

Collective Design



Toolkit

Co-produced with Muktangnan School, Mumbai, India

Introduction to Collective Design Practice

This toolkit is aimed at supporting designer-facilitators to lead a collective design project, with schoolchildren between ages 10 - 14. Designer-facilitators have a background in design - they can be designers, architects or architecture students.

This project aims to involve schoolchildren in designing interventions for their neighbourhood. During this project, the children will act as architects/designers to map, assess, document, critique, design and work with local makers to fabricate responses to their local neighbourhood or home area.

This toolkit is based on research with a class of children from Muktangan School in Mumbai, India, between 2012-2017 with an architect-researcher. The photographs that illustrate the sequence of activities are all from the research project.

About the research

A Collective Design pedagogy is an idea for a socially engaged learning practice that involves schoolchildren in the production of their city. How can children be involved in (re)designing their environment and work with the wider community, to democratise the city and develop practices of responsible citizenship?

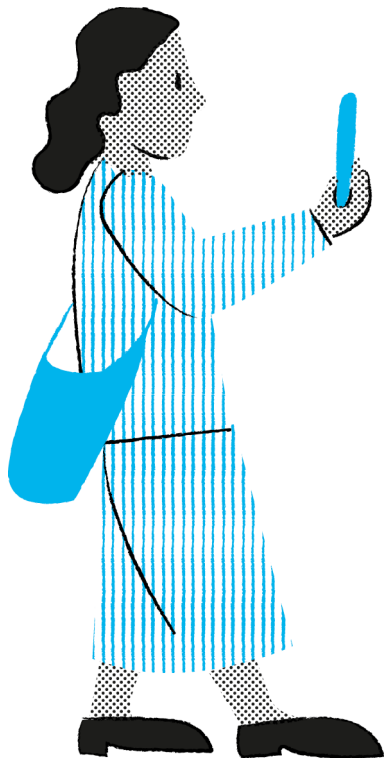
The case study is situated in Mumbai, a doctoral research project by architect-researcher Nicola Antaki in collaboration with education NGO Muktangan School and the neighbourhood Mariamma Nagar. The research set out a series of pedagogic experiments investigating the city's potential to house socio-spatial active citizenship practices by children, school staff and the community, between 2012 and 2017. Four yearly series of workshops included the

same class of schoolchildren in observing, assessing and then transforming their environment. Using activities borrowed from architectural practice, they transformed their school and neighbourhood by designing interventions. Critical pedagogical, constructivist and co-design methods included the children in activating what Henri Lefebvre called the right to the city; the development of a collective design practice fuses learning with the environment. Children can become active citizens through design and work with local craft as a political design tool.

The children identified wellbeing as the overarching itinerary for their design projects: They designed responses to problems such as open gutters, mosquitoes, fighting and bad language, lack of green spaces and insufficient waste management. The research argues children's role as architects is pedagogical: with facilitation, they can be involved in the production of their current environment, develop their political identity, and foster their ability to communicate ideas. Co-design allows children to develop empathy, think critically and learn how to learn.

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Observe and
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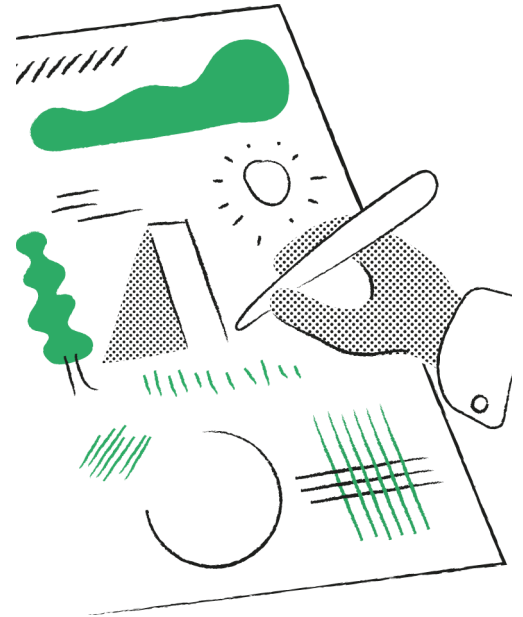
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Phase 4
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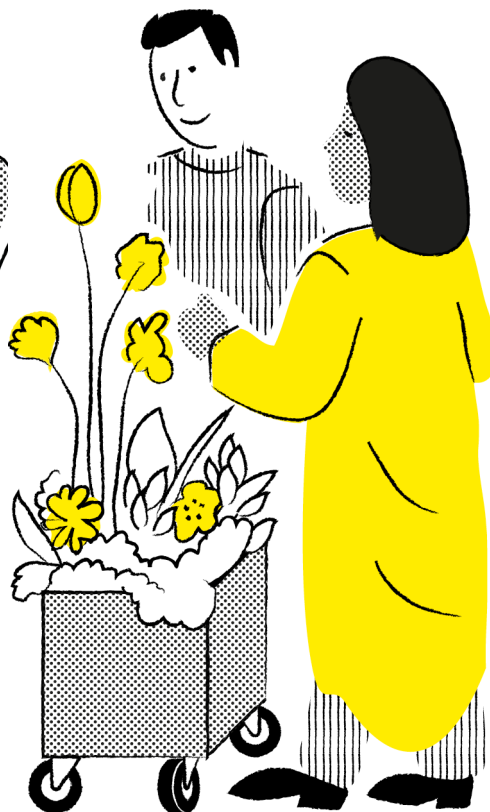
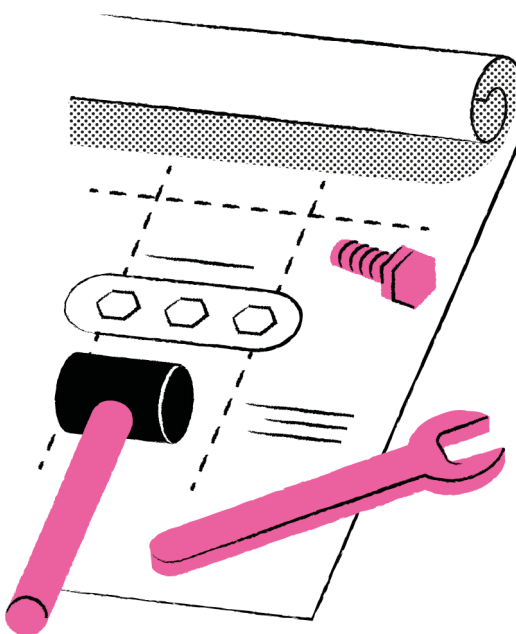
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Assessment and evaluation

