		Number of participants 	Interaction 	Activity-level 	Duration 
	Invulpuzzel	4 - 20 part.			15 min.
	Post-it Brainstorm	1 - 50 part.			20 min.
	Gebouwtour	4 - 20 part.			20 min.
	Break				10 min.
	Moodboard	1-10 part.			30 min.
	Dot voting	> 3 part.			15 min.

Workshop Design

Inform

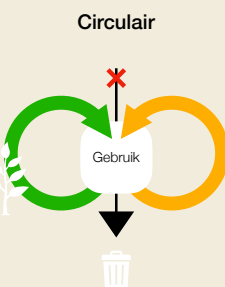
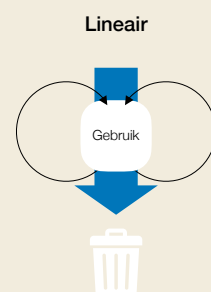




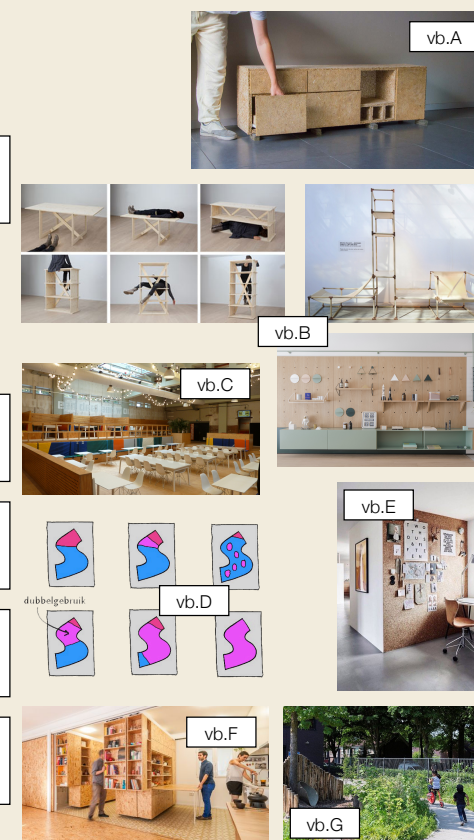
Workshop Design

Inform

Invulpuzzel



Materiaalgebruik:	Definitie:	Spullen / Meubels	Indeling / Plattegrond	Locatie & Buitenruimte
Eenmalig gebruik	Gebruik van materialen of elementen die niet (gemakkelijk) opnieuw gebruikt kunnen worden en daardoor afval worden.	Op maat gemaakte meubels	Gebruik van betonnen / bakstenen muren als scheiding tussen ruimtes	Locatiegebonden speeltoestel
Voorkomen / Verminderen	Vooraf bedenken of het materiaal of element écht nodig is zodat er geen overbodige productie plaatsvindt.	Geen meubels kopen die niet nodig zijn	Geen overbodig ruimtegebruik (vb.D)	Geen extra faciliteiten op het schoolplein
Bio-based	Gebruik van hernieuwbare materialen die natuurlijk afbreekbaar zijn, waardoor geen afval ontstaat.	Kast van compost-board (vb.A)	Scheidingswanden van natuurlijke materialen (vb.E)	Speeltoestel van hout en natuur-inclusief schoolplein (vb.G)
Flexibel	Nieuwe materialen of elementen die gemaakt worden zodat ze gemakkelijk opnieuw gebruikt kunnen worden in de toekomst.	Modulaire meubels (vb.B)	Verplaatsbare wanden of modulaire wanden (vb.F)	Modulair speeltoestel
Hergebruikt	Materialen of elementen die al in gebruik zijn en opnieuw gebruikt kunnen worden, al dan niet met een andere functie.	Opgeknapte meubels (vb.C)	Scheidingswanden van hergebruikte materialen	Tegels van het oude schoolplein





Workshop Design

Inform

Post-it Brainstorm

Circulariteit

Wat is circulariteit (in gebouwen)?

Circulariteit

Wat is circulariteit (in gebouwen)?

Circulariteit

Waarom is circulariteit (in gebouwen) belangrijk of nodig?



Workshop Design

Inform

Post-it Brainstorm

Wat is circulariteit (in gebouwen)?

Waarom een circulair schoolgebouw?

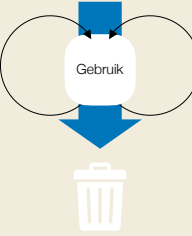
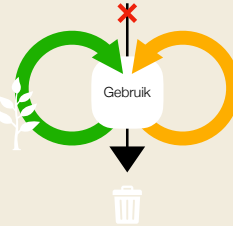
Waarom is circulariteit (in gebouwen)
belangrijk of nodig?



