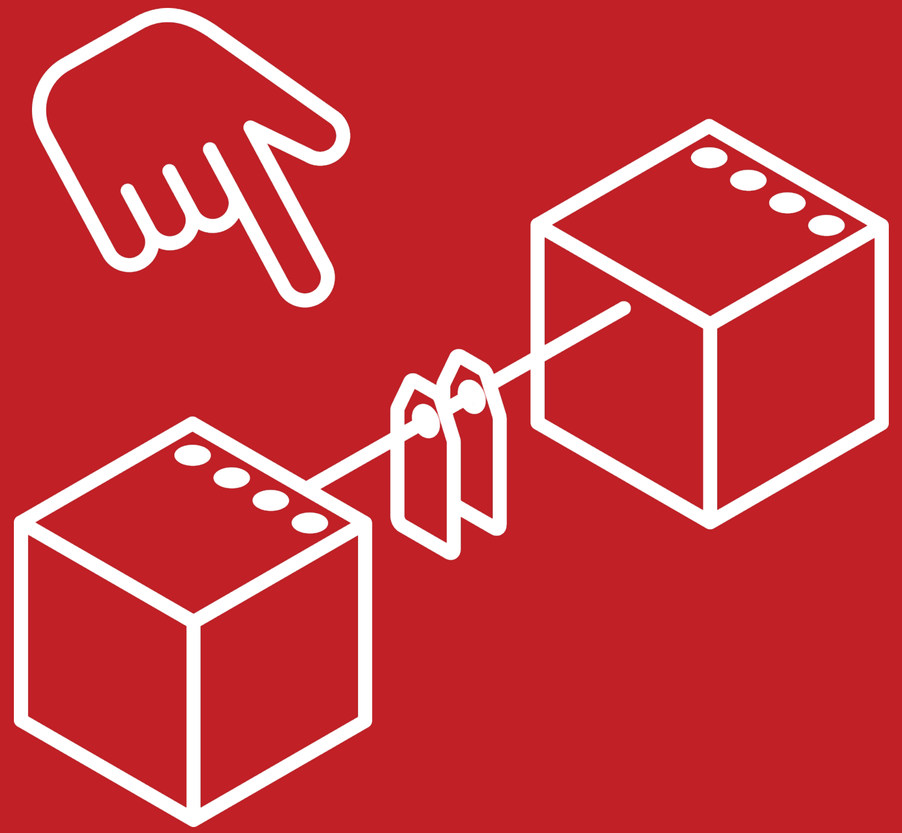
Assessing by doing

Using a hands-on tool to assess and evaluate interdisciplinarity



Interdisciplinary Learning and Teaching
Conference 7 April 2022
University of Birmingham

David Earle and Katrine Lindvig, CoNavigator

UNIVERSITY OF COPENHAGEN

CoNavigator

CoNavigator founding team

David Earle

Creative
Director

Katrine Lindvig

Assistant Professor
Higher Education Research

Line Hillersdal

Assistant Professor
Medical Anthropology

“Visualizations can be viewed as the permanent traces of gestures”

Tversky, B. 2010, Visualizing Thought,
Topics in Cognitive Science 3 (2011) 500

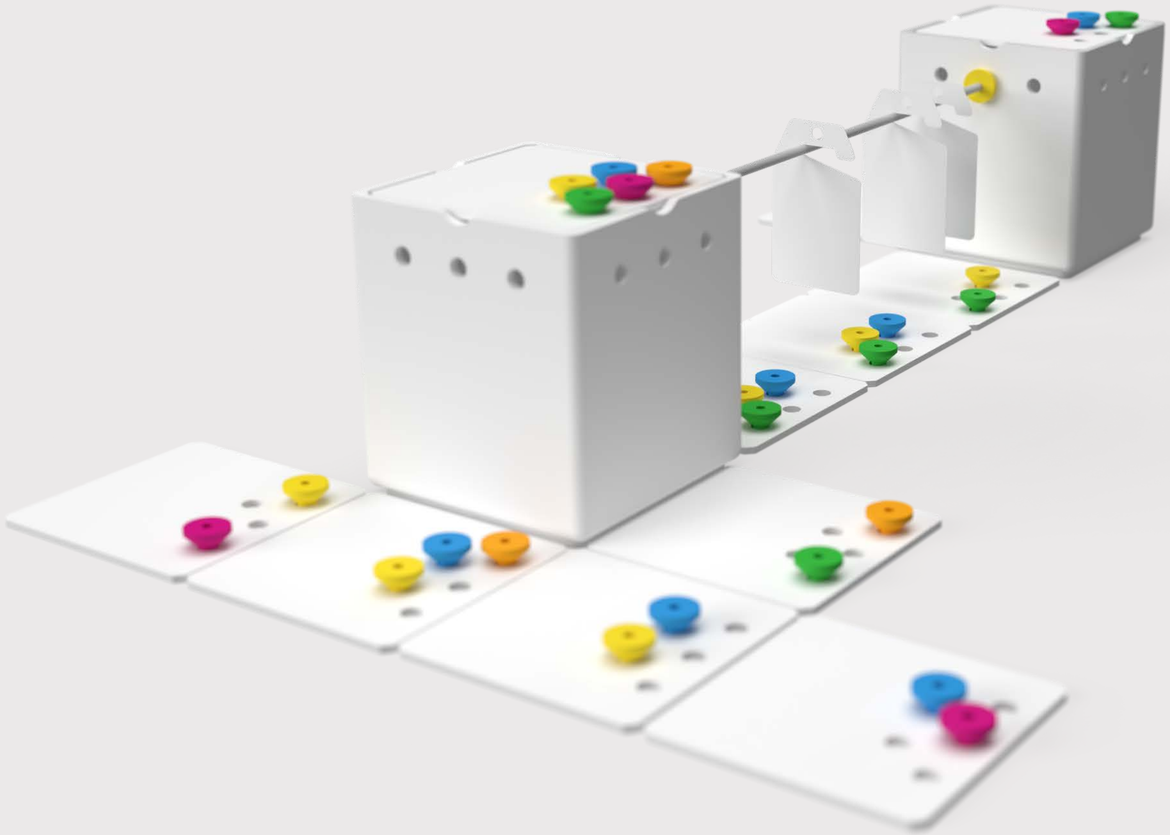
Cueva de las Manos (Cave of Hands), Argentina. Art dates 13,000 – 9,000 years ago.

L'ERREUR
TRY & ERROR
Essai-Erreur
TRUST & TRIAL
Osez !
Essayons.
Risk TAKING
Prise de Risque
Suivez votre Good vib'
Sol/mur où l'on peut écrire partout
papier en GRAND FORMAT
CREATIVE TIME SLOTS
Espace
Bienveillance
Common experience
Trust = time
un facilitateur de workshop
Problem clarification
process for idea formulation & innovation
Auto-censure
Des fruits & ogéatineux à disposition
Lieu Coucouning
Tapis - chaleur
CREVER L'ABCES
Qu'est-ce qui vous gratte ?
PAS DE JUGEMENT
Behaviour observation
Nature and "Street" time
des Couleurs douces & stimulantes
OPEN MIND
DIVERSITÉ
Diversity of people
Echange
INTELLIGENCE COLLECTIVE
Vrac à idées
IDEAS
Idées
OUT OF THE BOX
complémentarité

Poor Conditions
Staff
Culture
Conditions
Over Crowding
Drug Use
Lack of Water
Toilet
Sanitation
Violence
Isolation
Exercise
Meaningful Activity
Boredom

Boys/ Parents
Economics of hope
Issue of Social Status
Balancing Identity
Need to engage with boys and parents/carry in
Policy

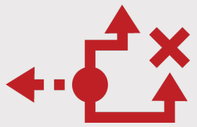
ISOLATION PHYSICAL
Poor conditions
CONDITIONS
Power Imbalances
CULTURE
OVER CROWDING
DIET
Lack of Water
TOILET SANITATION
SPREAD OF ILLNESS / DISEASE
Control of Bully in Gangs
Violence (actual + threat of)
Exercise
Lack of Resources
Sense of continuity with valued relationships going forward
HUMANS ARE SOCIAL BEINGS - NEED SUPPORT FOR ENCOURAGEMENT/ ADVICE/ MOTIVATION TO STAY WELL/ROUTINE
MENTAL HEALTH
DRUG TREATMENT SUPPORT
MENTAL HEALTH RESOURCES
Access to diagnosis & treatment
Social Inequality
MEDICAL CARE + PROVISION
Wider Stigma around mental health
Barriers due to language used
MEDICAL RESOURCES/ ACCESS TO MEDICINE
Psychology
DRUG USE
Isolation
LEARNT
Production Change
Activities are important to avoid boredom, thinking etc. But need to be meaningful.
Activities offer opportunity for connection with others and one's own sense of purpose/meaning
Meaningful ACTIVITIES
Constructive Experience
Need for Meaning
LACK OF STIMULATION CAN IMPACT ON Psychological WELLBEING/



Our goal: a universal, all-purpose collaboration tool for any group or team

CoNavigator

Current status: extensive use in academic, public and private sector settings since 2016 in four broad uses



Strategic planning

Economic & Social

Research Council, UK

College of Science and Engineering Research, Leicester, UK

University of KwaZulu-Natal,

South Africa

Exploration

Governing Obesity Summer School, University of Copenhagen

Undergraduate Course, University of Maryland, BC.

NSF & UMBC, Masters Programme

DFDS

Evaluation

NASA & National Science Foundation, USA

Leicester Institute for Advanced Studies

Problem Solving

Department of Criminology

University of Leicester

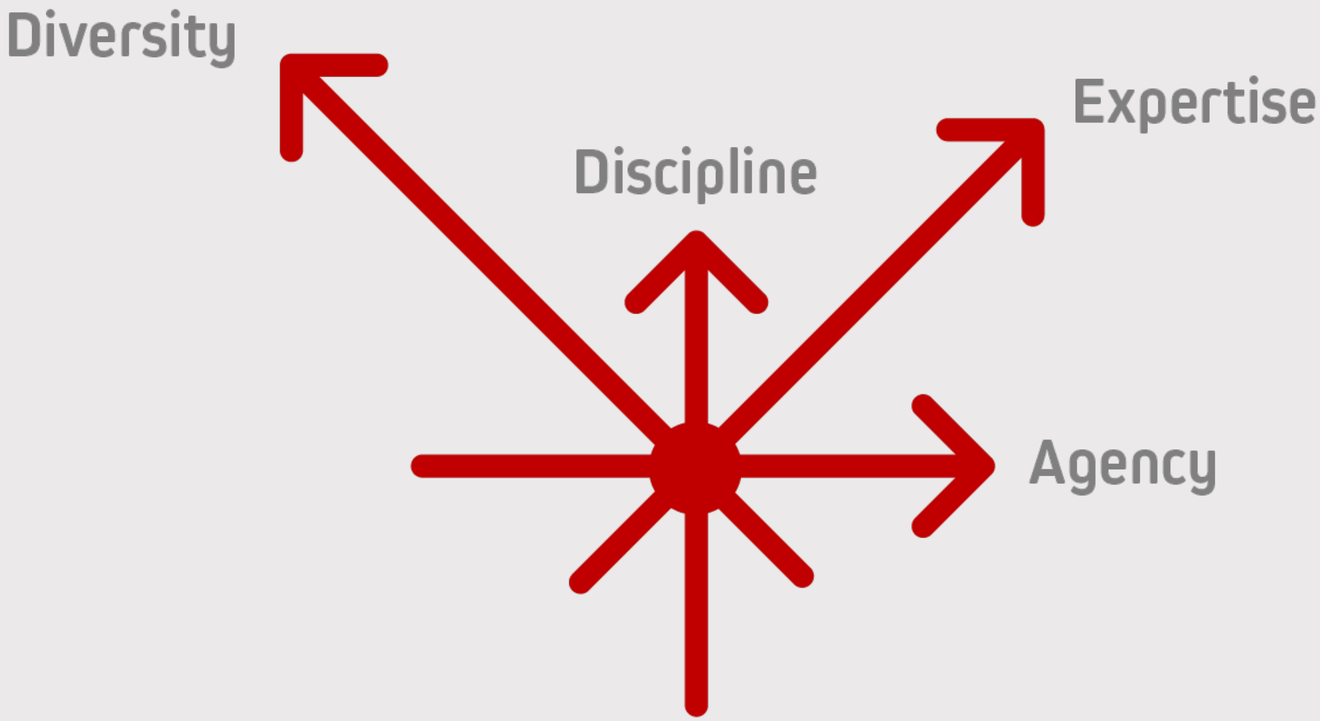
360 Possibles, Rennes France

Medical Museion, Copenhagen

DFDS

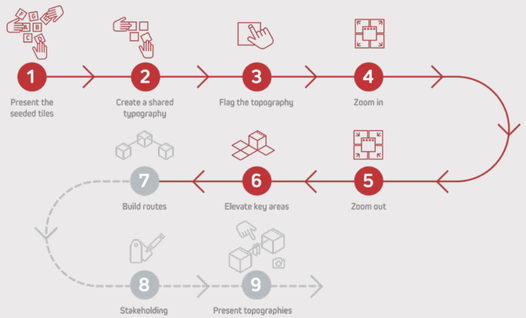
CoNavigator

The intersections of collaboration:

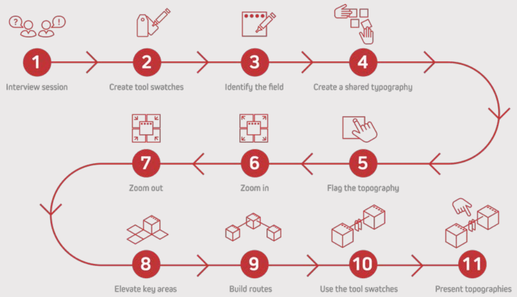


Component-based structure for configurable sessions according to time, participants, context and desired outcomes