To assess and evaluate the young people you are working with as a curriculum integrated activity, there is a simple set of tools: the 4 Cs - Critical Thinking, Creative Thinking, Collaboration and Communication.

Muktangan School have developed a tool for tracking learning progression, called 21st Century Skills (S2T2).

About S 2 T 2

'S 2 T 2 is a tracking tool for 21st century skills in students across grades 2 to 7. The tool aims to assess the 4Cs of 21st century skills (Critical Thinking, Creative Thinking, Collaboration and Communication) across 3 levels. Additionally, the tool also tracks Emotion Competence as it is the centrepiece that guides the child to make optimal use of the 4Cs. The tool can be used by the facilitator once to track student growth across the project.

How to use the tool

Before you administer the tool, bring to mind the student you want to track. Try to recall your most recent interaction with the child. You may refer to experiences and information observed up to a month ago. If you feel you don't have sufficient information, you may observe the child more keenly in your upcoming classes.

To begin administering the tool, read each level carefully and choose the level that best describes the student's competency. If unsure, choose the lesser level.

If you firmly believe that the child does not currently possess the competency for level 1, choose the box labelled 'R'.from the research project.' Muktangan School 2019.

Assessment Tool

Sr.no	Competency/Skill	Criteria	Level 1	Level 2	Level 3	R
1.	<p>Critical Thinking <u>Operational Definition</u> Critical Thinking comprises of the mental processes, strategies and representations that are used to solve problems, make decisions, and learn new concepts²</p>	Inquisitiveness	Is rarely curious; usually accepts whatever the teacher says	Asks few questions to get more information	Is very curious; asks relevant questions	
		Problem Solving	Rarely clarifies doubts and usually focuses on problems rather than solutions	Attempts to clarify doubts and begins to think of solutions	Clarifies doubts with no hesitation and often thinks of and shares solutions	
		Comprehension and Application	Prefers remembering by rote learning (by memorizing)	Attempts to understand concepts and can partially explain them	Applies learned concepts in real life by making connections and through demonstration	
		Parallel thinking and Analysis	Prefers to hold on to a single perspective	Ready to listen and think from different perspectives	Comes to conclusions by objectively analysing different perspectives	
2.	<p>Creative Thinking <u>Operational Definition</u> Creativity is defined as the tendency to generate or recognize ideas, alternatives, or possibilities³ that have <i>originality</i>, <i>usefulness</i> and are <i>nonobvious</i>⁴</p>	Flexibility Fluency	Tends to stay with one's existing ideas and knowledge	Attempts to learn through experimenting and tries to come up with new ideas and knowledge	Is flexible, willing to learn through experimenting and presents new ideas and knowledge	
		Originality Usefulness	Usually states obvious or known solutions	Attempts different methods to solve a problem but may not necessarily succeed	Successfully executes unique solutions to solve a problem	
3.	<p>Collaboration <u>Operational Definition</u> The capacity of an individual to effectively engage in a process where-by two or more agents attempt to solve a problem by sharing the understanding and effort required to come to a solution and pooling their knowledge, skills and efforts to reach that solution.⁵</p>	People skills	Prefers to work alone or just with close friends	Works well with known persons and tries to get along with different kinds of people	Functions well as a team member and is easy to get along with	
		Judgement and Feedback	Tends to criticize others when working in groups	Disagrees with others yet attempts to give positive feedback to group members.	Compliments and gives constructive feedback when working in groups	
		Inhibitory Control and Self-Regulation	Either tends to dominate or stays very quiet in a classroom discussion/group activity	Engages in a discussion when prompted or only when he or she is interested in that topic.	Engages well in collaborative discussions (speaks as well as listens to all)	
		Conflict Resolution	Has many disagreements with classmates or teachers and displays reluctance to resolve them	Has some disagreements with classmates or teachers but attempts to sort them out	Has a few disagreements with classmates or teachers but soon communicates with the concerned person to sort it out	