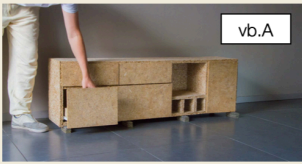
Workshop Design

Inform / Explore

Invulpuzzel

Lineair	Materiaalgebruik:	Definitie:	 Spullen / Meubels
	Eenmalig gebruik	Gebruik van materialen of elementen die niet (gemakkelijk) opnieuw gebruikt kunnen worden en daardoor afval worden.	
	Voorkomen / Verminderen	Vooraf bedenken of het materiaal of element écht nodig is zodat er geen overbodige productie plaatsvindt.	
	Bio-based	Gebruik van hernieuwbare materialen die natuurlijk afbreekbaar zijn, waardoor geen afval ontstaat.	
	Flexibel	Nieuwe materialen of elementen die gemaakt worden zodat ze gemakkelijk opnieuw gebruikt kunnen worden in de toekomst.	
	Hergebruikt	Materialen of elementen die al in gebruik zijn en opnieuw gebruikt kunnen worden, al dan niet met een andere functie.	

Invulpuzzel

 Indeling / Plattegrond	 Locatie & Buitenruimte
	 vb.A
	 vb.B
	 vb.C
	 vb.D
	 vb.E
	 vb.F
	 vb.G