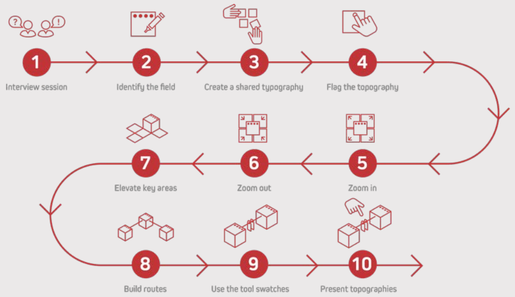
Multiple seeded strategic planning



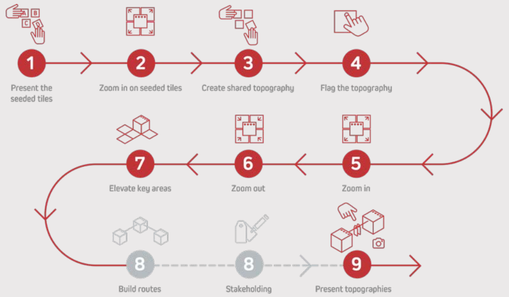
Introductory CoNavigation



Exploratory CoNavigation

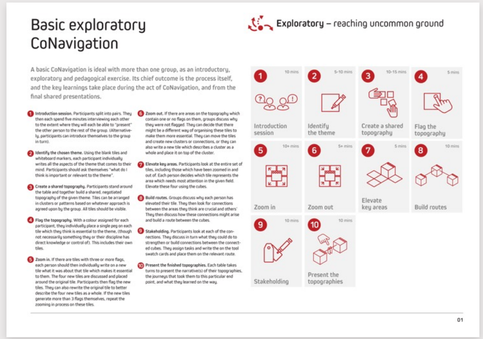


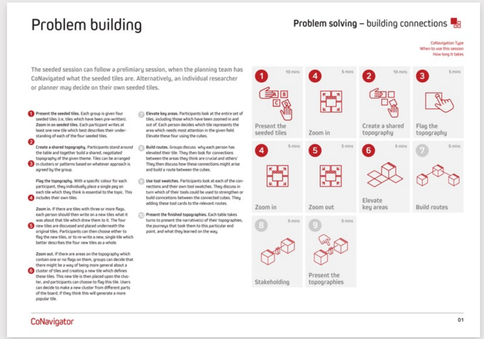
Seeded strategic planning

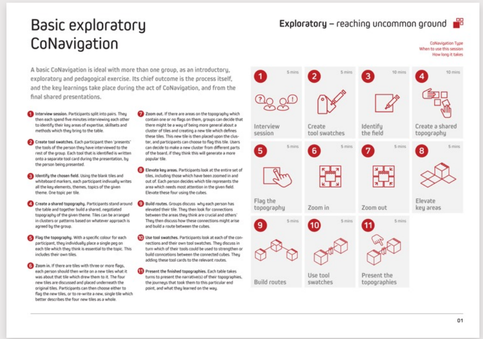


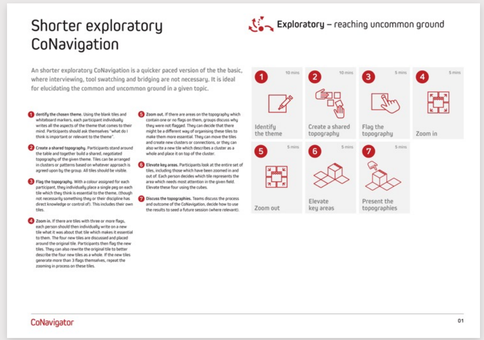
CoNavigator

New configurations can be designed in collaboration with users for specific workflows and desired outcomes.









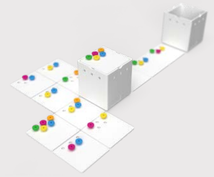
CoNavigator

CoNavigator session design: the three core stages

1: What is it?

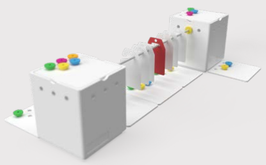
1	2	3	4	5	6	7
10 mins	5-10 mins	10-15 mins	5 mins	10+ mins	5+ mins	5 mins
Introduction Session	Identify the theme	Create a shared topography	Flag the topgraphy	Zoom in	Zoom out	Filter for agency

2: What ought it be?



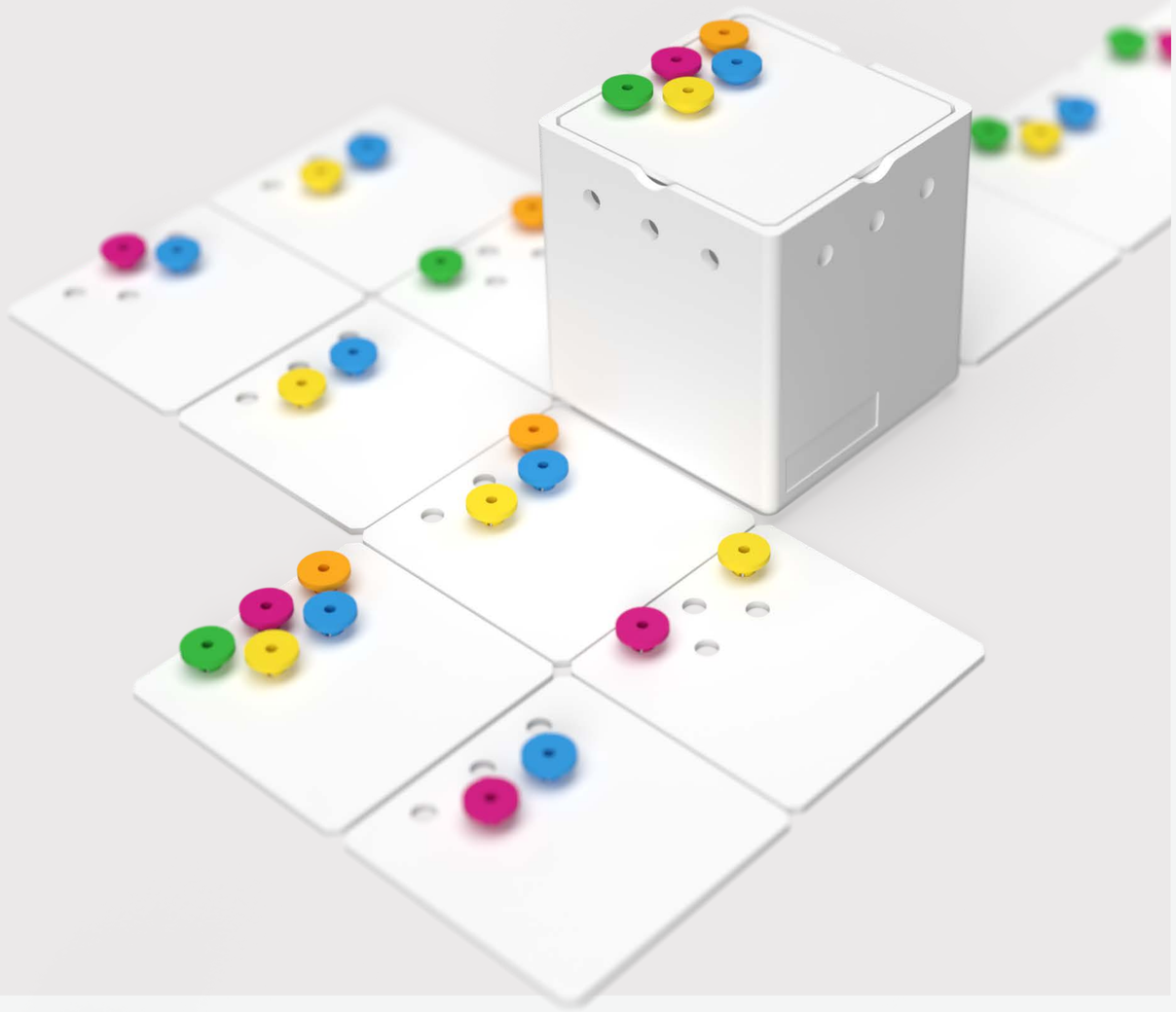
8	9
5 mins	10 mins
Elevate key areas	Build routes

3: What to do



10	11
10 mins	10 mins
Use the tool cards	Present the topographies

Combining egocentric and allocentric navigation

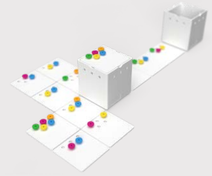


CoNavigator session design: individual versus collective

1: What is it?

1	2	3	4	5	6	7
10 mins	5-10 mins	10-15 mins	5 mins	10+ mins	5+ mins	5 mins
Introduction Session	Identify the theme	Create a shared topography	Flag the topgraphy	Zoom in	Zoom out	Filter for expertise
Collective	Individual	Collective	Individual	Individual	Collective	Individual

2: What ought it be?



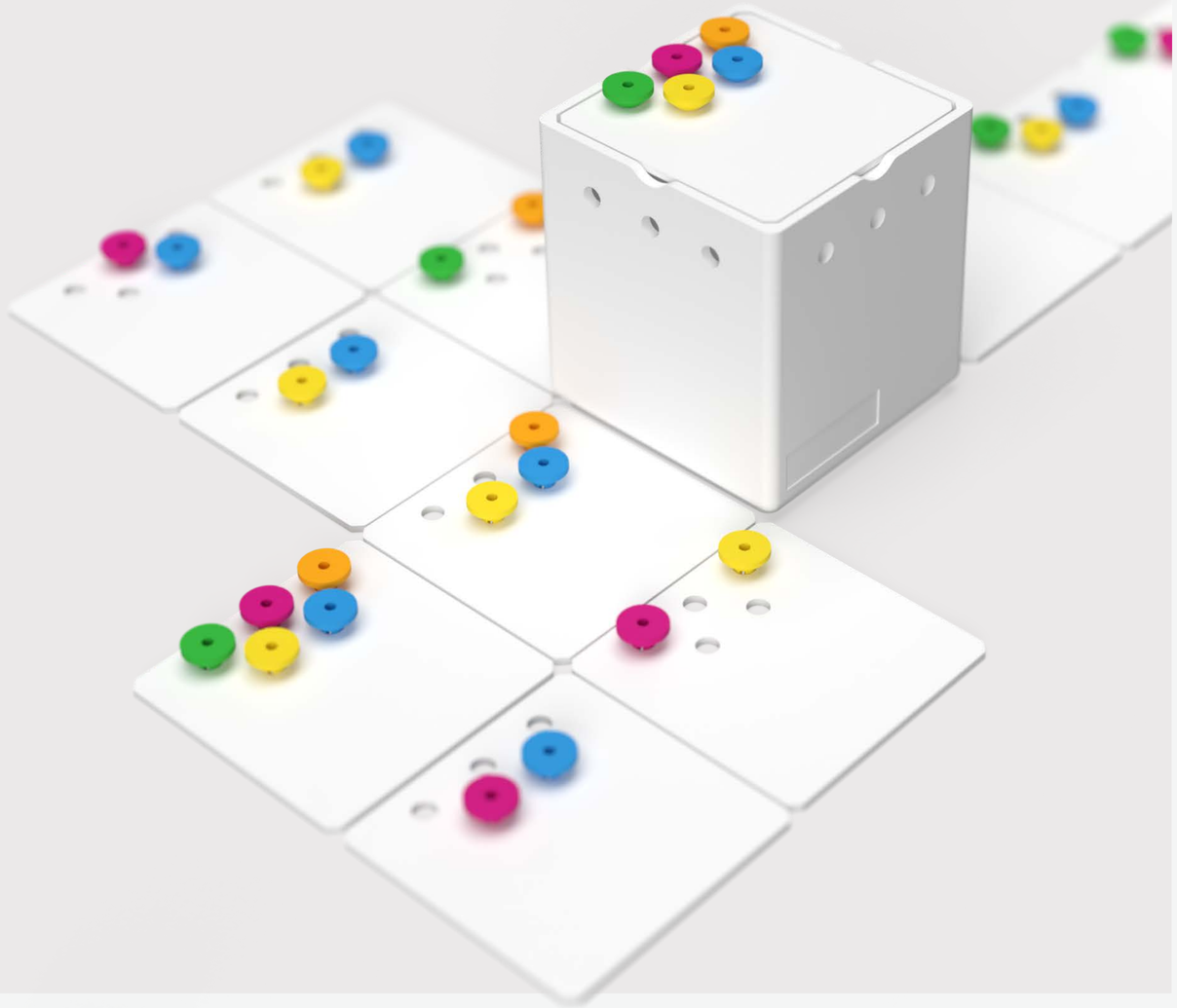
8	9
5 mins	10 mins
Elevate key areas	Build routes
Individual	Collective

3: What to do

10	11
10 mins	10 mins
Use the tool cards	Present the topographies
Individual	Collective

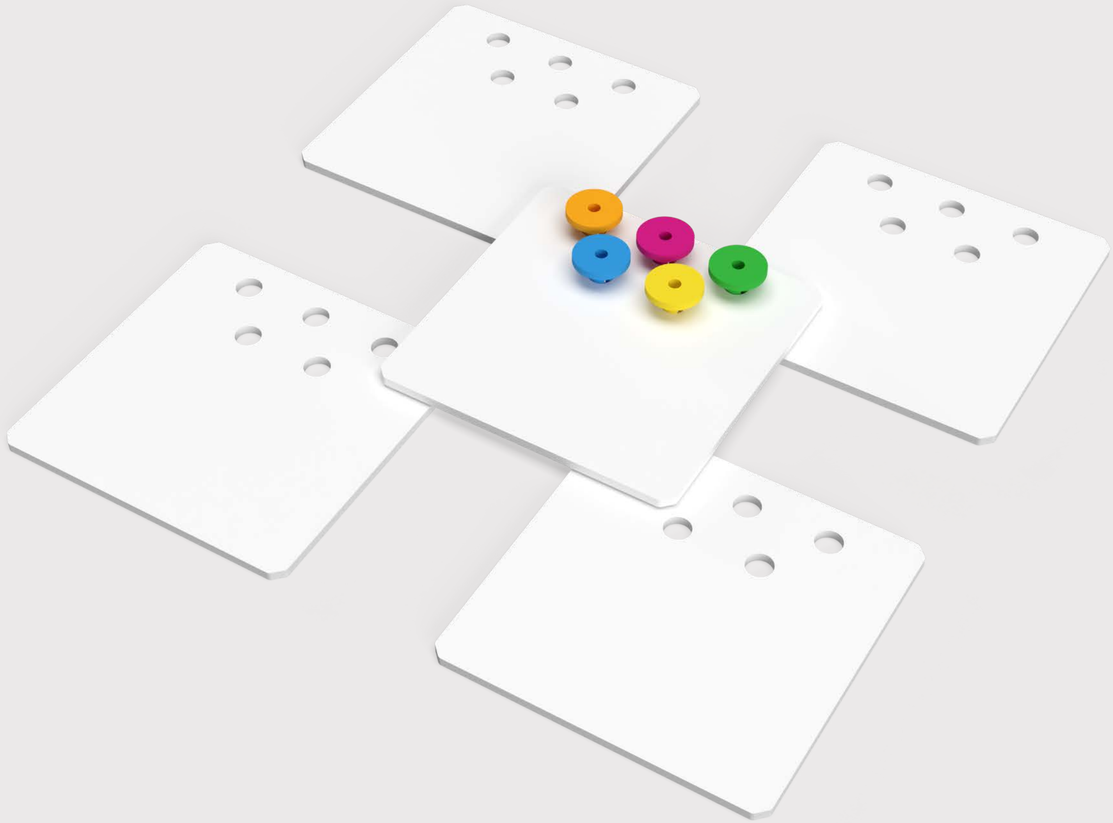
All individual steps are presented and typically discussed with the entire team.