Assessment Tool

Sr.no	Competency/Skill	Criteria	Level 1	Level 2	Level 3	R
4.	Communication Skills <u>Operational Definition</u> Communication is an ongoing process of sending and receiving messages that enable humans to share knowledge, attitudes, and skills ⁶	Social Etiquette	Finds it difficult to stay on the topic and often interrupts others	Mostly stays on the topic. If guided, does not interrupt and waits for turn	Maintains topic and takes turn independently while speaking	
		Active Listening	Listens to teacher and/or classmates with difficulty	Listens to teacher and/or classmates when reminded	Willingly listens attentively to teachers and/or classmates	
5.	Emotional Competence <u>Operational Definition</u> The ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions ⁷	Emotion Knowledge	Identifies one's feelings (I am happy, I am sad)	Identifies and expresses one's feelings. Makes an attempt to understand feelings of others	Identifies and expresses own feelings and also shows support to others feelings/emotions	
		Emotion Reactivity and Regulation	Tends to get angry or upset when mistakes are made (by self or others)	May get angry or upset when mistakes are made but tries to control self.	Usually accepts making mistakes without getting upset/angry	
		Emotion Resilience	Tends to give up when something is challenging.	Continues to try when faced with challenges but stops when it gets too frustrating.	Is persistent when faced with challenges and looks for new ways to tackle them (e.g. seeking help)	

References:

¹ For more information on 21st century skills, visit: <http://www.battelleforkids.org/networks/p21>

² Sternberg R.J. (1986) Critical Thinking: Its Nature, Measurement and Improvement .

³ Robert E. Franken (1993) Human Motivation , 3rd ed., (pp.396)

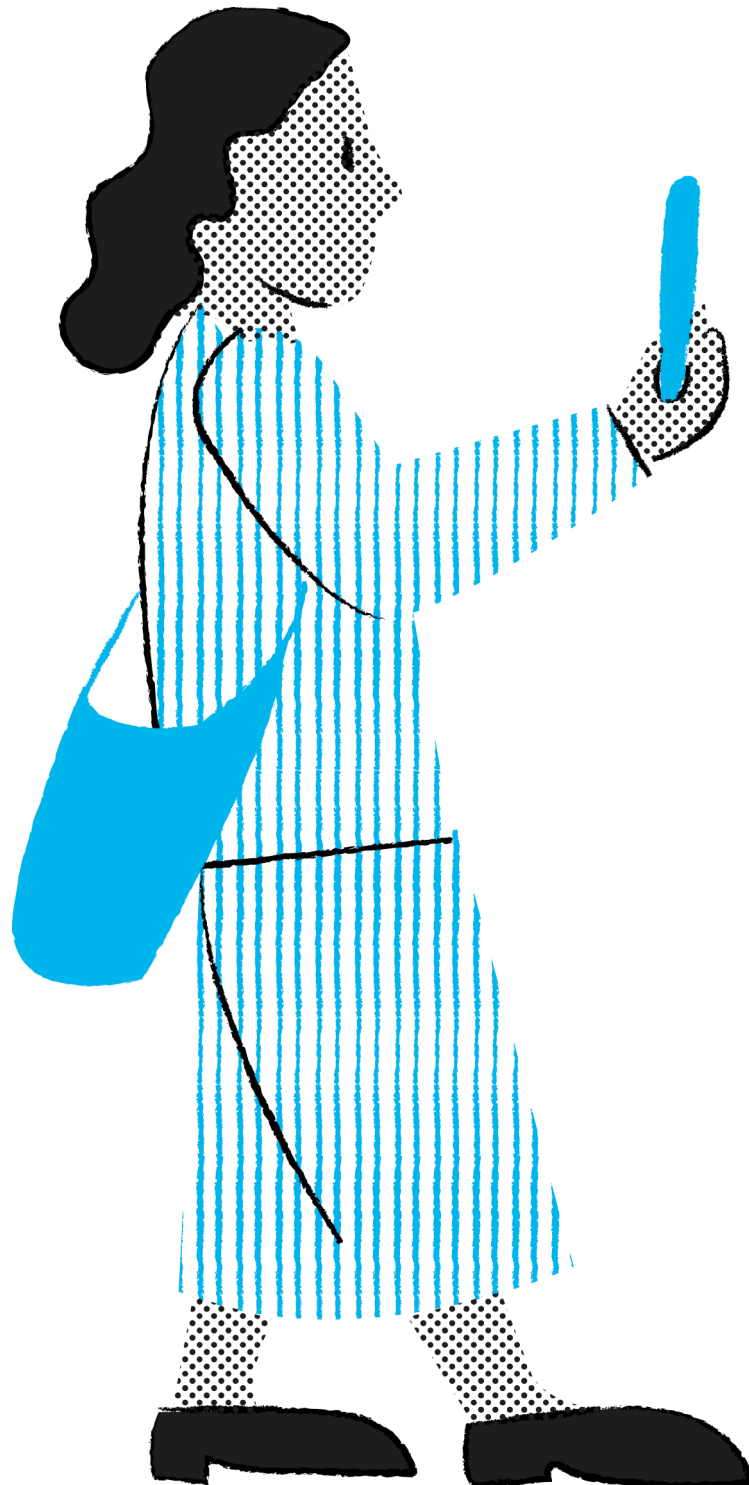
⁴ Simonton, D. K. (2018). Defining Creativity: Don't We Also Need to Define What Is Not Creative?. The Journal of Creative Behavior , 52 (1), 80-90 .