Workshop Design

Explore

Moodboards



Spullen / Meubels



Indeling / Plattegrond



Locatie & Buitenruimte



Workshop Design

Decide

Moodboards



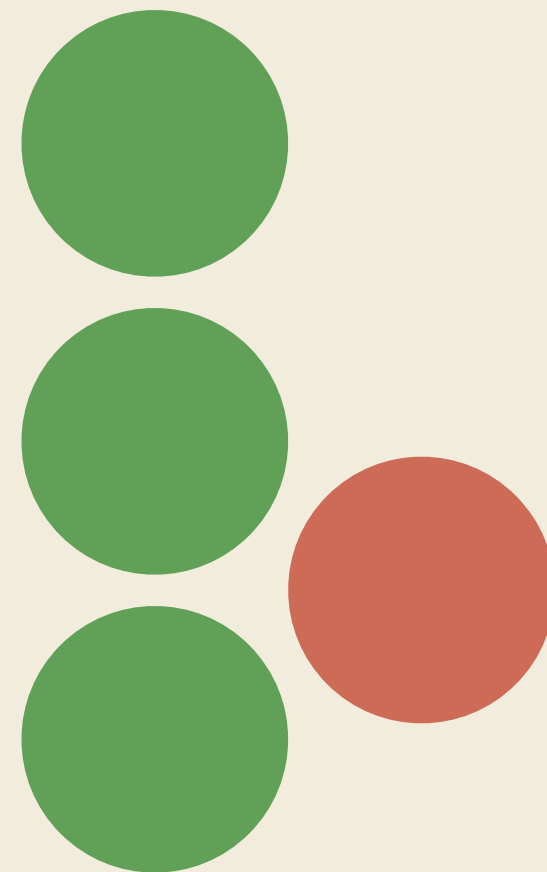
Spullen / Meubels



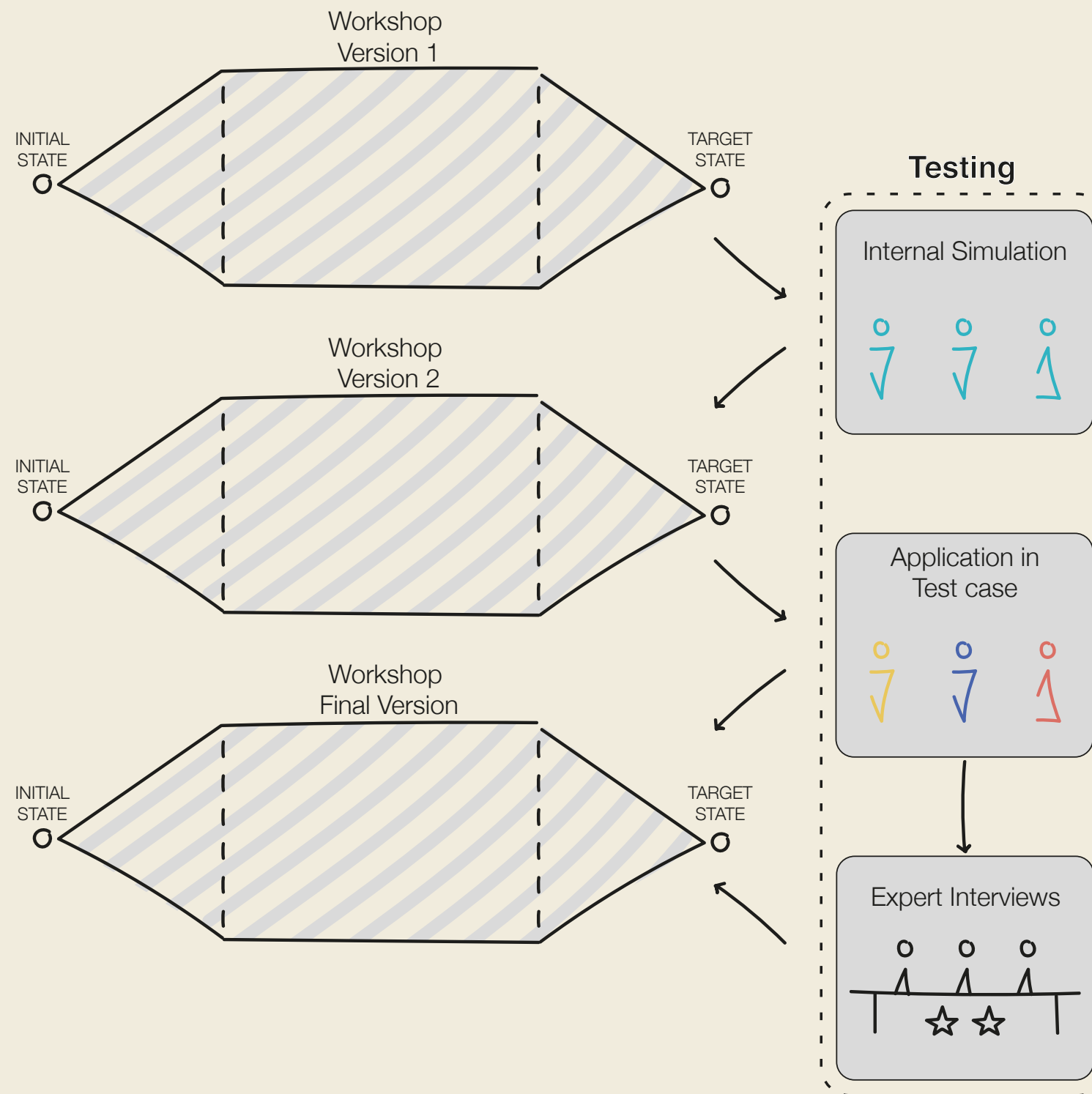
Indeling / Plattegrond



Locatie & Buitenruimte



Timeline



Research Question

How to create a workshop that
engages end-users of schools
in developing a circular school building?



