APPENDIX B

Pilot Test #1:

Participant(s)/Stakeholder type:
1 Male Designer/Student,
Makerspace Member

Workshop activity/approach:
- Digital workshop
- Early prototyping for the card deck and workshop combined
- Facilitator and participant used Miro, collaborative whiteboard
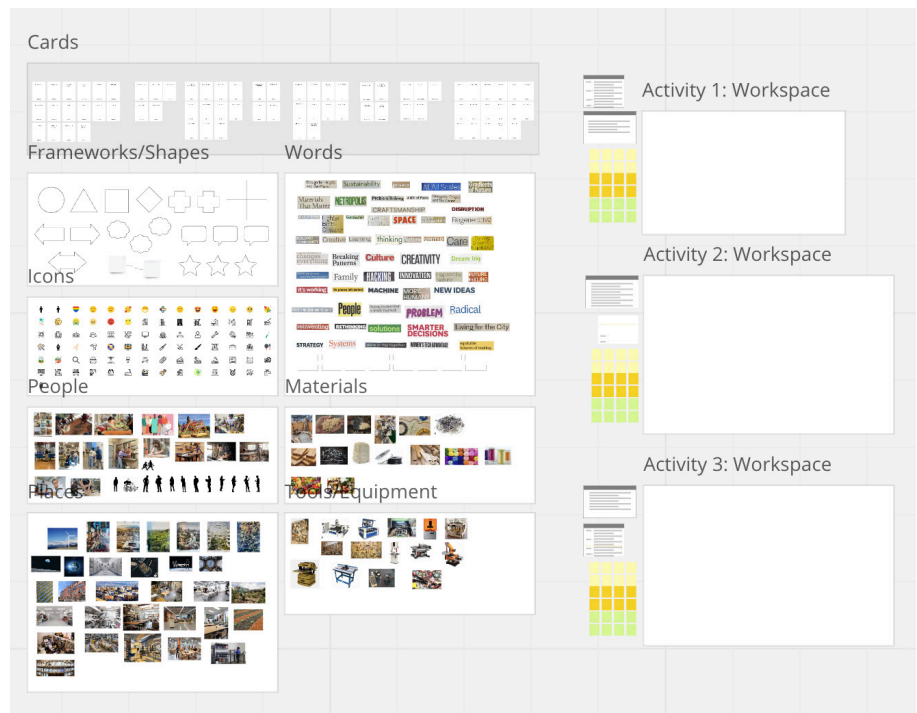- A 3-step activity

Image Description: Digital workshop version #1, layout in virtual whiteboard.

Activity 1: *Discussion*
- Discuss the participants' experiences in makerspaces.
- Using sticky notes, mind-map the discussion.

Activity 2: *Current State*
- Choose from a list of "how might we statements"
- Using the cards, start to formulate ideas on the "how might we" statement.
- This can be a past, present future, mind-map, concept map, or journey map.
- Use words, sticky notes, and icons as needed.

Activity 3: *Future State*
- From the previous discussion, use the images and cards to further refine your possible solution as a conceptual mind-map or collage

Researcher observation: The participant used the cards to explain and refine their idea after discussing their experiences and wishes for connecting at-home makers.

Engagement outcome: Participant developed the idea for an app to connect small-scale makers to those that want to use advanced manufacturing equipment but do not have access.

Usability feedback:
- Offer different paths for users to enter the card deck. i.e., Past, Present, Future
- Add action words to the cards
- Remove the images from workshop
- Add color coding to card categories

Pilot Test #2:

Participant(s)/Stakeholder type:
2 Female Designers/Students,
Makerspace Members

Workshop activity/approach:
- Digital workshop
- Facilitator and participant used Miro, collaborative whiteboard
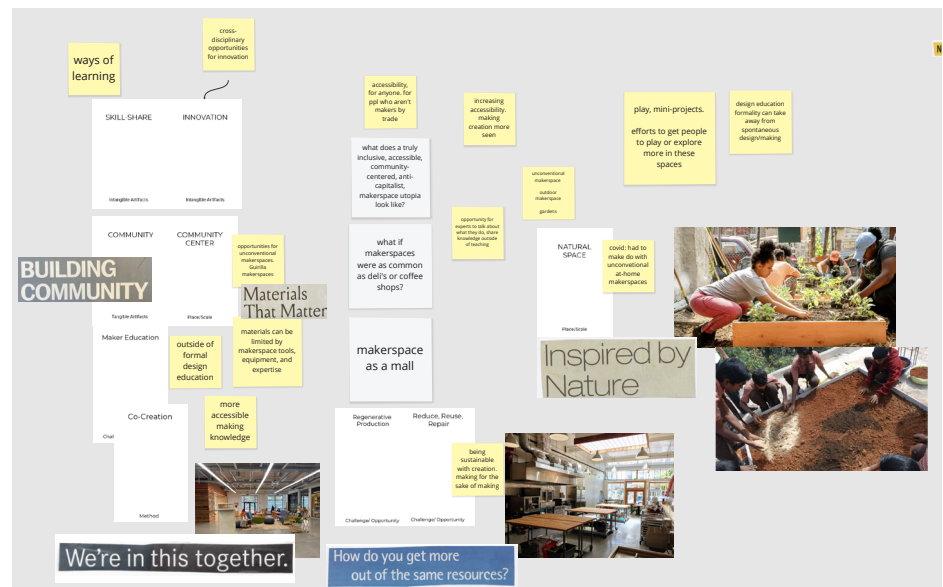- A 2-step activity

Image Description: Digital workshop version #2, sample activity outcome.

Activity 1: *Current State*
- Discuss the participants experiences in makerspaces and with making in general.
- Using sticky notes, rose/thorn/bud, or mind-map the discussion.

Activity 2: *Future State*
- Choose from a list of "how might we statements", pick from this list or create your own "how might we".
- Using the cards, start to formulate ideas on the how might we statement.
- This can be a past, present future, mind-map, concept map, or journey map.
- Thinking about how would you start to problem solve around this statement?
- Use the cards, words, sticky notes, icons, and images as needed, create a mind map/journey map/concept map to develop your idea.
- Researcher observation: The participants used the cards to further discuss their past and present shared experience within makerspaces.

Engagement outcome: Participants discussed their experiences working in academic makerspaces. They used the cards to dig deeper into their experience and ideate on conceptual unconventional makerspace (i.e., an outdoor/nature makerspace).

Usability feedback:
- They liked the fact that the cards have words only, no images - avoid biased ideas.
- They liked that the cards were sectioned by color.
- Enjoyed using this to talk about their "experiences and asking questions that push beyond constraints and imagining the potential futures."
- "How might we" statements were a little hard to understand but liked that they had choices.
- Digital was difficult with so much on the screen.

Pilot Test #3:

Participant(s)/Stakeholder type:
1 Female Designer/Educator, Makerspace Member

Workshop activity/approach:
- In-person pilot test
- Participant was given list of possible rules for using the cards.
- They did not want to follow the pre-defined methods and chose how to engage with the cards in an organic "choose your own adventure" approach
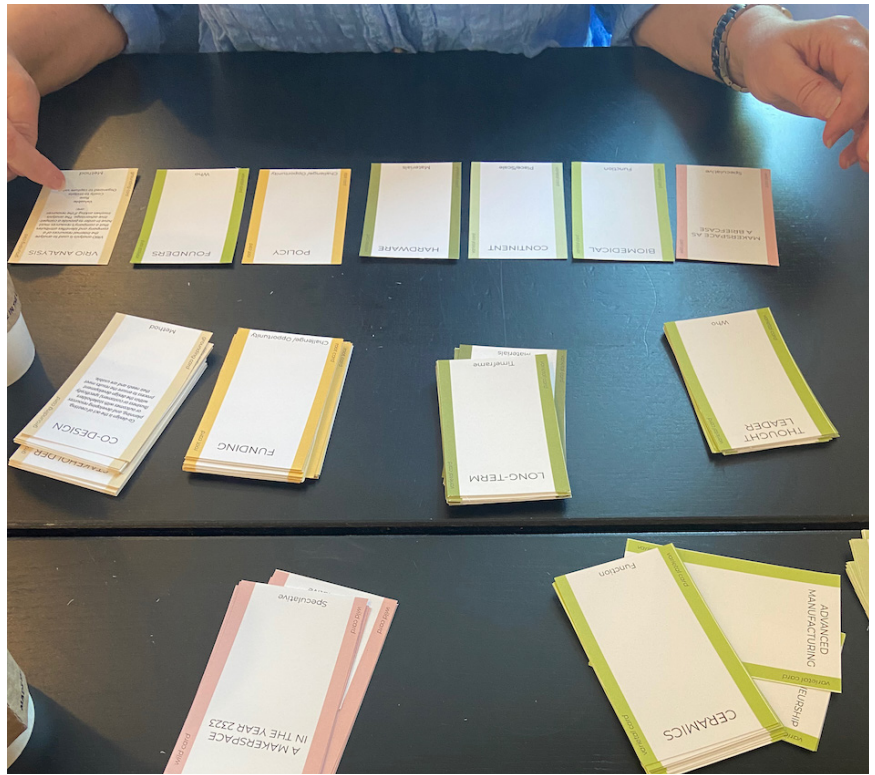- They shuffled each deck and chose 1 card at random from each deck.

Image Description: In-person workshop, sample activity outcome.

Researcher observation: Participant was eager to dive in and see what she could produce by choos-ing cards at random. Was less interested in learning how to 'play.' Approached it like a game or fun expansive thinking/ creative puzzle.

Engagement outcome: Participant developed a speculative concept for a company that distributes a bio-medical makerspace briefcase.

Usability feedback:
- "Many of these spaces are formed as an 'accidental collision' of all of these things" - using the card deck this way reflects that organic development.
- Called the method "a makerspace tarot reading"
- Bolder font
- Add more social/community-centric cards

Pilot Test #4:

Participant(s)/Stakeholder type:
1 Female Designer/Researcher

Workshop activity/approach:
- In-person pilot test
- Participant was given list of possible starting points
- They decided to shuffle each deck, and picked 3 cards from Challenges/ Opportunities, 1 Speculative card, 1 Method card.
- The Varietals cards were used as asset/inventorying cards to think through the initial card choices analytically in relation to the method (i.e., The Four Cs of marketing).
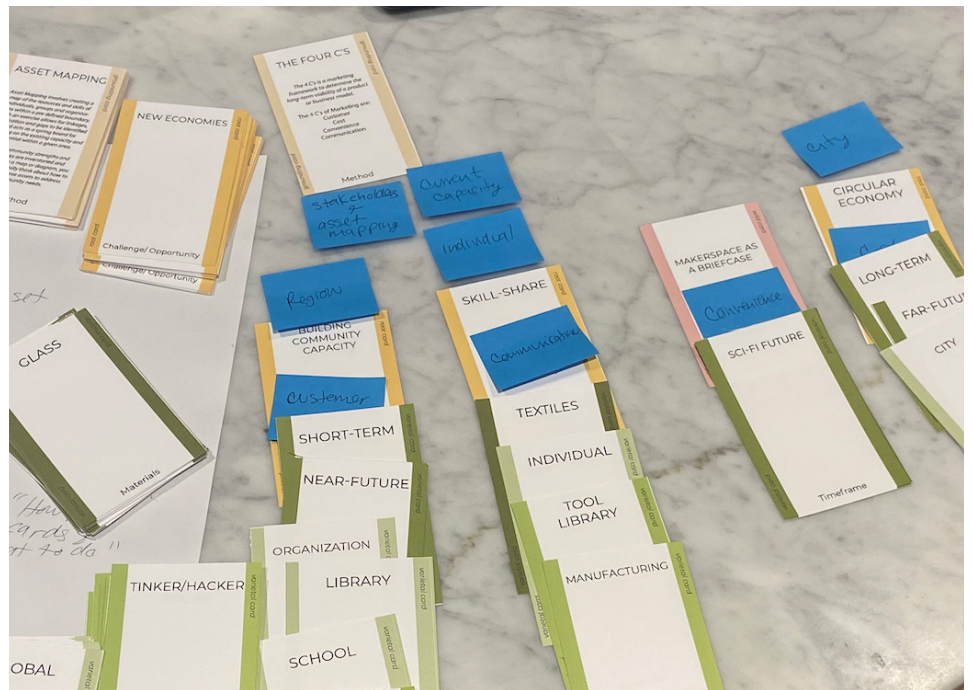

Image Description: In-person workshop, sample activity outcome.