All voices seen and heard.



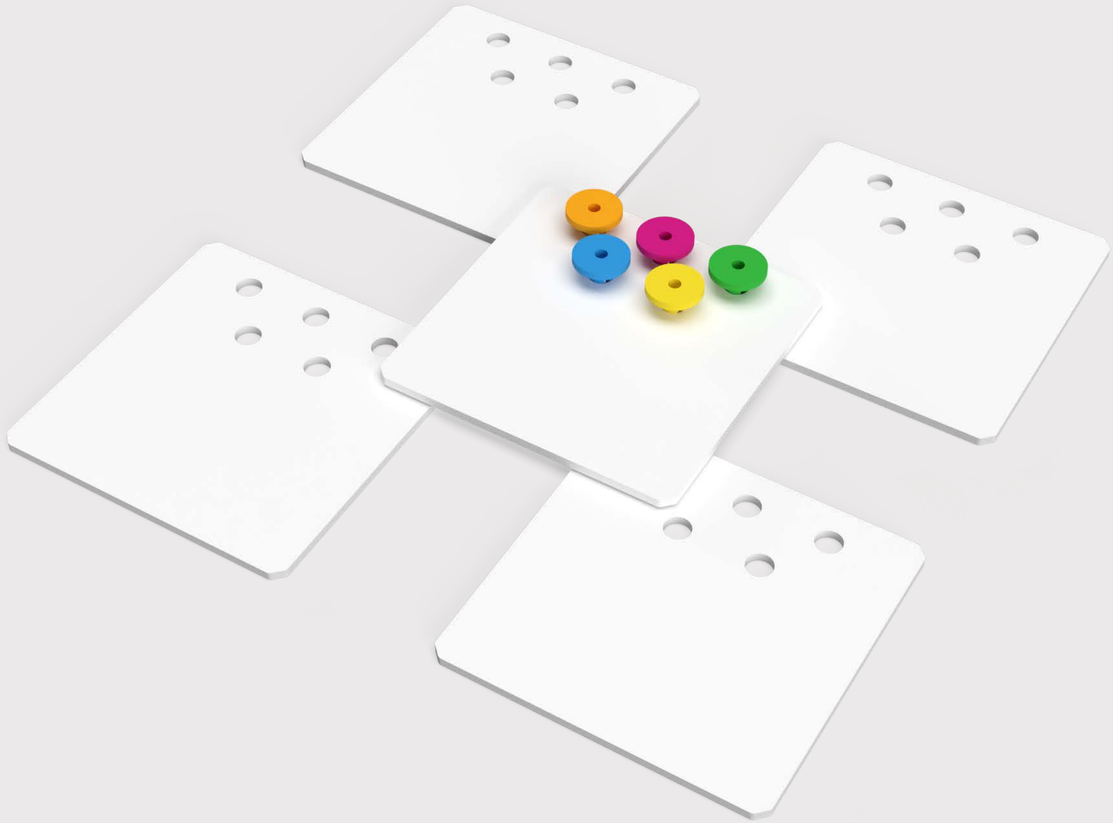
“ People can only agree about what they’re not really interested in.”

Bertrand Russell

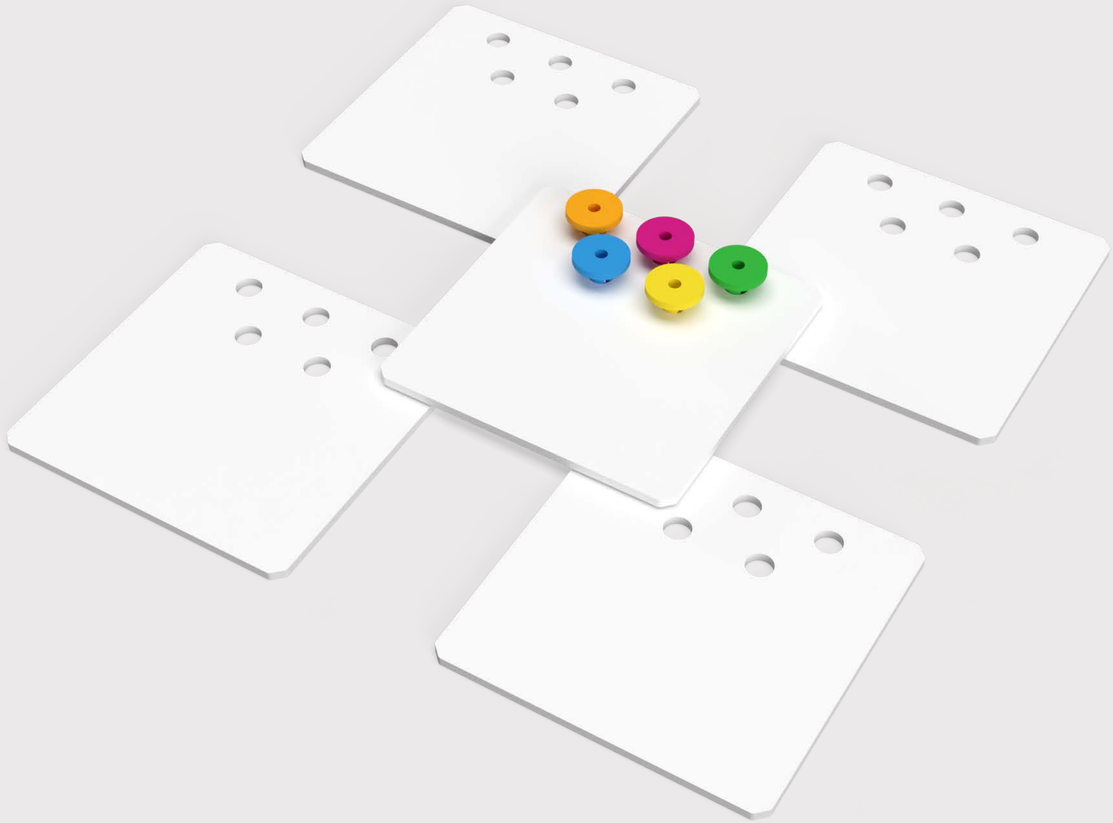


“ We demand rigidly defined areas of doubt and uncertainty.”

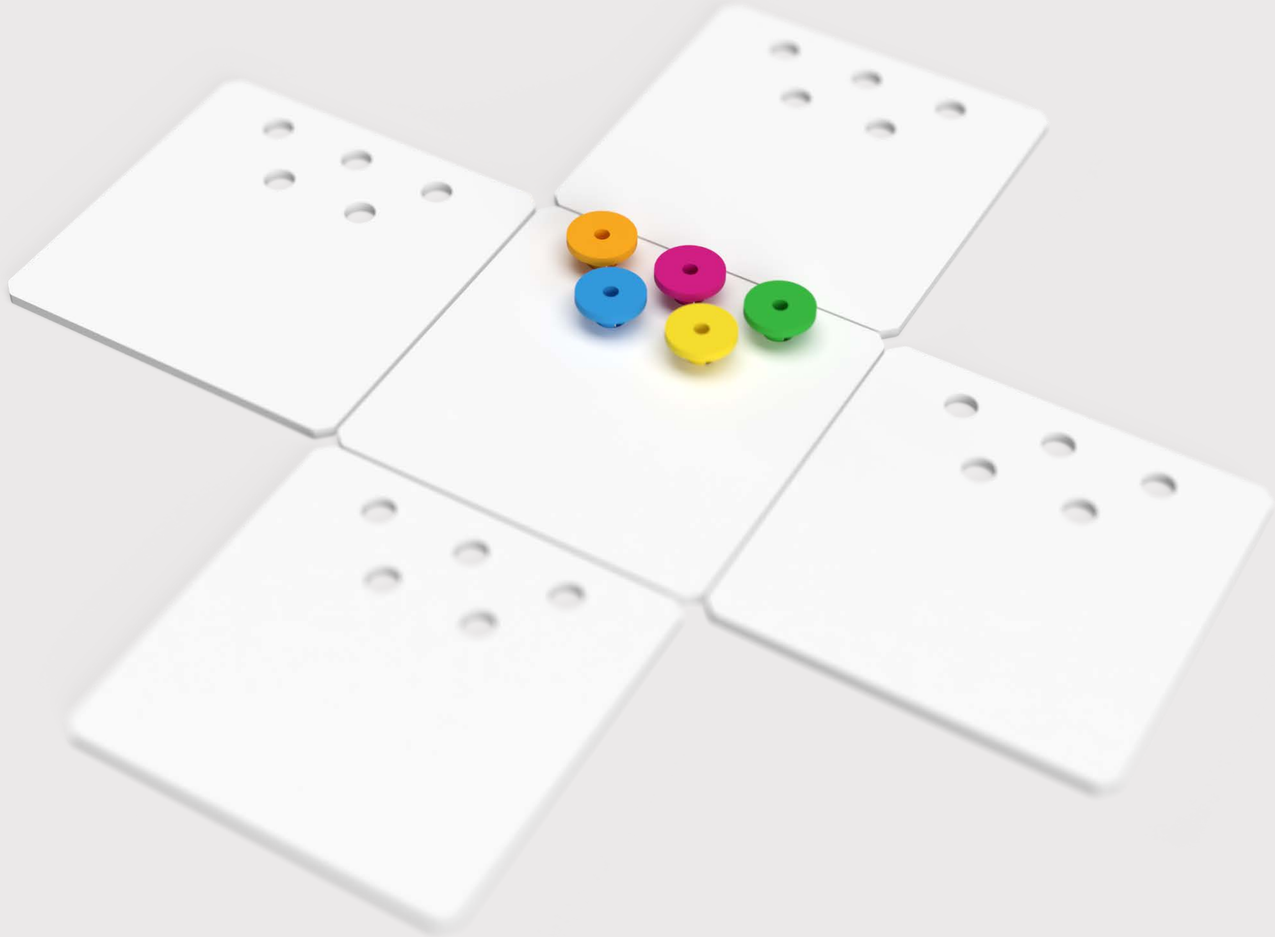
Douglas Adams



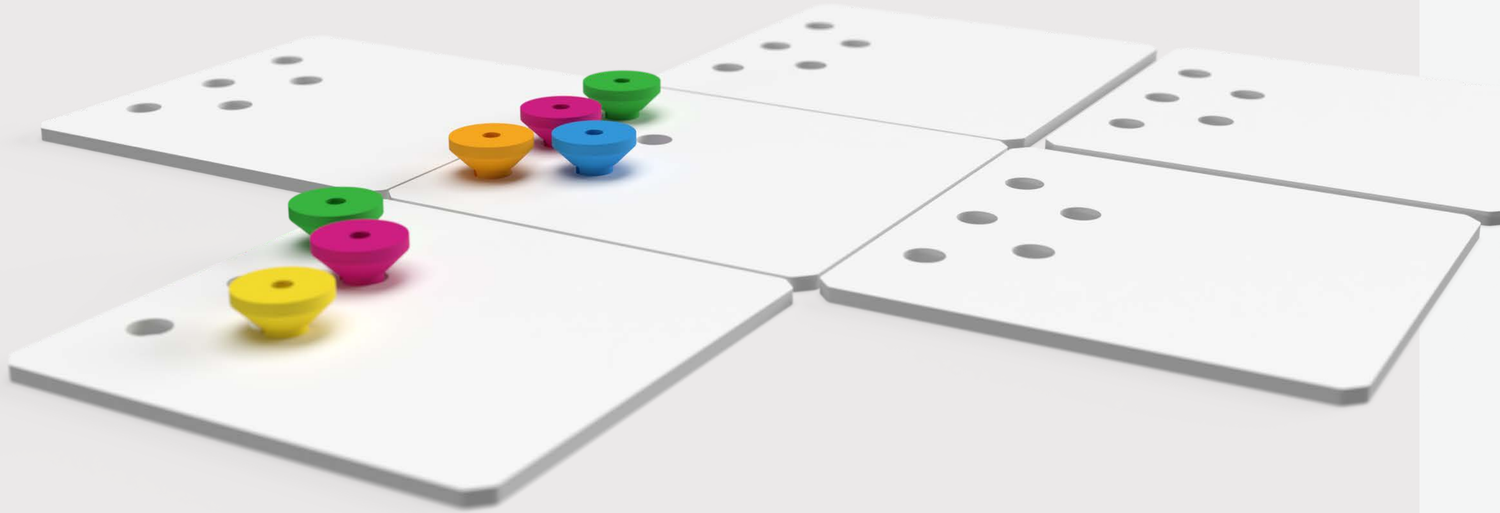
Reaching common ground.
Revealing uncommon ground.