Engagement

Engagement

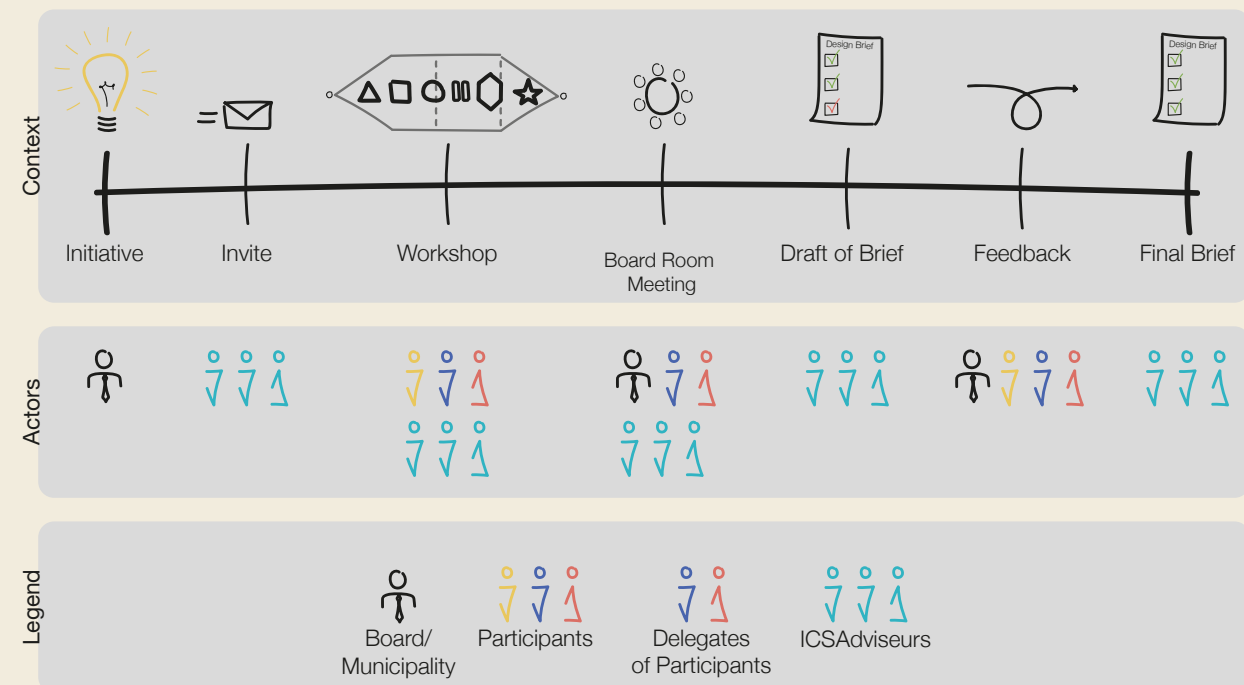
2-way flow of information

Inclusive
Diversity



Deliberate
Time
Resources

Influential
Concrete
Evaluating



Conclusion

Engagement

2-way flow of information

Inclusive

Diversity



Deliberate

Time

Resources



Influential

Concrete

Evaluating

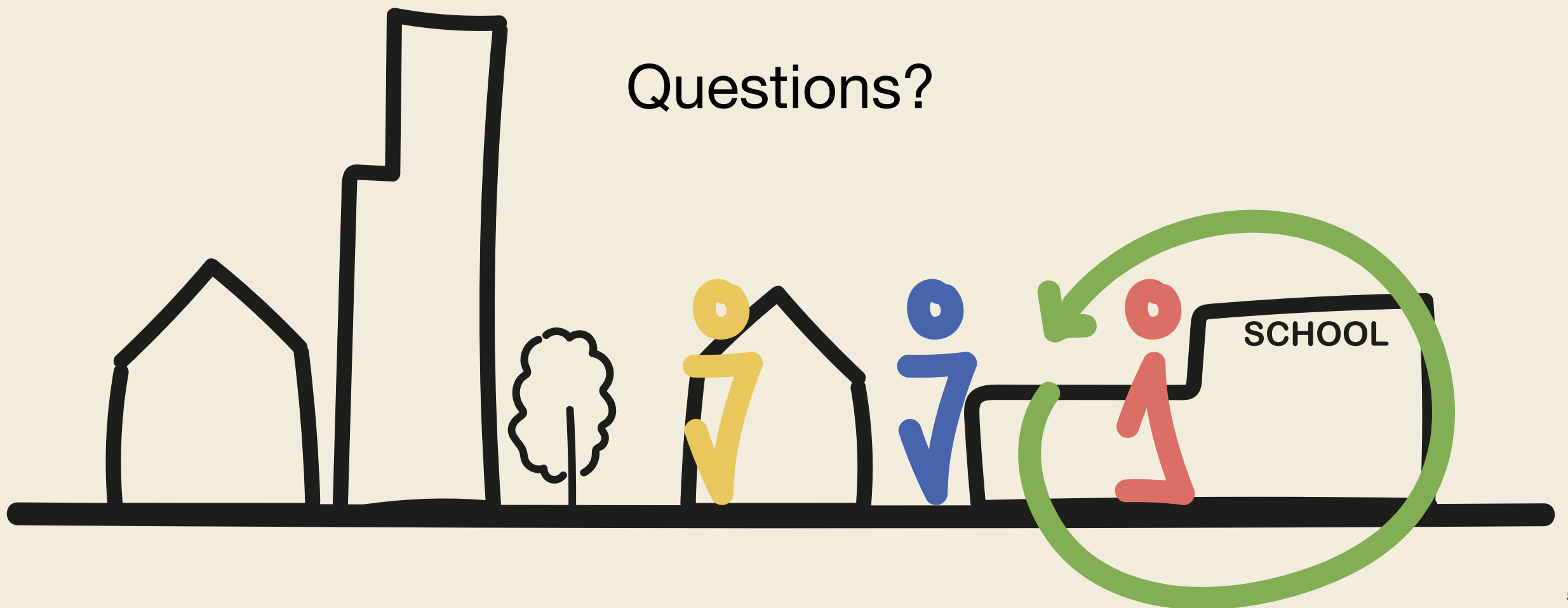


Therefore, this workshop engages end-users to develop a circular school building.



Thank you!

Questions?



Extra Slides

Engagement Method

Methods

Methods	Kaikittipoom (2019)	Wilcox (1994)	Nevmerzhitskaya (2020)	Latortue et al. (2015)	Amenta et al. (2019)
Action Planning		Decide on next step			
Brainstorming		Develop options			
Cost/Benefit Analysis		Make choices			
Design Challenge			Receive ideas & proposals		
In-depth Interviews			Empathize with users		
(Informal / Formal) Meeting	Inform on data or process			Find customers Register project candidates <i>Collective design meetings</i> Individual design meetings	
Information Giving		Start the process			
Mock-up Testing			Gather feedback		
Nominal Group Technique		Develop options			
Observation / Shadowing			Empathize with users		
Open Innovation Camp			Develop concept Identify opportunities Co-create ideas		
Planning for Real		Simulation as overall technique			
Real-life Testing			Collect attitudes & feedback		
SAST		Decide on next step			
Stakeholder Analysis		Identify people to be involved			
Storyboard			Gather feedback		
Strategic Choice		Simulation as overall technique			
Surveys / Questionnaires		Develop options	Collect attitudes & feedback	Express desires about flat	Assess effectiveness of meetings Collect specific information
SWOT Analysis		Define position			
User Personas			User-understanding		
Workshop	Define core problem Design a building	Develop options Decide actions	Understand & Define challenges Develop concepts / solutions Prototyping the solution Evaluate prototype Collect preferences & attitudes		Build shared knowledge Develop solutions Identify challenges Define objectives of stakeholders
Note:			Most activities executed with end-users were done through a workshop		