⁵ OECD (2013). Programme for International Student Assessment (PISA) 2015: Draft Collaborative Problem Solving Framework.

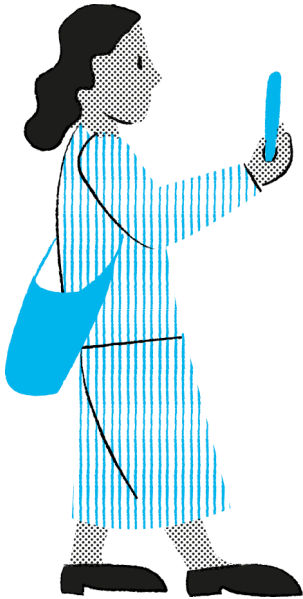
⁶ Miller, P.W. (1988). Nonverbal communication. National Educational Association of the United States.

⁷ Peter Salovey and John D. Mayer (1990), "Emotional Intelligence," Imagination, Cognition, and Personality 9, no. 3: 185–211.

Phase 1 Observe and Document



Phase 1 Observe and Document



Tips and Reminders:

- You could make a visual presentation showing a design project - from site to sketch and finished product.
- You could collect maps of the neighbourhood to start a collection of information on the area (see resources page opposite).

Assessment:

1. General rubrics for grading should include: Critical Thinking, Creative Thinking, Collaboration and Communication. (See the Muktangan 21st Century Skills page)
2. Evaluation sheets can be filled in after each session, as a way of tracking how each child is progressing. These can be collected from all facilitators after the session.

Activity 1: Which Neighbourhood?

Time
1 or 2
hours

Summary:

In this session, we identify the neighbourhood we will focus on for the duration of the project.

Equipment:

Several large sheets of paper (1 sheet/group), pens, blackboard, chalk, several large printed maps of local area (1 map/group), bluetak, computers/tablets if available.

Preparation:

- Desktop research into the local neighbourhoods and maps available
- Prepare google map of the area

1. Introduce the project.

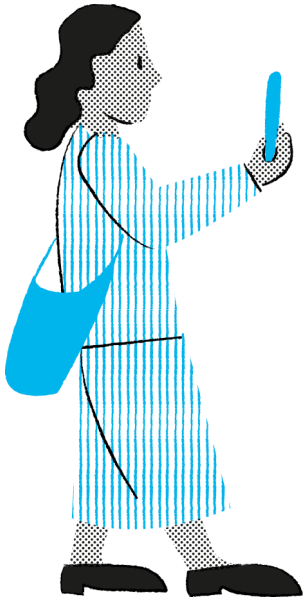
What are the aims and outputs of the project overall? **10 minutes**

2. Define the borders of the neighbourhood – what area will you focus on? What are the landmarks? What makes this area different from other areas? **10 minutes**

3. Each group has a large paper base-map of the area. Each group can annotate their map, showing landmarks, important activities, where they live, what they know about the area. Are the boundaries correct? If not how should they be? Are there different areas within the neighbourhood? If so what are they and why? **30 minutes**

4. (optional) In Google, make a new 'my maps' map for the project (if you have access to digital resources). This will be used throughout the project to build an online database of information that can be shared within the class, and potentially externally once the project is finished. Identify the boundaries and other information on the google map. **30 minutes**

Phase 1 Observe and Document



Tips and Reminders:

- Be patient, listen to the responses, guide, work closely, answer questions, probe.
- Mediate discussions around activities: what is the most prevalent activity? Why is this? If there is something that you know and that the children haven't suggested, try to encourage them to find the answer using questions.
- Collect evaluation sheets from all facilitators after the session.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 2: Which Communities?

Time
1 hour

Summary:

In this session, we identify the communities that live and work in the neighbourhood. Who will we be engaging with?