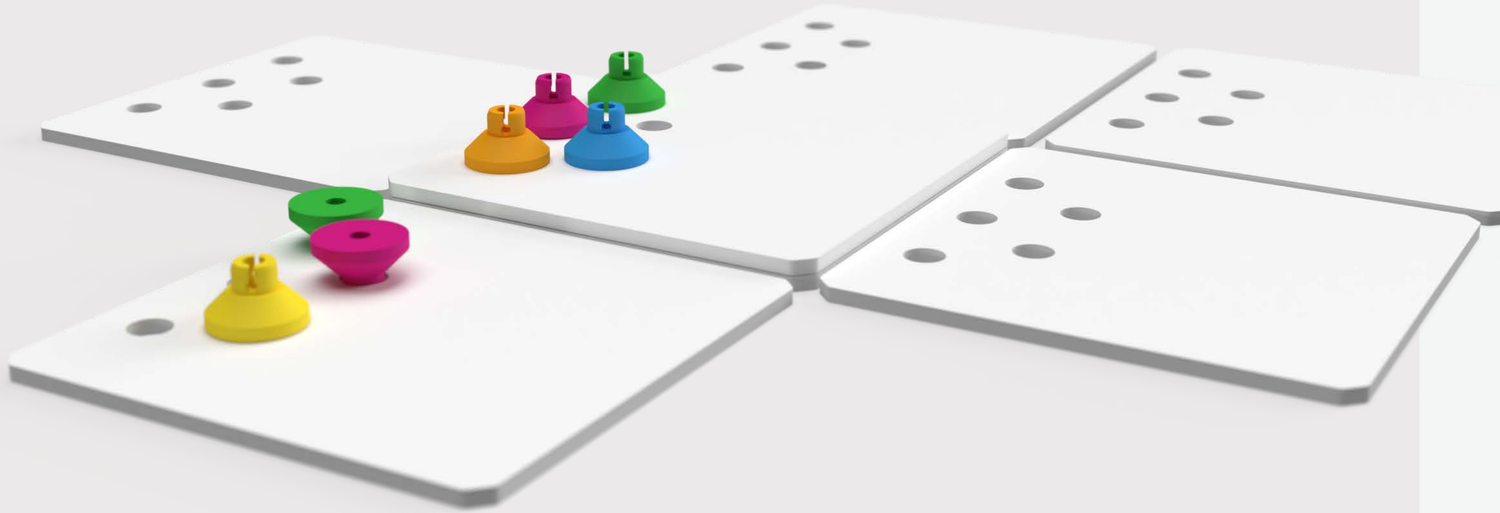
Calibrating the narrative to match the team



Filtering for agency



Agency deserts

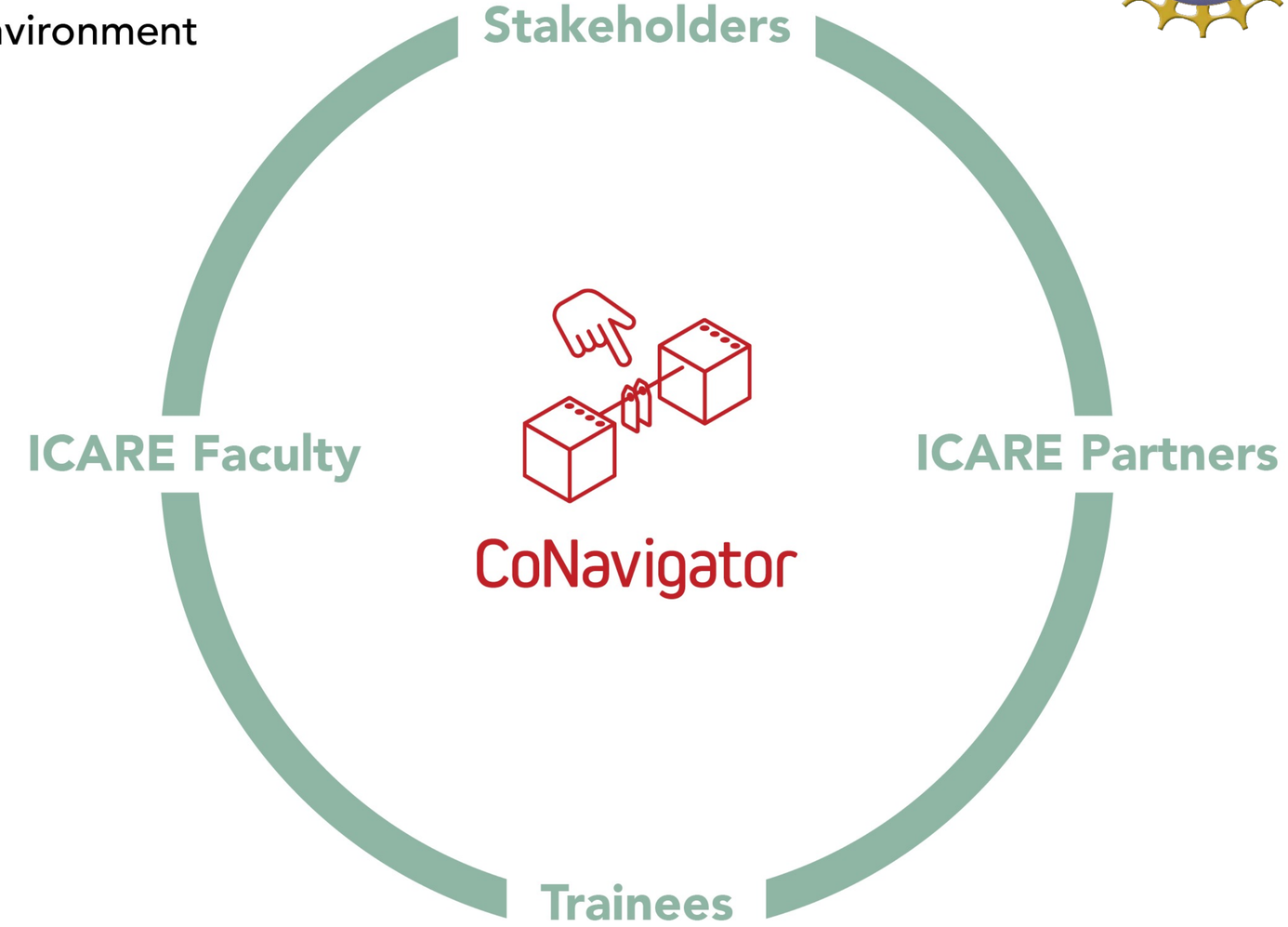


Collective Narratives

‘Bilbao’. Helen Frankenthaler, 1998

ICARE at UMBC:

Interdisciplinary Consortium for
Applied Research in the Environment



ICARE at UMBC:

Interdisciplinary Consortium for
Applied Research in the Environment

ICARE at UMBC:

Interdisciplinary Consortium for
Applied Research in the Environment

Stakeholders

Activists
Business owners
Community members
Legislators

ICARE Partners

Baltimore City Department of Works
Blue Water Baltimore
Chesapeake Bay Foundation
EcoLogix
Limno Tech Inc
Maryland Env. Service
National Aquarium
Parks and People
Patuxent Research Center
South Baltimore Land Trust
UMCES, USFS, USGS
Waterfront Partnership

Trainees

ICARE Faculty

Biological Sciences

Chemical, Biochemical and
Environmental Engineering

Geography & Environmental Systems

Marine-Estuarine Environmental Sciences

School of Public Policy

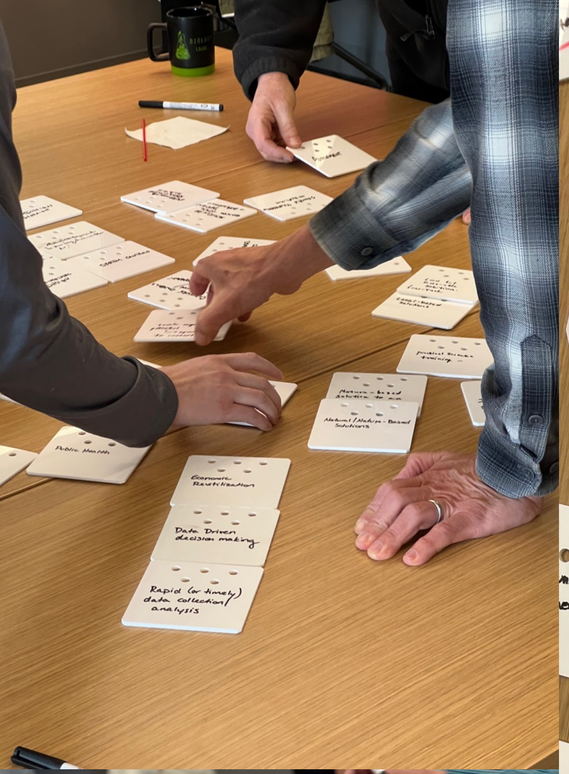
CoNavigator for ICARE at UMBC:

Timeline for the $2.8m/5yr Masters' level training program (NSF# 1922579)

Public Health
Economic Revitalization
Data Driven decision making
Rapid (or timely) data collection analysis
Network / Medium - Based Solutions

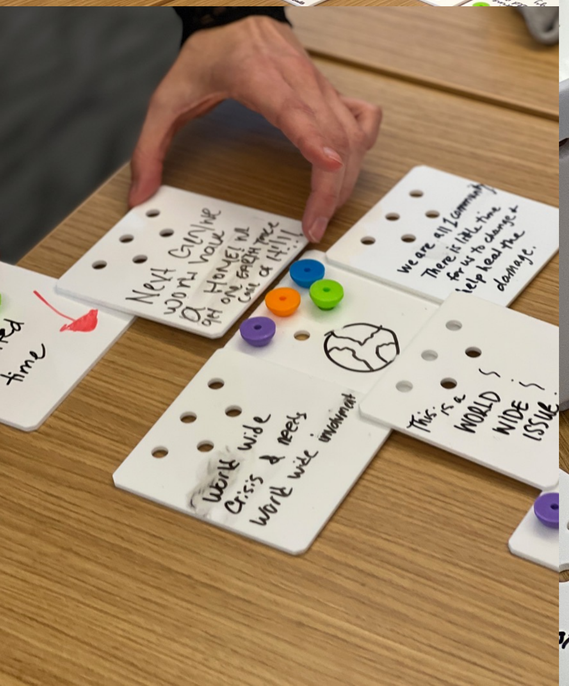
Public Health
Economic Revitalization

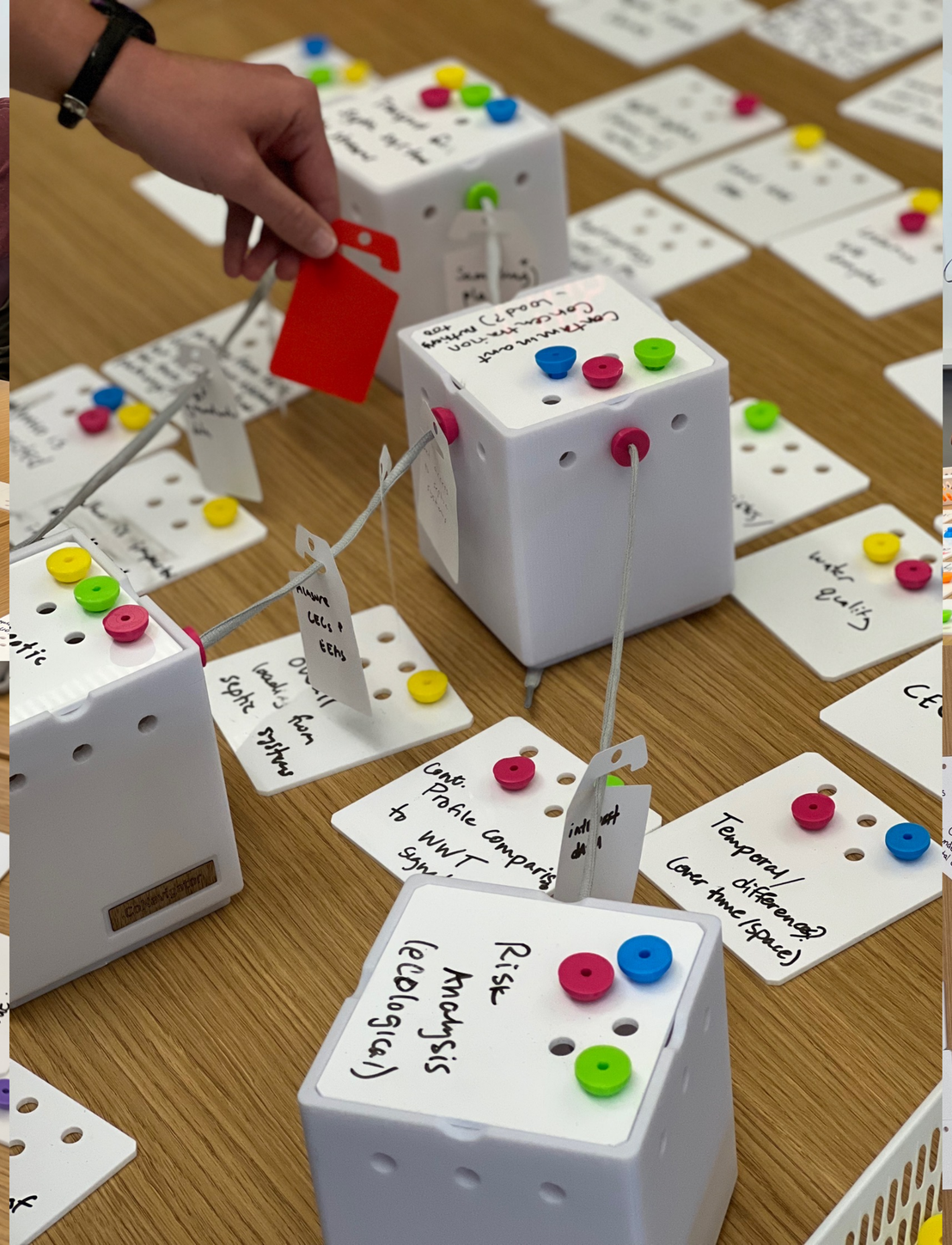
Civic Pride


Data Driven decision making
Rapid (or timely) data collection/ analysis

South Baltimore
School
Costing time
united communities
youth engagement
Training Youth
The worse thing we can do is be responsible for the ass of another life.
Community empowerment
Youth empowerment + leadership
Can work with
Affordablity
Indigenous/local /cultural knowledge
Compost Facility
Composting
Access
Local knowledge
Community Farms
Transparency
clear communication
No Bending/hiding
No loop holes
100% Honesty
Recycle
Reuse
Baltimore City

Demonstration of how the urban ecosystem does indeed function
Practical Science training


Next Genius
Work wide
Crisis & needs
Work wide involvement
This is a
WORLD
WIDE
ISSUE


Contaminant
Concentration
Load?)
water quality
Overall
loading from
septic systems
Cont.
Profile comparis
to WWT
Temporal/
differences?
Cover time (space)
Risk
Analysis
(ecological)

Why
Bats
growth
Academia
Land
Sovereignty
Trace metals in
Waterways
Baltimore
City
Where kids aren't
supposed to swim
Environmental
Justice
Baltimore City
Parks
Community
Leaders
Community
Stakeholders
bat
conservation
Science Communication

UMBC, Monday 28 March, 2022.