First Workshop Test



First Workshop Feedback



Questionnaire



Workshop

Interaction

Activity-level

Duration

Applicability

Engagement

2-way flow of information

Inclusive

Diversity

Deliberate

Time

Resource

Influential

Concrete

Evaluating

First Workshop Feedback



Layout

Change order of the workshop forms

Content

Knowledge level

Examples

Facilitating

Clarify goal and expectation

Second Workshop Test



Second Workshop Feedback



Second Workshop Feedback



Layout

-

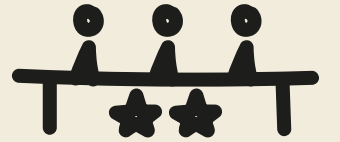
Content

More information in introduction
Terminology of puzzle

Facilitating

Workshop should be better integrated in workshop

Expert Interviews



Layout

Change order of the workshop forms

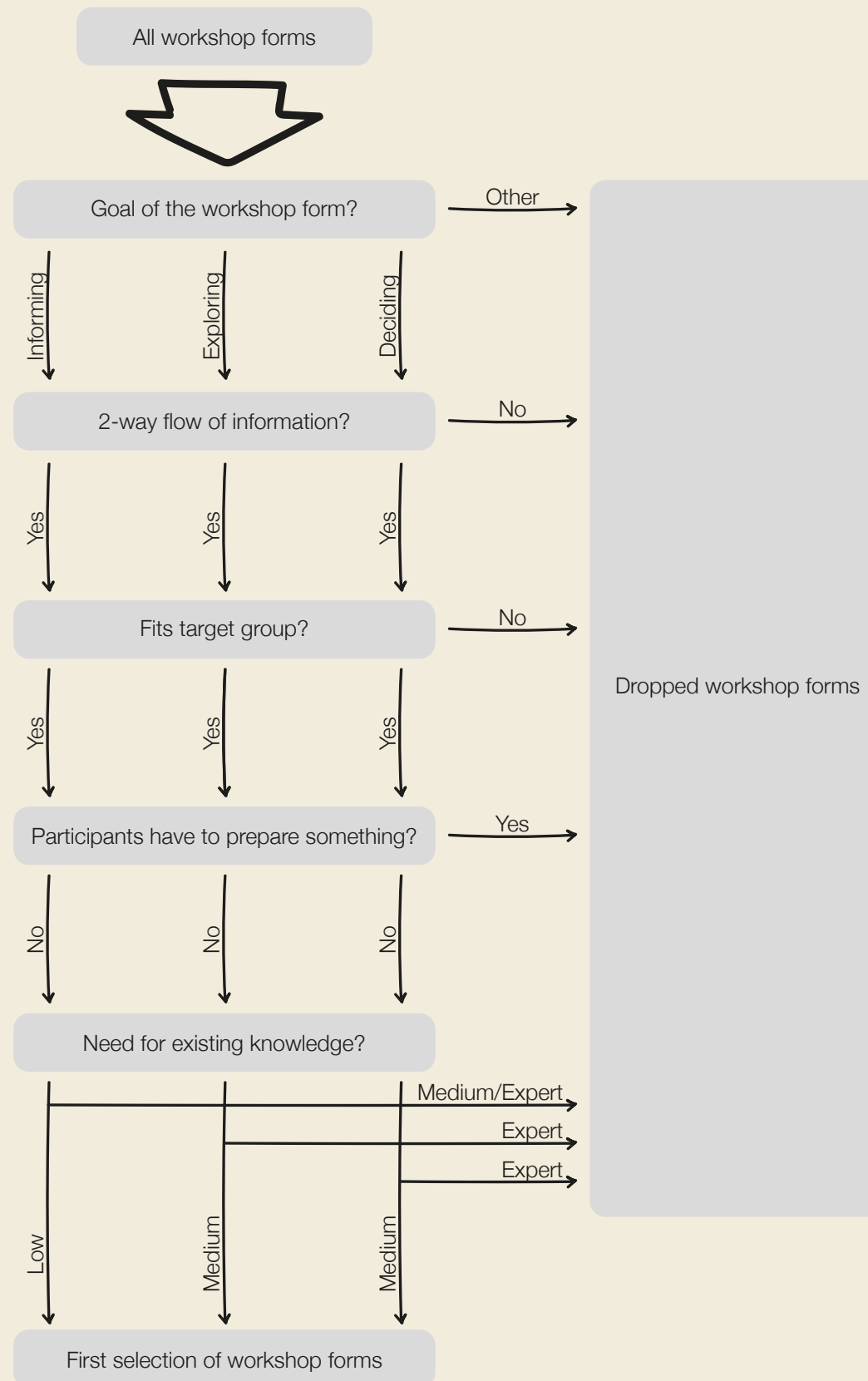
Content

Add informative introduction

Facilitating

-

Filter



First Selection

Informing

Show and tell
Visual glossary
Puzzel de tekst
Puzzel het model
Klantreis in beeld*