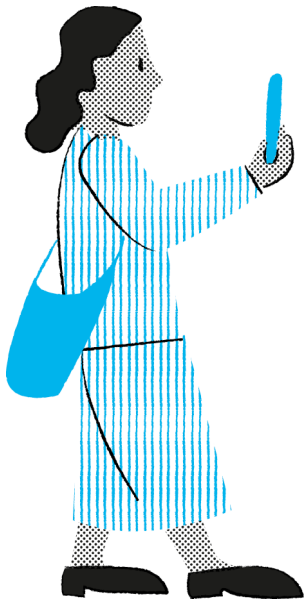
Equipment:

Several large sheets of paper (1 sheet/group), pens, blackboard, chalk, 1x A3sheet/student and pens, computers/tablets if available.

Preparation:

1. Define the word 'community'. Give examples. 10 minutes
2. Which community groups can you think of that live or work in your area? Desktop research if available and brainstorming. 15 minutes
3. What particular activities do these communities or groups carry out? For whom? Why? Can you see them or are they hidden? 10 minutes
4. In groups, discuss the neighbourhood and inhabitants activities found there. Use the large sheets of paper to brainstorm - make a mind map diagram. 10 minutes
5. Each group presents their findings to the class. 15 minutes

Phase 1 Observe and Document



Tips and Reminders:

- Concept diagrams should cover: how the place makes you feel; what crafts are happening - what is being made?; What are people doing?; What do you like? What would you like to change?
- Collect evaluation sheets from all facilitators after the session.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 3: Walkabout Prep.

Time
2 hours

Summary:

In this session, we prepare to go into the neighbourhood, making sure we have organised everything we need.

Equipment:

A4 sheets of paper and pens, cameras (at least 1/ group), example concept diagrams printed, blank sheets of paper for concept diagrams.

Preparation:

- Source cameras, make sure they work/have power/have memory cards if digital or film if not.
- Prepare base maps for the clipboards to be used during the following session.
- You can prepare a presentation explaining what a walkabout is, using images.

1. Introduce walking as a way to explore the neighbourhood, to gather a 'sense of place', in advance of the following session. **10 minutes**

2. Discuss the walkabout aims: what do you want to observe? What interests you? **10 minutes**

3. Prepare information about the neighbourhood and documentation methods.

- Write down your criteria for observation

- Give examples of what these might be, allowing the children to come up with their own directions of inquiry **5 minutes**

4. Create a concept diagram: See 'How to' illustration opposite. **10 minutes**

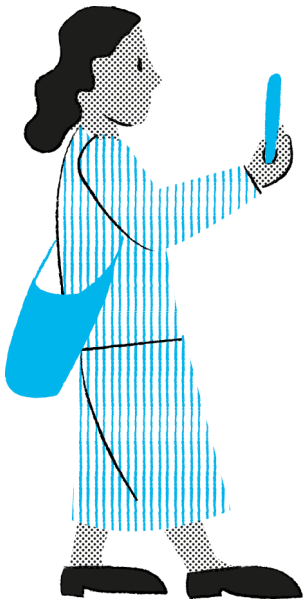
- Demonstrate making a concept diagram: and show how it is used. Then facilitate the making of the group concept diagrams for use during the walkabout in the following session.

5. Each group presents their (empty) concept diagrams to the rest of the class. **10 minutes**

6. Introduce using cameras for the following session - how you might document the neighbourhood. Remember, if there are people in your photographs, you must ask permission first before using them. **10 minutes**

7. Demonstrate how to use the clipboard maps and how they should document the routes they will take next week. **5 minutes**

Phase 1 Observe and Document



Tips and Reminders:

- Determine when the best time is to do the walkabout - morning or afternoon?
- Try to encourage groups to go in different directions, so that there is an even spread of research across the neighbourhood.
- Collect evaluation sheets from all facilitators after the session.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 4: Walkabout

Time
2 hours

Summary

In this session, we explore and document the neighbourhood by walking.

Equipment

Printed concept diagrams on clip-boards, pens and cameras.

Preparation

- Parental and necessary school consent forms and sign-offs.
- Organise and confirm acceptable number of facilitators per group of children. Additional volunteers may be necessary.
- Define responsibilities of children on the way and during the work. Photographer, note-taker, observer etc...
- Teachers may want to go and visit the place prior to the activity. You could do a test run with the other facilitators, to make sure you have identified any dangers and mitigated any risks prior to the exercise.

1. Walk from your school to the neighbourhood. Determine a meeting point and a time by which to return. **15 minutes**

2. Get into your groups and make sure everyone is accounted for and your facilitators are with you at all times. **10 minutes**

3. Walk slowly around your neighbourhood, while documenting your route, taking photographs in small pre-prepared groups. Share roles, everyone should have a turn at taking photographs and taking notes. **60 minutes**

4. What is being made in your neighbourhood? Walk with your group to identify crafts and fabrication happening in the neighbourhood. Help the children identify things being made that they might not have noticed.