CoNavigated theme:

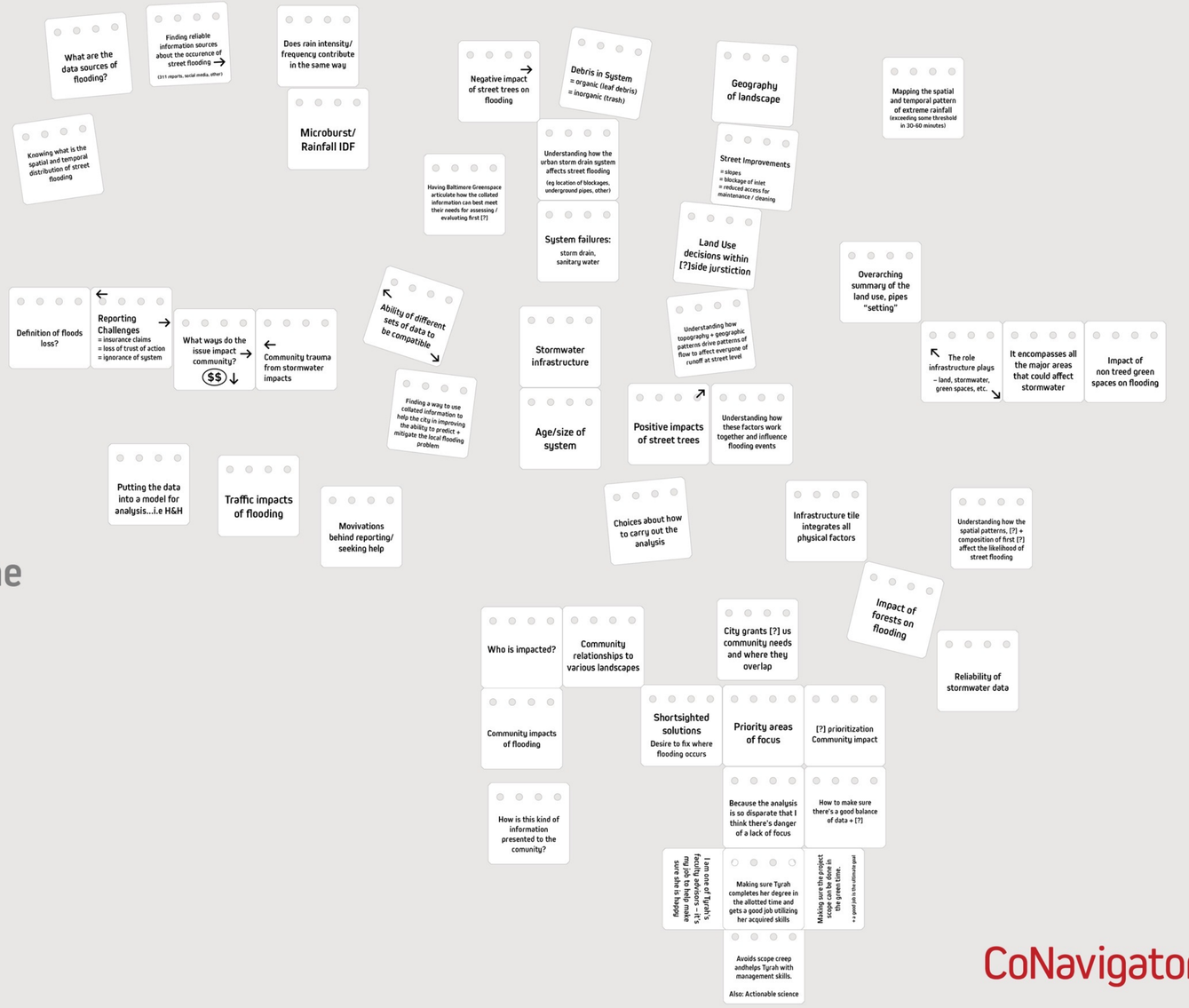
Understanding the effects of failing sewer systems

ICARE Trainee:
- Tyrah Cobb-Davis

UMBC Mentor:
- Andy Miller
- Matt Baker

Partner Mentors:
- Kim Grove (Baltimore City Public Works)

Stakeholder
- Katie Lautar (Baltimore Green Space)



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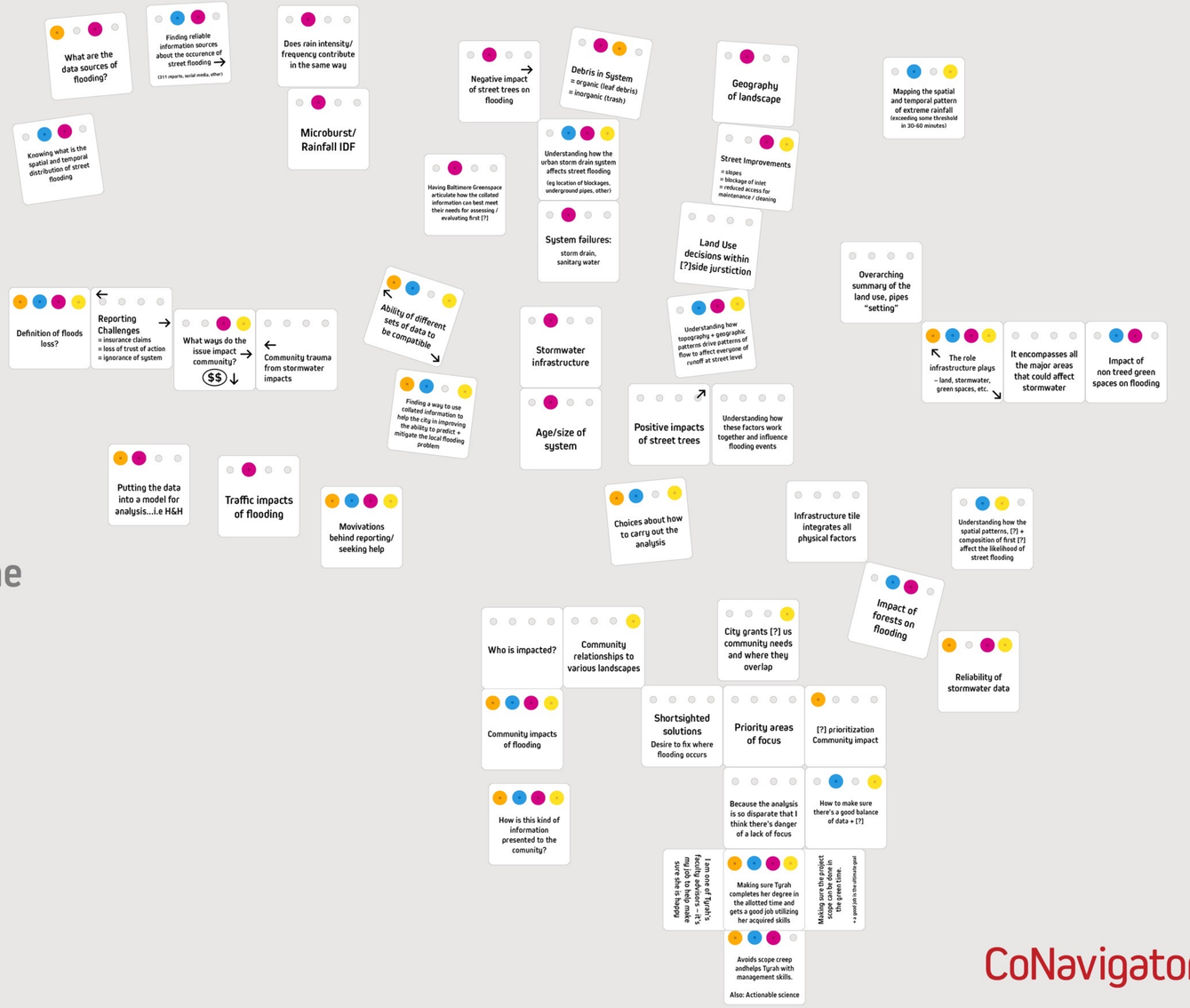

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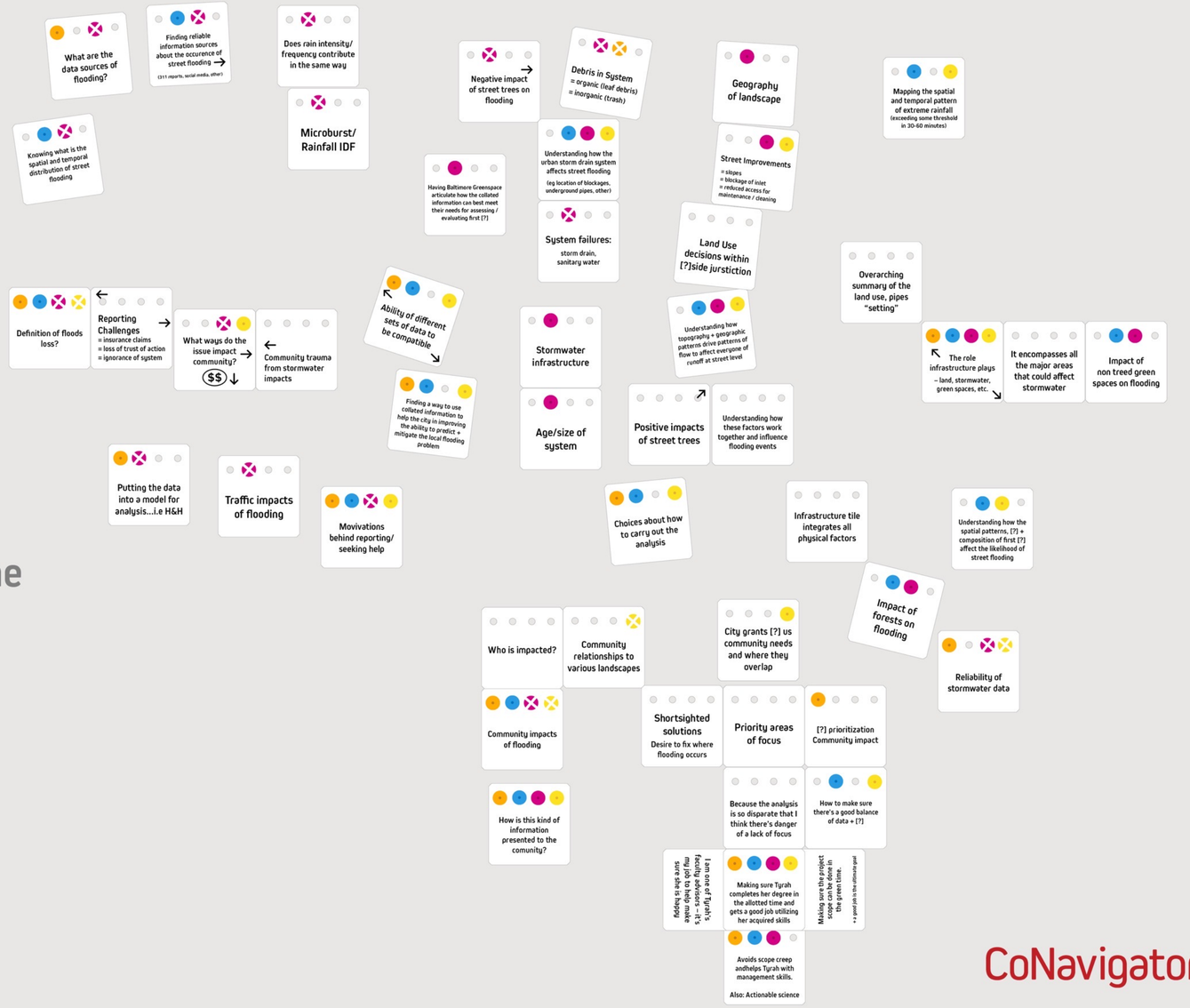