Exploring

Mindmap
Collage
Storyboard
Brainstorm
Brainwriting and -drawing
Post-up
Storyboard
Brainwriting
Spectrum mapping
Mood board
The world café
Diepgaande verkenning
Stillewanddiscussie
Placematdiscussie

Deciding

Dot voting
Red:Green cards
\$100 test
20/20 vision
Ik win als jij wint

Case

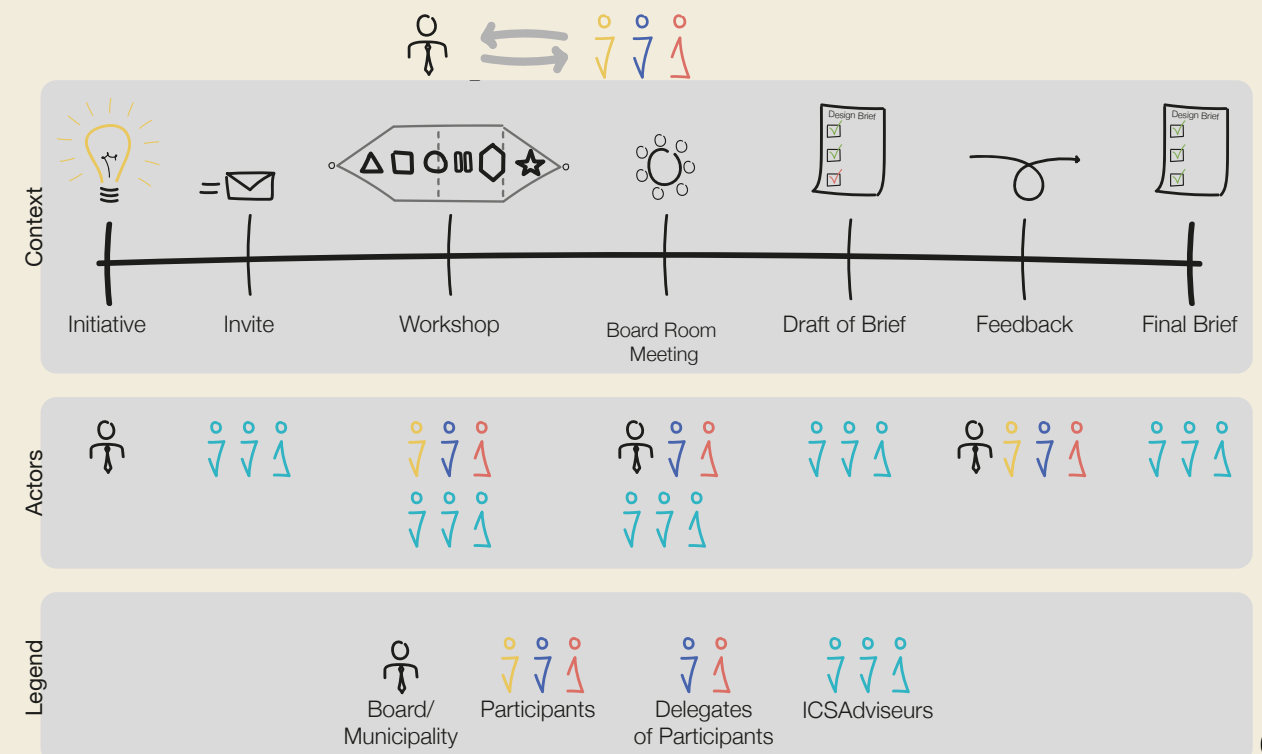
Type of School

Secondary School

Type of Development

Demolish - Rebuild

Context



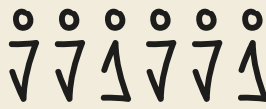
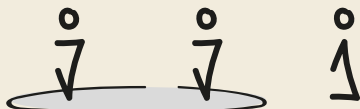
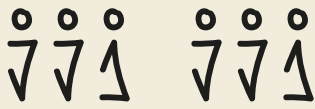
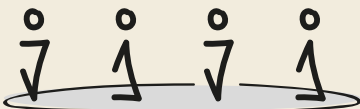
Outlines