5. What are people doing?

6. What do you like or dislike?

7. Try to take different routes from the other groups, so that there is a wide area that is documented in your concept diagrams.

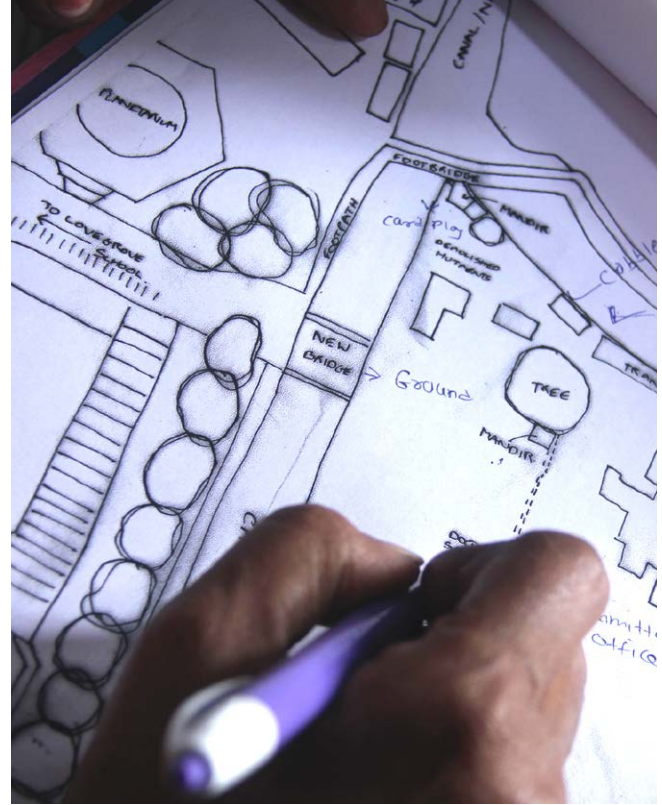
8. Meet back at the meeting point at the specified time. Have a snack and a break! **15 minutes**

9. Take a group photo near a neighbourhood landmark. **5 minutes**

10. Walk back to the school with the rest of the class and facilitators, making sure no one has been left behind. **15 minutes**



Exploring the neighbourhood Mariamma Nagar during Walkabouts, 2014.



Making notes during Walkabouts, 2014.



Documenting Mariamma Nagar, 2014.



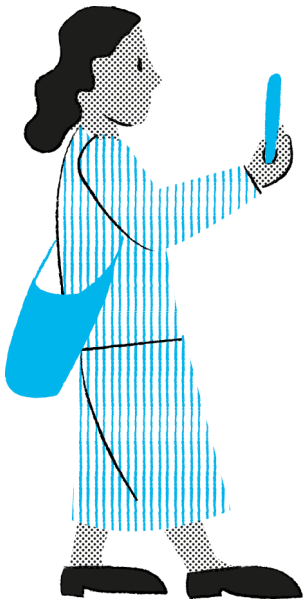
Documenting likes and dislikes, 2014.

Concept Diagram

Use this sheet to gather observations of your neighbourhood. Before you head out on your walkabout, decide what you want to observe. Document your likes and dislikes, what people are doing and what people are making. If you like, you can add other themes that you can choose yourself, like things you can't see such as your feelings, or even sounds and smells.

Observations				
Stop 1				
Stop 2				
Stop 3				
Stop 4				
Stop 5				
Stop 6				
A. Likes				
B. Dislikes				
C. What is being made?				
D. What are people doing?				

Phase 1 Observe and Document



Tips and Reminders:

- While some groups are thinking, other groups can be doing other exercises.
- Collect evaluation sheets from all facilitators after the session.
- Each session might need a reminder at the beginning - try getting the pupils to close their eyes and visualise the neighbourhood to remember their routes and how they felt, what they saw.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 5: Map Making

Time
2 hours

Summary:

In these sessions, we make a map of the neighbourhood together, using printed photographs, annotation and drawings.

Equipment:

Large white (bed)sheet, completed concept diagrams, (fabric) markers, printed photos from walkabout

Preparation:

- Prepare the base-map.
Show: landmarks, main streets, any green spaces, recognisable elements and spaces.
- Print the photographs and split evenly into the number of groups.

1. In the classroom on the pre-prepared map base, group by group, identify your walkabout routes from memory, they can interlink. Where did you go and what did you see? 10 minutes

2. Facilitate simultaneously the following activities: 40 minutes

- Place your printed photographs along your routes. You can glue these in place when you are happy with their position.
- Write down/illustrate your field notes from your concept map.
- Locate and represent the different activities you identified in your area.

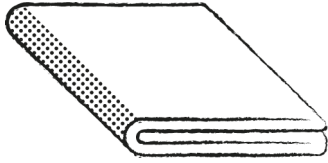
What were people doing?
Which spaces were they using and how?