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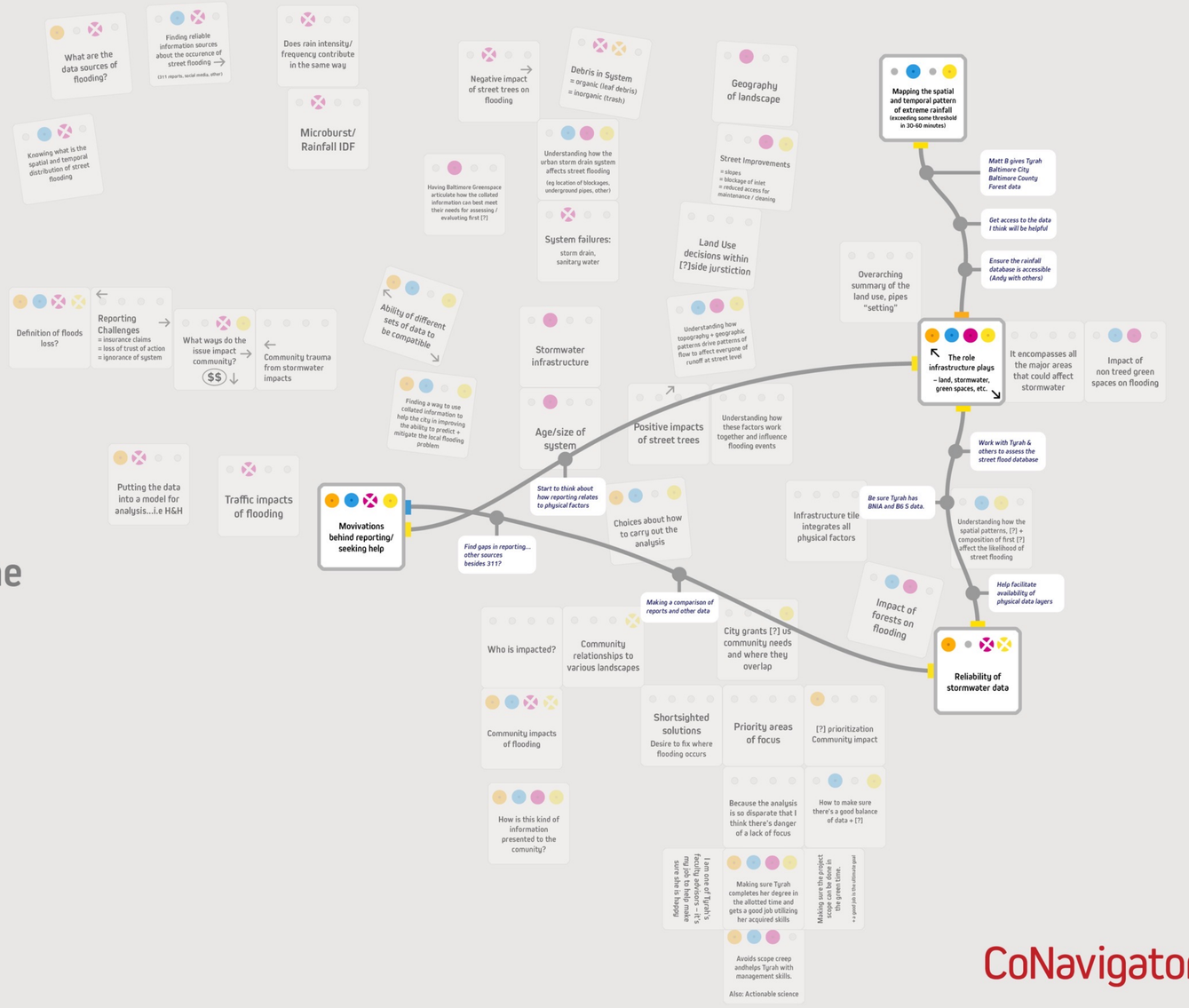
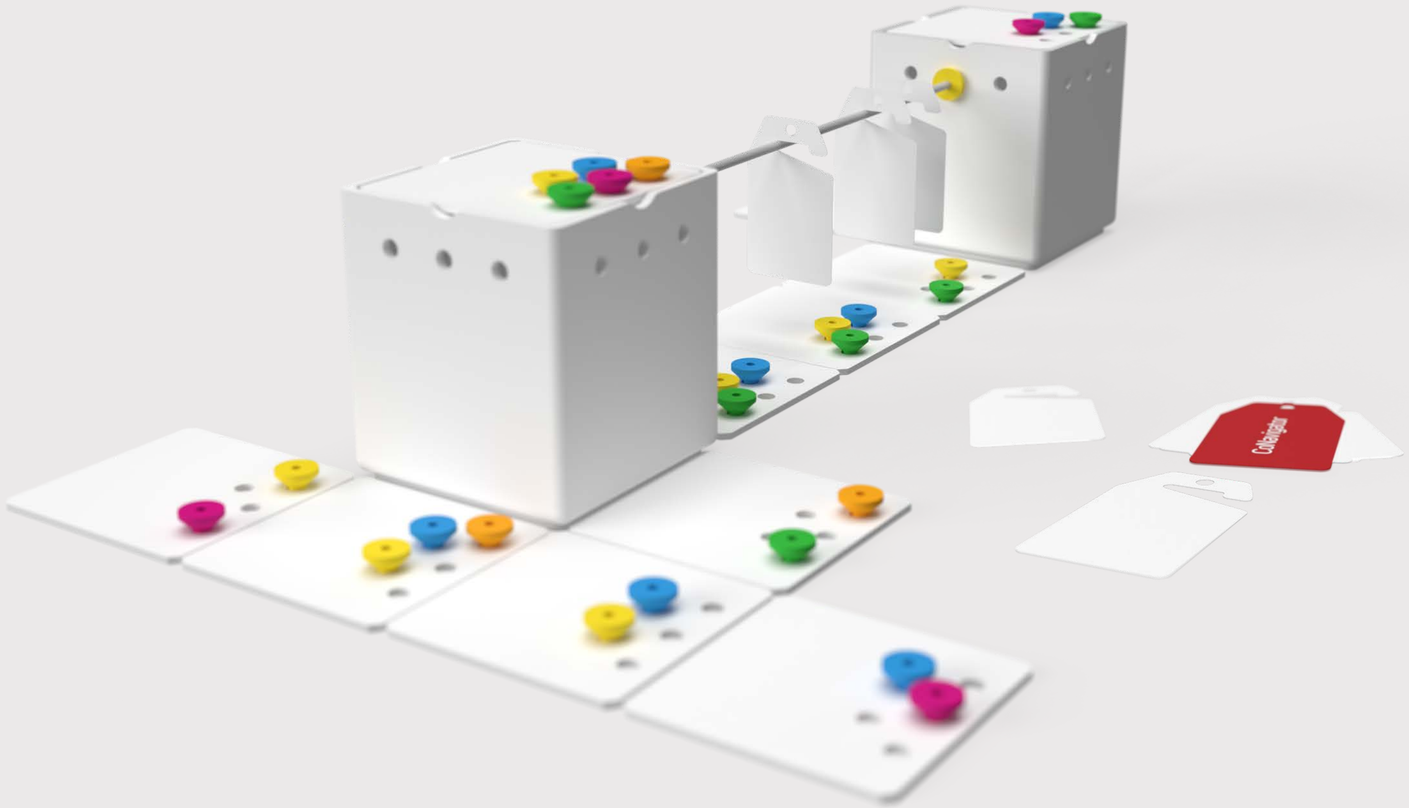


CoNavigator

Physical design



CoNavigator AR – create a virtual memory palace

(link to 2-minute YouTube video)

CoNavigator AR – a virtual memory palace

Revisit the process, add layers of information and context and explore the progression of the negotiated spaces.

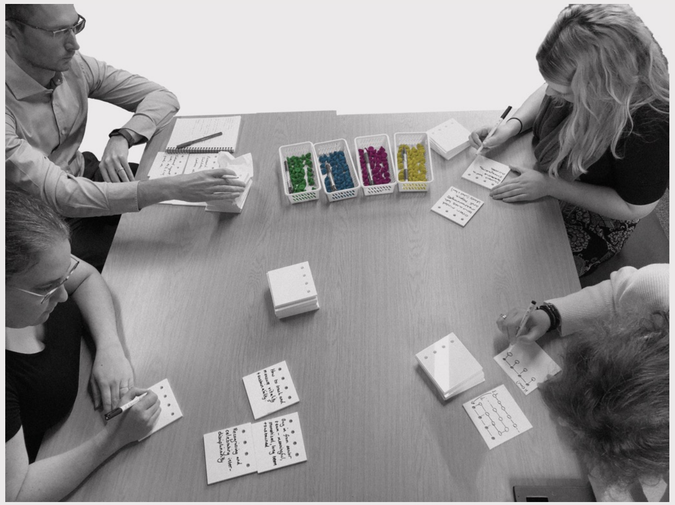
- Play audio recordings of presentation
- Add / Play slide shows & gallery images
- Replay the progression of steps
- Share the AR topographies via link or QR code
- Join up separate CoNavigator sessions into one
- Link to external pages
- Connect to a shared Google Doc
- Link to a collaborative thread / channel on Slack
- Join a Zoom call
- Collaborate via Microsoft Teams

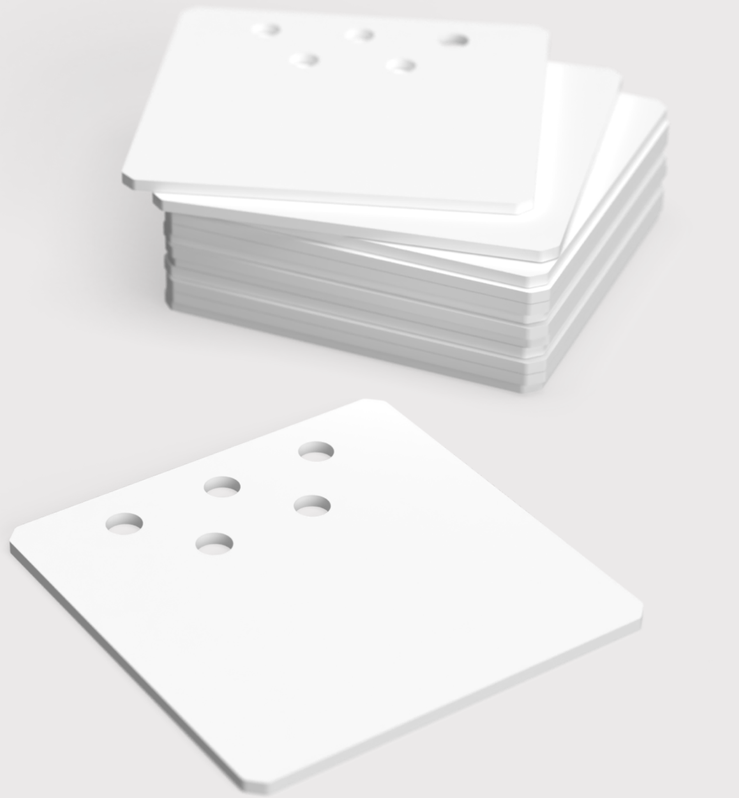
Introduction session

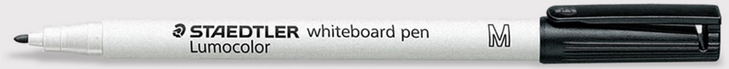
Participants split into **pairs**.
Interview one another for 5 minutes each about one experience they have had with the theme. Each person then **presents** their partner's story to the group.

Identify the theme

Using the **tiles** and **whiteboard markers**, write what you see as important or relevant to the theme.
Draw if you prefer.





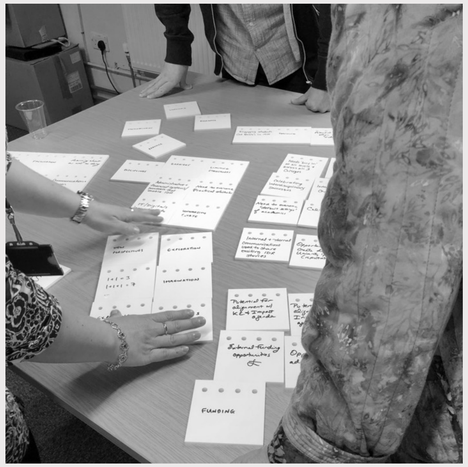


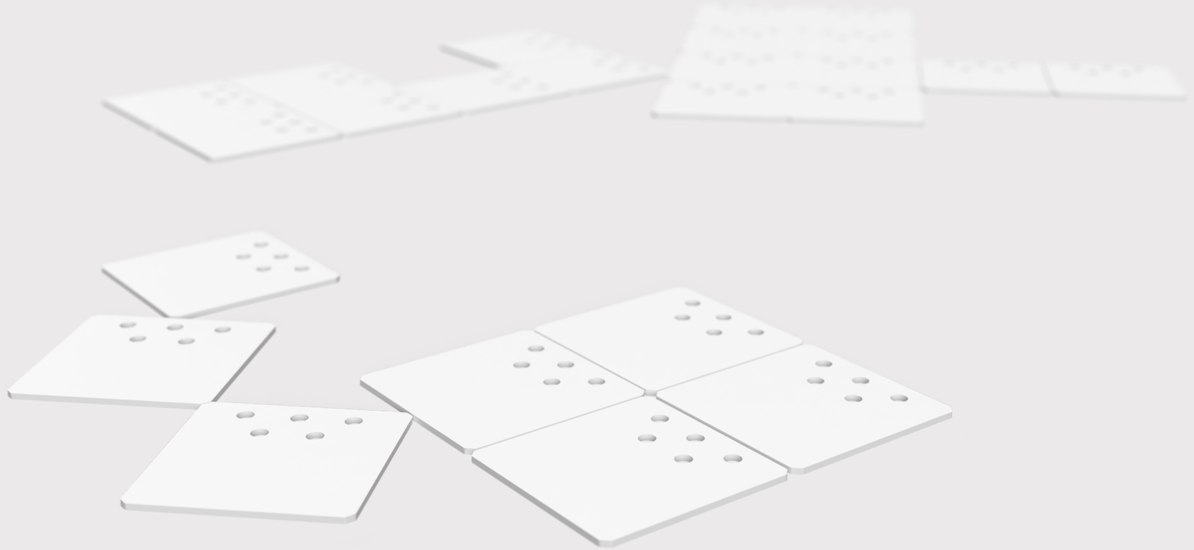
Exploratory

CoNavigator

Create a shared topography

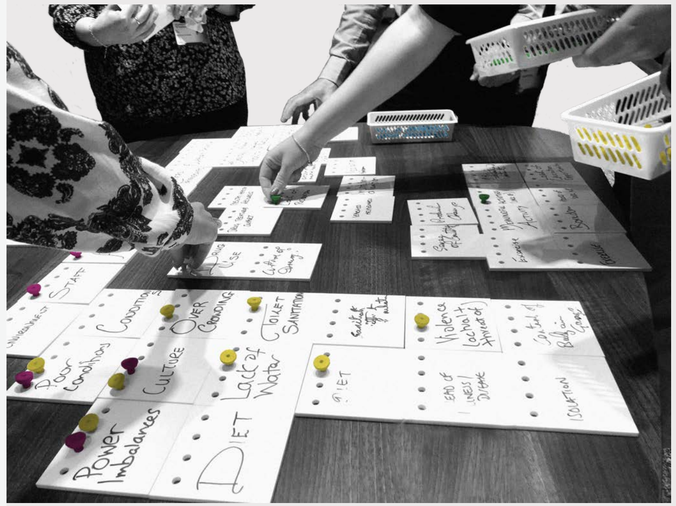
What would be the best way to organise a topography of your combined tiles? There can be as many clusters (or islands) as necessary. An island can be as few as one tile.