Number of Participants

> 6 Participants

Interaction

Variety of



Activity-level

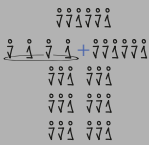
Variety of



Duration

2 Hours

Overview

Informing	Number of participants 	Interaction 	Activity-level 	Duration 
Show and tell Visual glossary Puzzel de tekst Puzzel het model Klantreis in beeld*	5 - 15 part. 2 - 10 part. 4 - 20 part. 4 - 20 part. 4 - 20 part.		Ø Ø ØØ ØØ ØØØ	20 - 45 min. 30 - 60 min. 15 min. 20 min. 60 - 90 min.
Exploring	**	**	**	**
Mindmap Collage Storyboard Brainstorm Brainwriting and -drawing Post-up Storyboard Brainwriting Spectrum mapping Mood board The world café Diepgaande verkenning Stillewanddiscussie Placematdiscussie	1 - 50 part. 8 - 20 part. 5 - 15 part. 5 - 15 part. 1 - 10 part. 24 - 30 part. 6 - 20 part. 6 - 20 part. 4 - 20 part.		Ø ØØ Ø Ø+ØØ ØØ Ø ØØ ØØ Ø	10 - 60 min. 45 - 90 min. 30 - 45 min. 30 - 60 min. 30 - 120 min. 90 min. 30 min. 20 min. 20 min.
Deciding				
Dot voting Red:Green cards \$100 test 20/20 vision Ik win als jij wint	> 3 part. > 20 part. 3 - 5 part. 5 - 10 part. 10 - 20 part.		ØØ Ø ØØ ØØ ØØ	Short Depends on the questions up to 90 min. 30 - 90 min. 60 min.

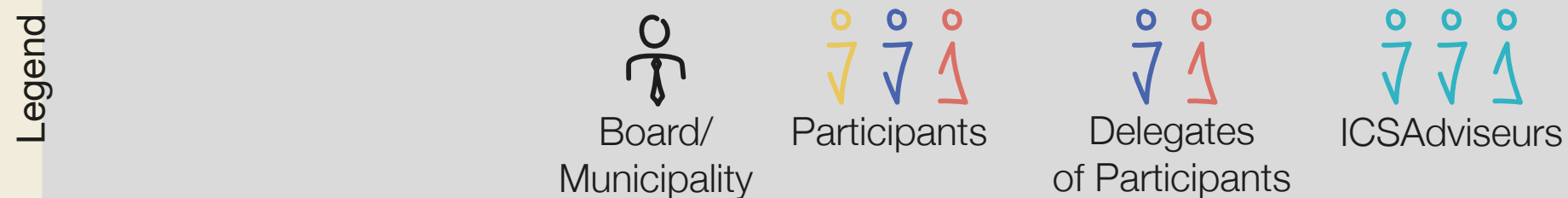
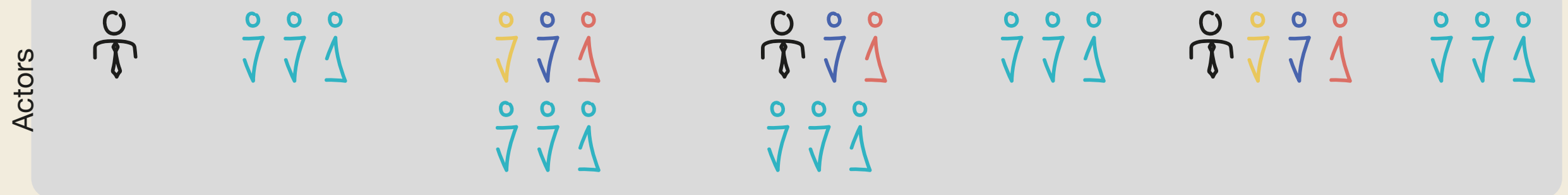
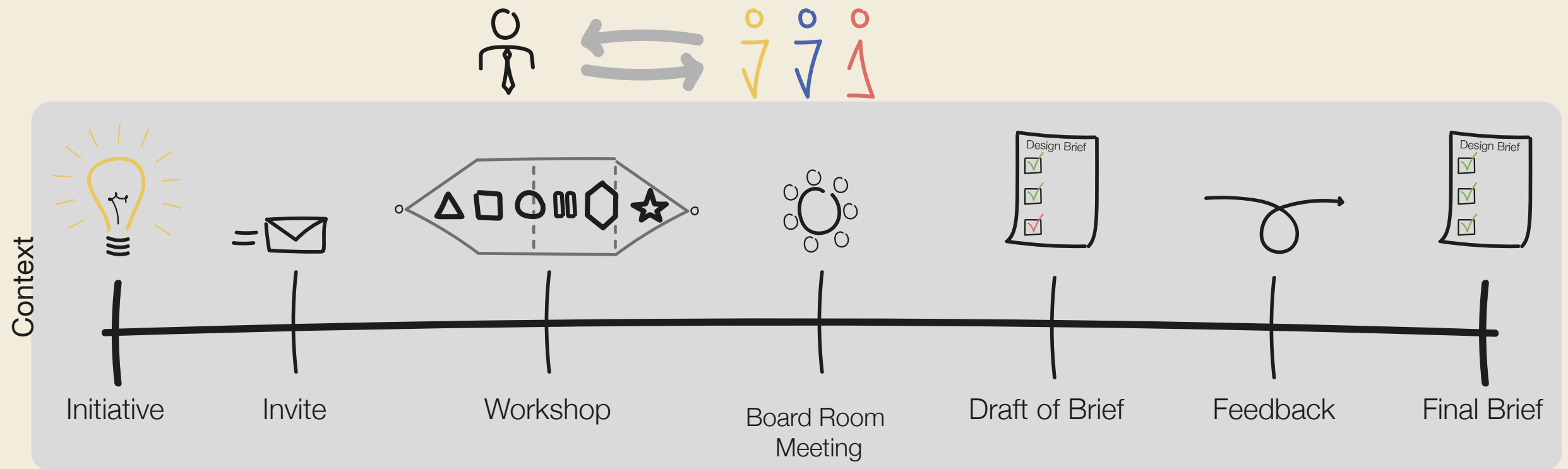
24 Workshop Forms