Researcher observation: As a design researcher, the participant was inclined to use the deck as an asset or inventorying tool.

Usability feedback:
- Enjoyed the use of cards to think through ideas.
- Cards naturally allowed to physically map assets.
- Would have liked/preferred to ideate with the cards in a group to facilitate collaborative play.
- 'Materials' category was too granular/specific - would like to see more general terms like 'digital,' 'hand-made,' 'analog.'
- Would like simple instructions for card use options to get started.
- Felt like there were too many card categories at first, but once they were acquainted with the deck, they liked having many options.

Pilot Test #5:

Participant(s)/Stakeholder type:

1 Female Makerspace Member/Staff

Workshop activity/approach:

- Digital workshop
- Facilitator and participant used Miro, collaborative whiteboard
- Participant was given a list of possible starting points.
- They decided to use the "tarot" approach as it allows for open interpretation.

Researcher observation: Participant was very thoughtful and deliberate with her choices of cards and their placement in relation to one another.

Engagement outcome: Participant used the cards to ideate on a concept that they had been thinking about for a while. The cards helped to refine and ideate their vision and what would be needed to implement the concept.

Image Description: Digital workshop version #3, layout in virtual whiteboard.

Image Description: Digital workshop, sample activity outcome.

Usability feedback:

- Would like to see action words as horizontal "header" cards.
- The collaged imagery could be a placemat for the engagement.
- Would like to see more expansion packs, updated frequently like textbooks.
- Add more vague terms for 'functions,' 'materials,' 'place and scale.'
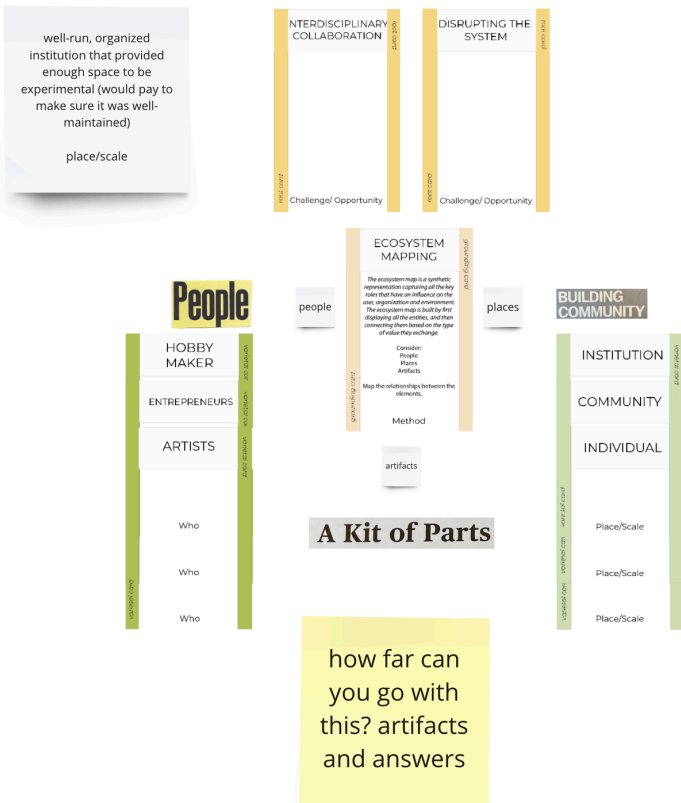- Separate 'Place/Scale' into two decks. 'Scale' + 'timeline.'

Card Deck Development

Version #1

Version #2