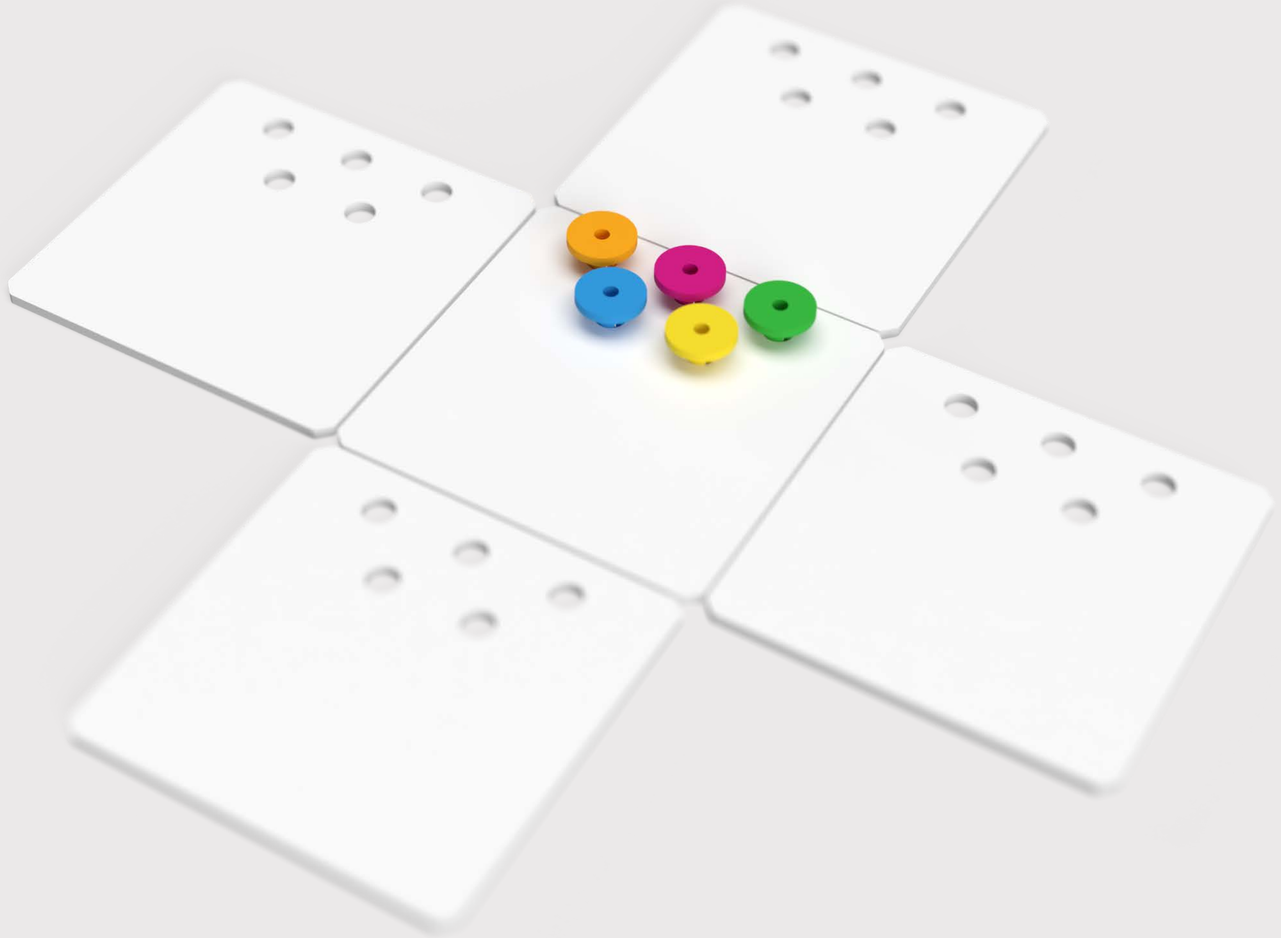
Flag the topography

Place your **coloured pegs** on the tiles which you find are most essential to the theme. As many as you like – even in areas where you don't have expertise in, or responsibility for.



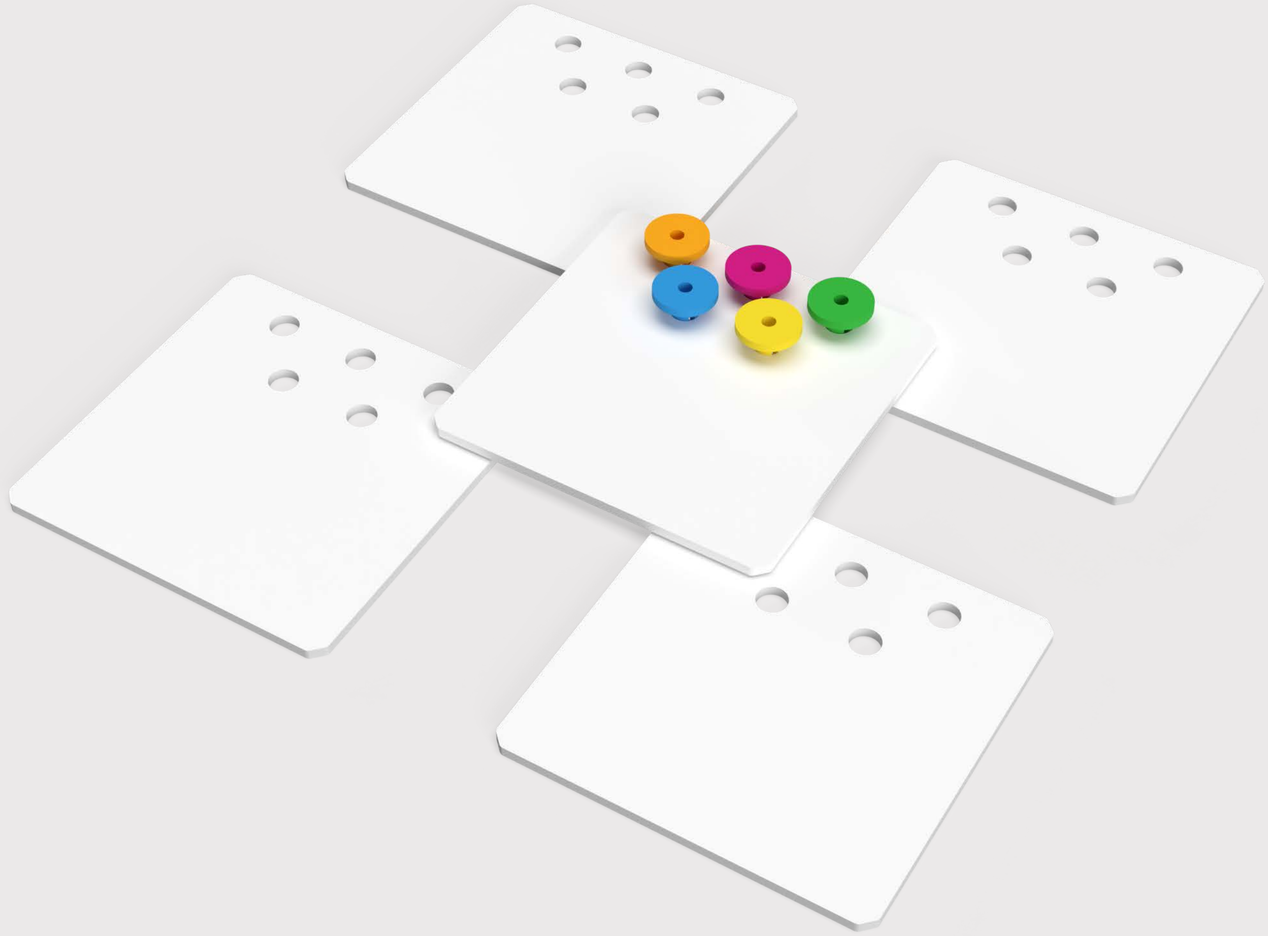
Zoom in

Are there tiles with 4-5 pegs on them? Each person writes a new tile with an explanation of what makes this tile essential for you.



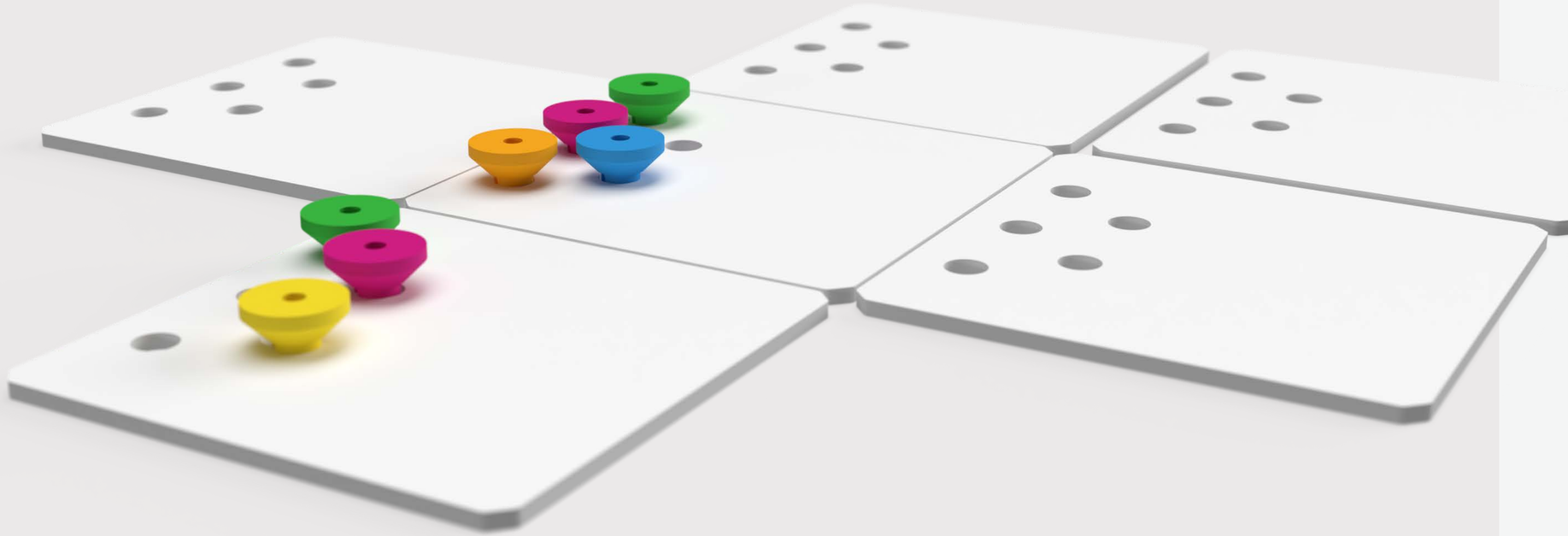
Zoom out

Are there areas on the map which contain few pegs? Discuss why they were not flagged. Is there a new way of organising the areas to make them more essential? Or is there a new tile which better describes the cluster as a whole? Place it on top of the cluster. Take a step back once you are done.



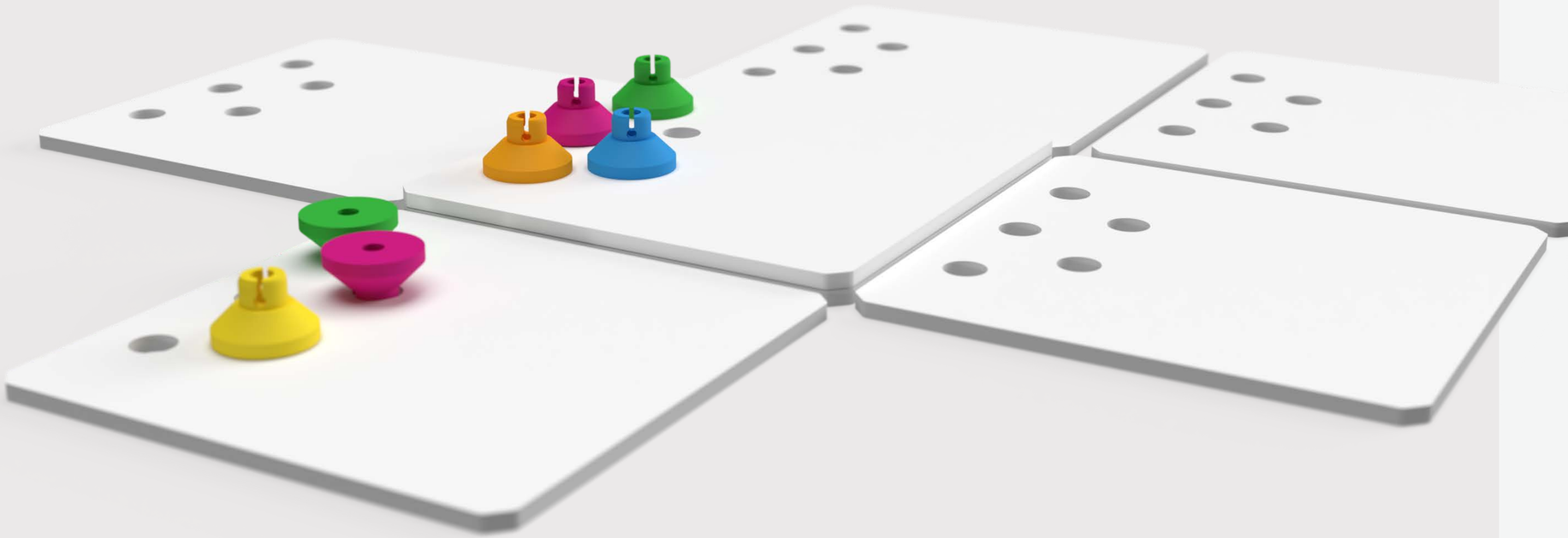
Filter for agency

Look at the coloured pegs you have placed on the topography. Are there tiles over which you do not have any agency / expertise / influence? Upturn these pegs on the tiles.