Final Selection

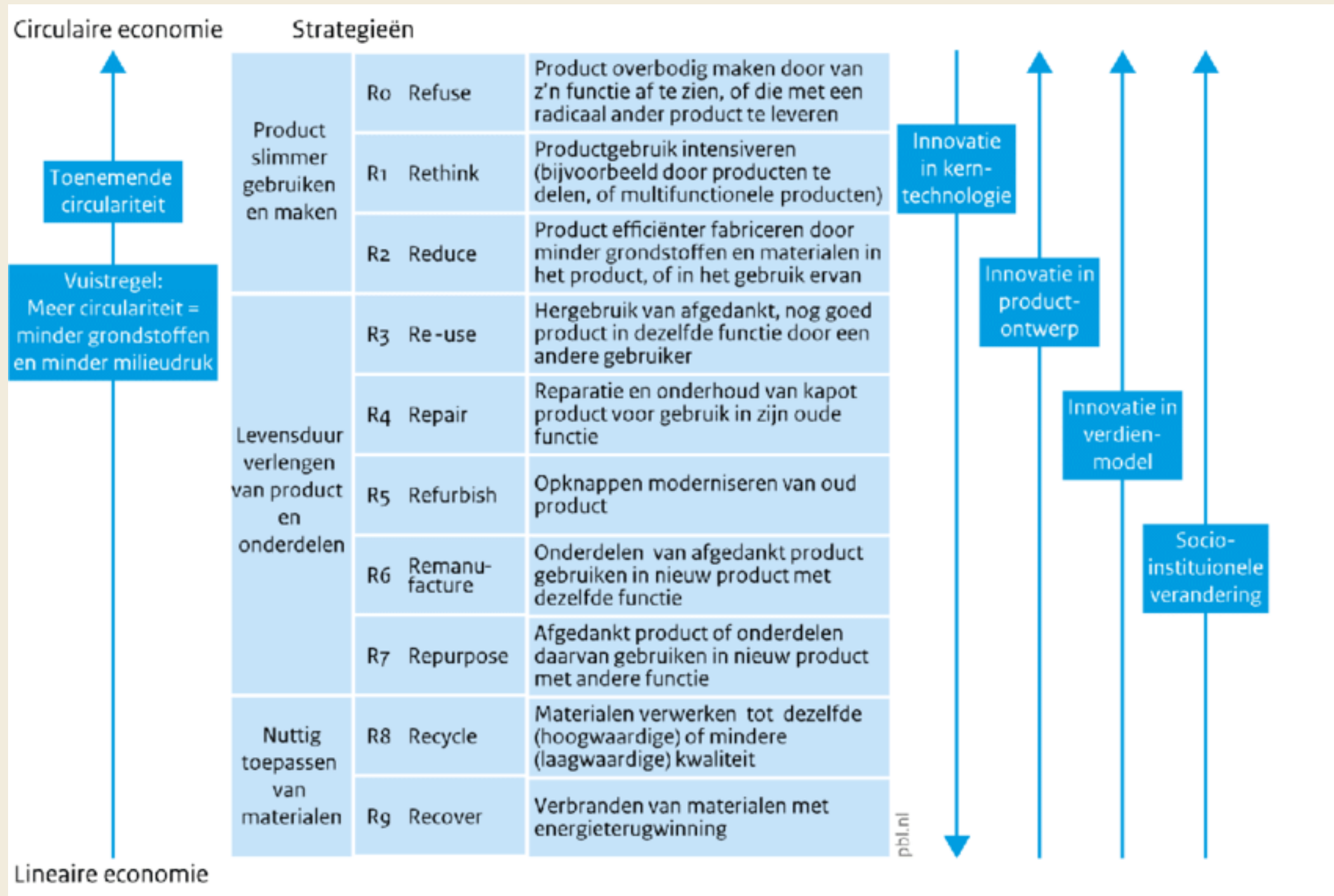
		Number of participants 	Interaction 	Activity-level 	Duration 
    	Informing Puzzel de tekst / het model Klantreis in beeld*	4 - 20 part. 4 - 20 part.			15 / 20 min. 60 - 90 min.
	Exploring Post-up Moodboard	1-50 part. 1-10 part.			10 - 60 min. 30 - 120 min.
	Deciding Dot voting	> 3 part.			Short

5 Workshop Forms

Context



10R model



Butterfly Diagram