- You can draw things you feel are missing from your notes and photographs.
- You can use annotation to add information too.
- Finish composing your map. Have you included everything you noted on your walkabout? Is there a north sign? What is the name of the map? Are your names on it? What about the date?

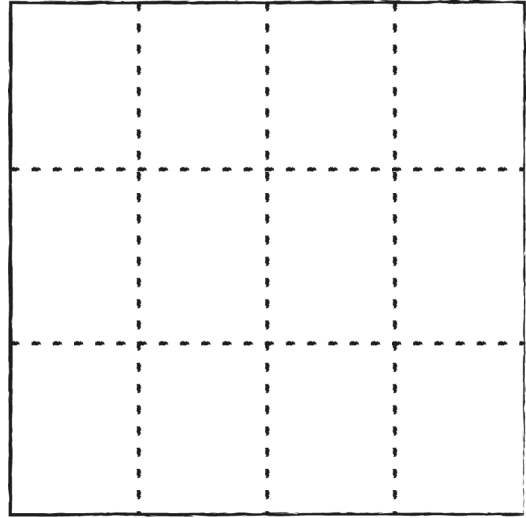
3. Mapping Discussion in final session: What can we learn from this map of the neighbourhood? What do we like about it? What is our favourite part of it?

20 minutes

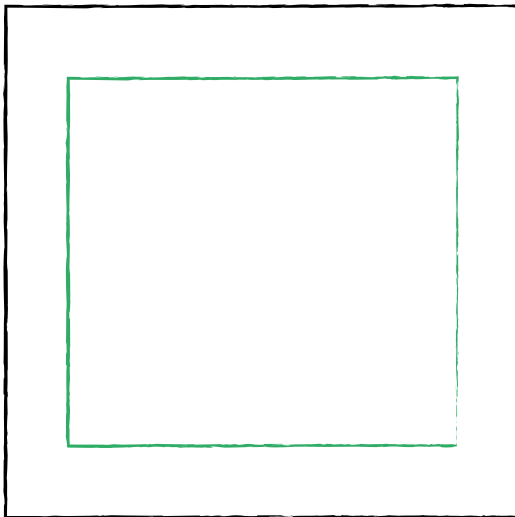
Making a Map Base



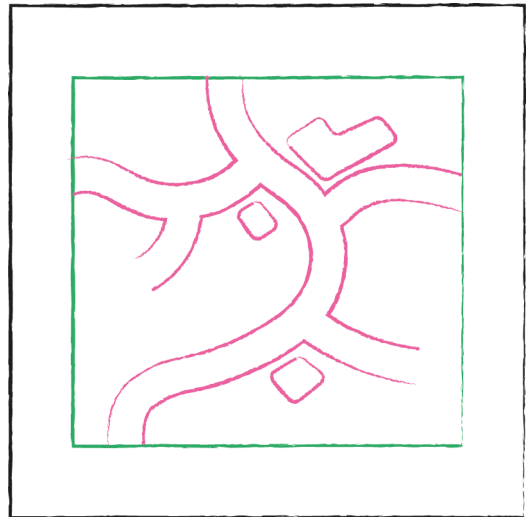
Find an old bedsheet



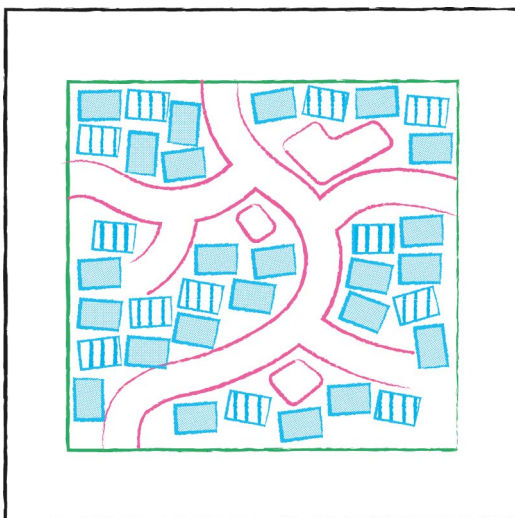
Unfold it



Using fabric pens add a neat line



Add some Landmarks



Add Photos and Drawings



Add Annotations, Title, Names, Date and North



Reflecting on the neighbourhood in the classroom.



Mapping learning in the neighbourhood, locating photographs.



Adding drawings to the map.

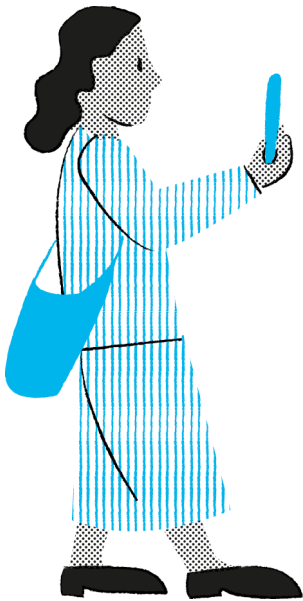


Adding notes and annotations to the map.