Filter for agency

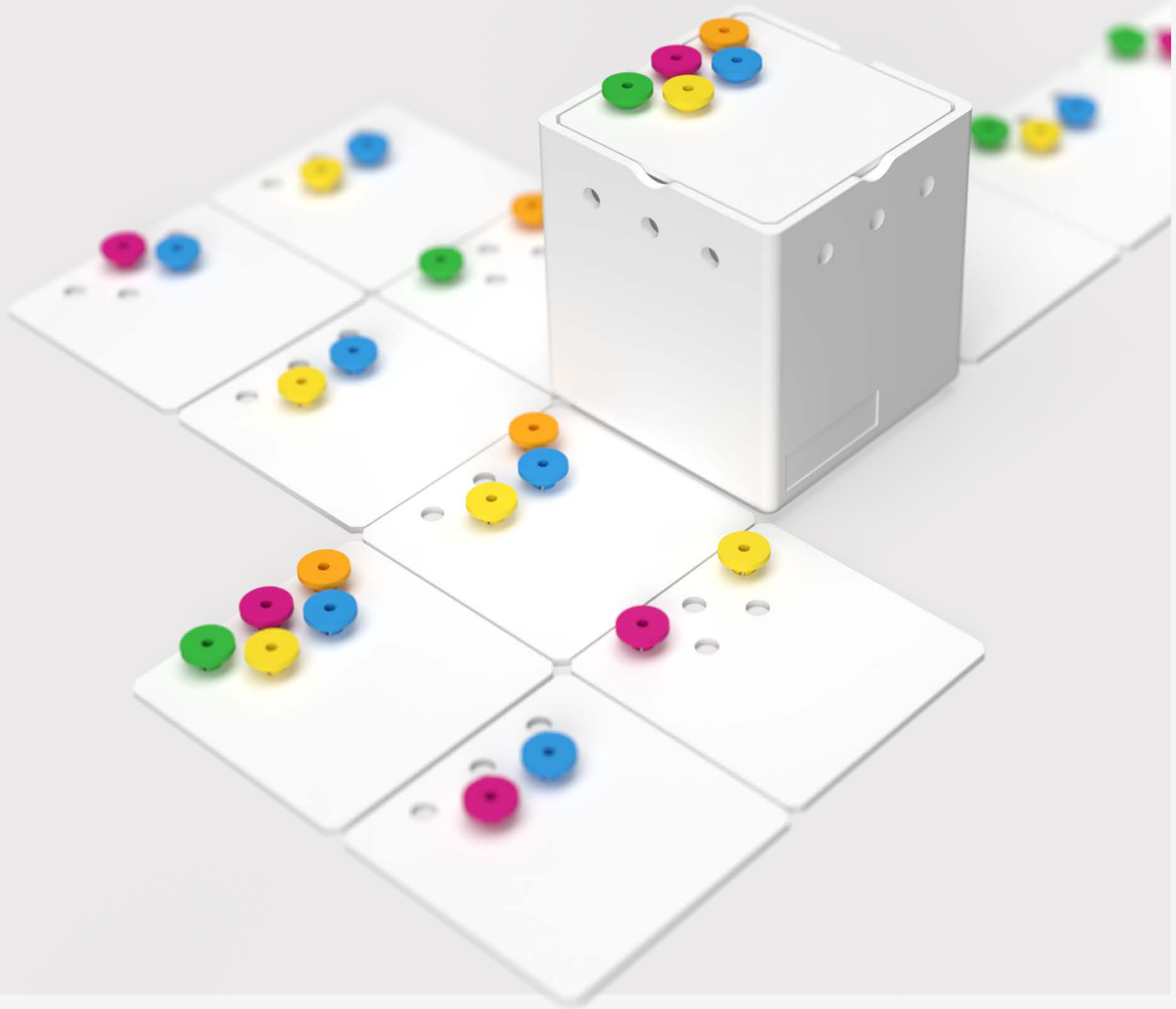
Look at the coloured pegs you have placed on the topography. Are there tiles over which you do not have any agency / expertise / influence? Upturn these pegs on the tiles.



Elevate the key areas

Look at the entire set of tiles. Each person decides which tile represents the area which needs most attention.

Elevate these 4 tiles using the cubes.

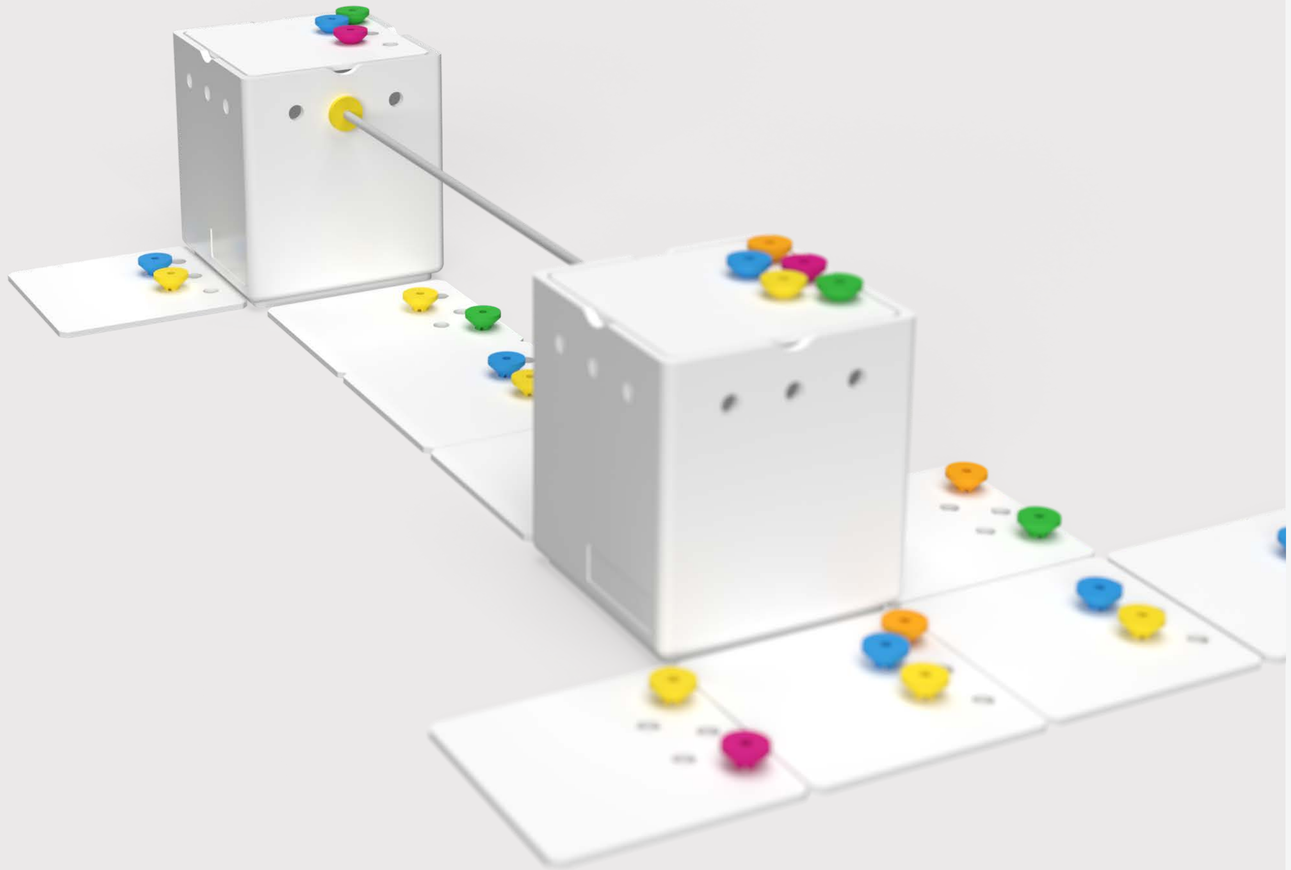


Exploratory

CoNavigator

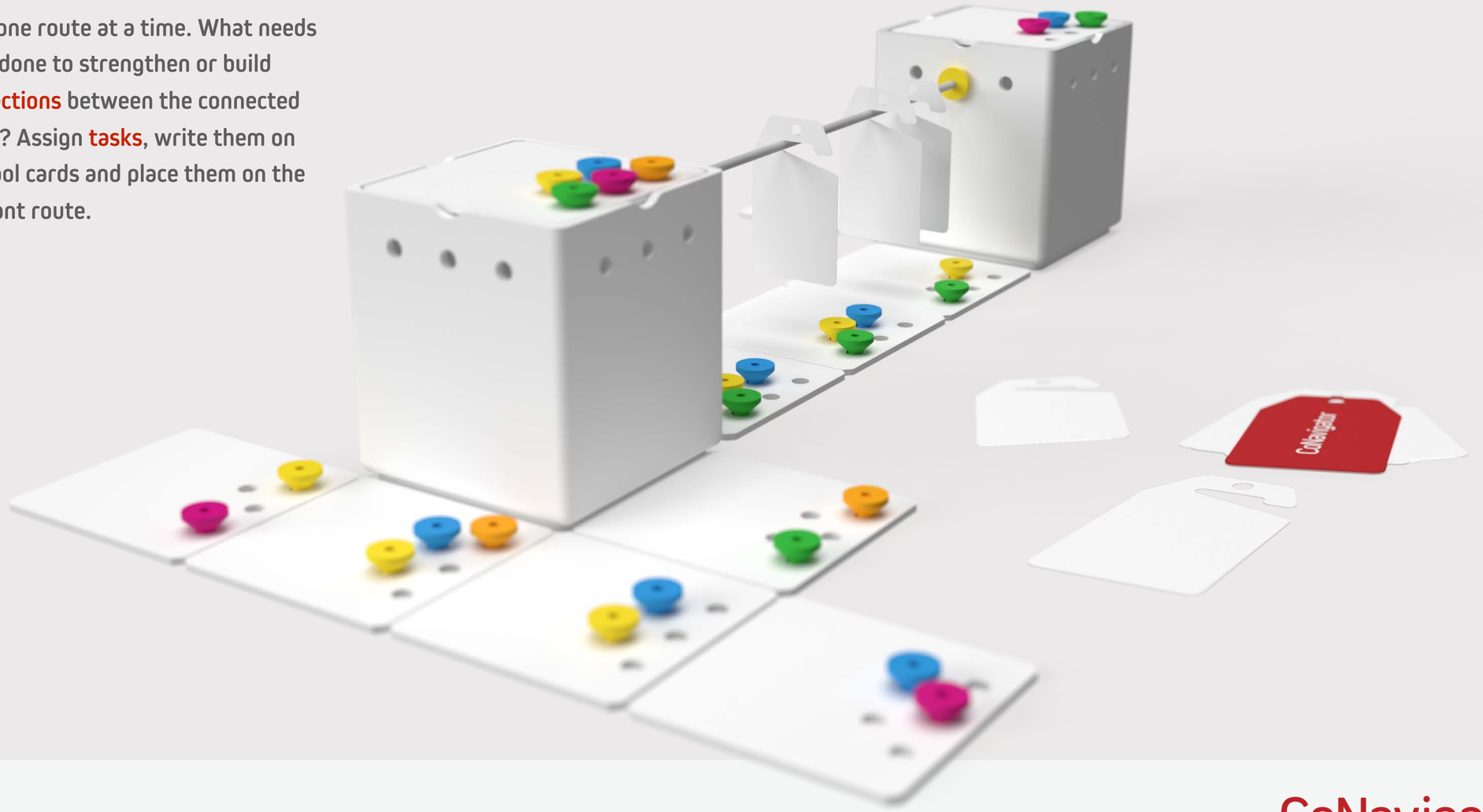
Build routes

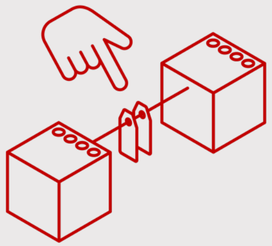
Look at the what the others have elevated and **listen** to why they elevated them. Can you see a connection between the areas they think are crucial, and your own? Think of ways of **connecting** these areas. Then discuss how these connections might be and **build a route** between the areas.



Stakeholding

Take one route at a time. What needs to be done to strengthen or build connections between the connected cubes? Assign tasks, write them on the tool cards and place them on the relevant route.





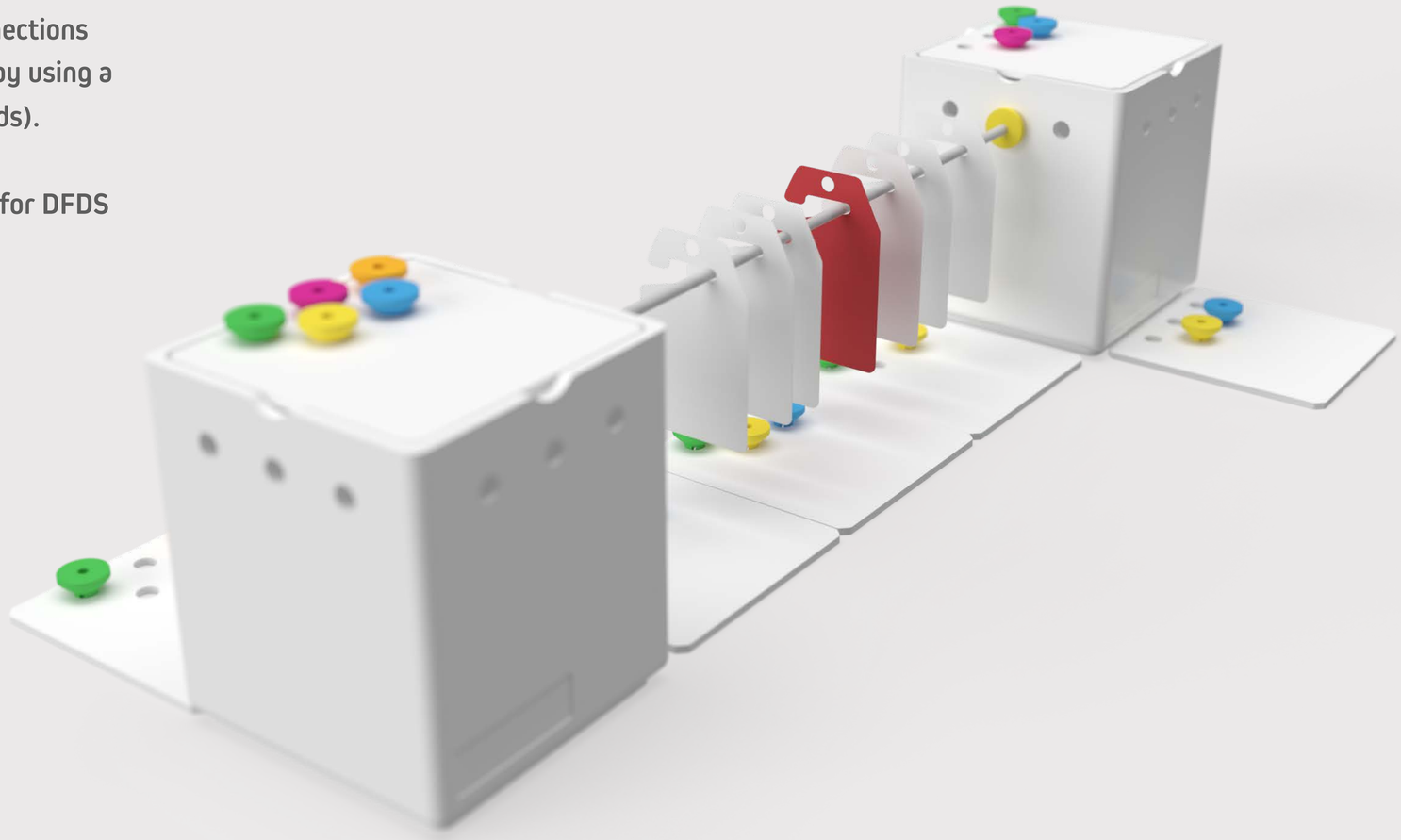
Present your CoNavigations

What was the **dominant narrative** in your collaboration?

Decide how to present the journeys that took you to this end point, what you learned and what were the outcomes.

NASA and NSF, Maryland, USA

Barrier card

If there is some kind of hinderance to connections and collaborations, these can be signified by using a red barrier card (which divide the task cards).

Multiple colour coding could be developed for DFDS to match existing terminology/methods.