Detail from the map.

Phase 1 Observe and Document



Tips and Reminders:

- Even lighting is key to a good picture - think about positioning the map opposite a window rather than beside a window.
- Remember to back up your digital files often!

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 6: Map Documentation

Time
1 hour

Summary:

In this session, we document the map photographically, so that we can refer to it in the future and share it digitally.

Equipment:

A good digital camera, a tripod, good/even lighting (may need to hire these)

Preparation:

- Source the equipment and test that it works.
- Allocate a large wall on which to hang the map, or set up an alternative.
- Ascertain with the school faculty that the class can spend a session near the wall, if it is not in the classroom.

1. Set up the map so it is flat and equally lit. You might need to source lighting for this. **20 minutes**

2. Document your map carefully by taking photographs.

30 minutes

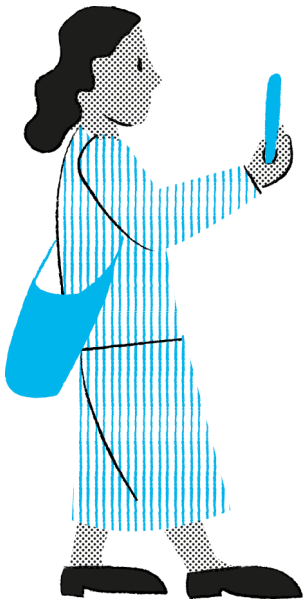
- Photographs should be of the whole map, high resolution. Can you see the detail of the map if you zoom in?
- Everyone can have a go at taking a photograph with the camera, using the tripod.
- Take photographs of details too - drawings, photo-collages etc...
- What are the most interesting areas? Why?

3. Download the images onto a computer. Check that they are of good quality.

5 minutes

4. Put the images in the project folder. **5 minutes**

Phase 1 Observe and Document



Tips and Reminders:

- How does the craftsperson interpret the map naturally?
- Documenting is important - but remember ethics, positionality and consent of those you are documenting.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 7: Map Translation

Time
varies

Summary:

These sessions are optional - they may be conducted with or without the schoolchildren, depending on availability and desire. This activity aims to develop a crafted translation of the neighbourhood map, working with a chosen craftsperson/craftspeople to create an artefact.

Equipment:

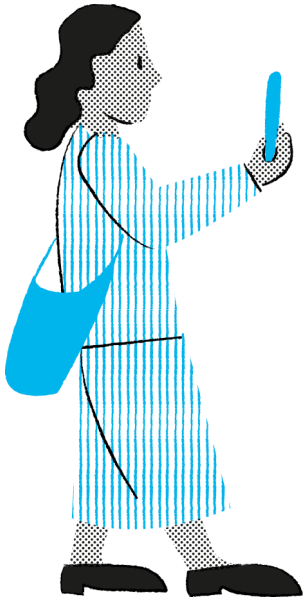
The neighbourhood map, funding to commission a craftsperson.

Preparation:

- Identify local crafts/craftspeople/makers who could translate the neighbourhood map
- prepare the map for sharing either digitally or in person.

1. Recreate the map with local crafts and/or craftspeople.
2. Choose a local maker who would like to be commissioned to translate the map in their material and method of choice.
3. This can be done with schoolchildren if they would like to and the school allows.

Phase 1 Observe and Document



Tips and Reminders:

- Could you present your map and findings to the rest of the school in assembly?
- Could you also exhibit in the university/ community space?

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 8: Map Exhibition

Time
1 hour

Summary:

In this session, we identify the neighbourhood we will focus on for the duration of the project.

Equipment:

Materials with which to hang the fabric map might include: a long bamboo stick, some rope, hooks and nails, a needle and some strong thread.

Preparation:

- Liaise with school for exhibition permissions and fire safety etc.

1. Display the map(s) somewhere public. They can be hung vertically or shown flat on the ground, depending on their material.

30 minutes

2. You may need to make a frame - depending on school space.

10 minutes

3. Facilitate developing a presentation in groups. Help the pupils evaluate their own presentations.

20 minutes

4. Organise a time to present the map to the rest of the school.

Phase 1
Observe and
Document

Resources



Neighbourhood map of Mariamma Nagar by Muktangan Schoolchildren, 2014.



Embroidered Neighbourhood map of Mariamma Nagar, made by craftspeople in Mariamma Nagar, 2014.

Phase 2

Enquire and Discuss



Phase 2 Enquire and Discuss



Tips and Reminders:

1. This could also be run as an additional walkabout in the neighbourhood, if the school is keen and there is enough time.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 9: Material Palette

Time
1 hour

Summary:

In this session, we determine what materials and crafts are available to us to use in our designs. by brainstorming the crafts seen and documented during the Walkabout project, to create a 'palette' of design materials and fabricators.

Equipment:

Large sheets of paper for brainstorming (1x per group) and pens, printed photographs from previous session showing crafts, map should be accessible.

Preparation:

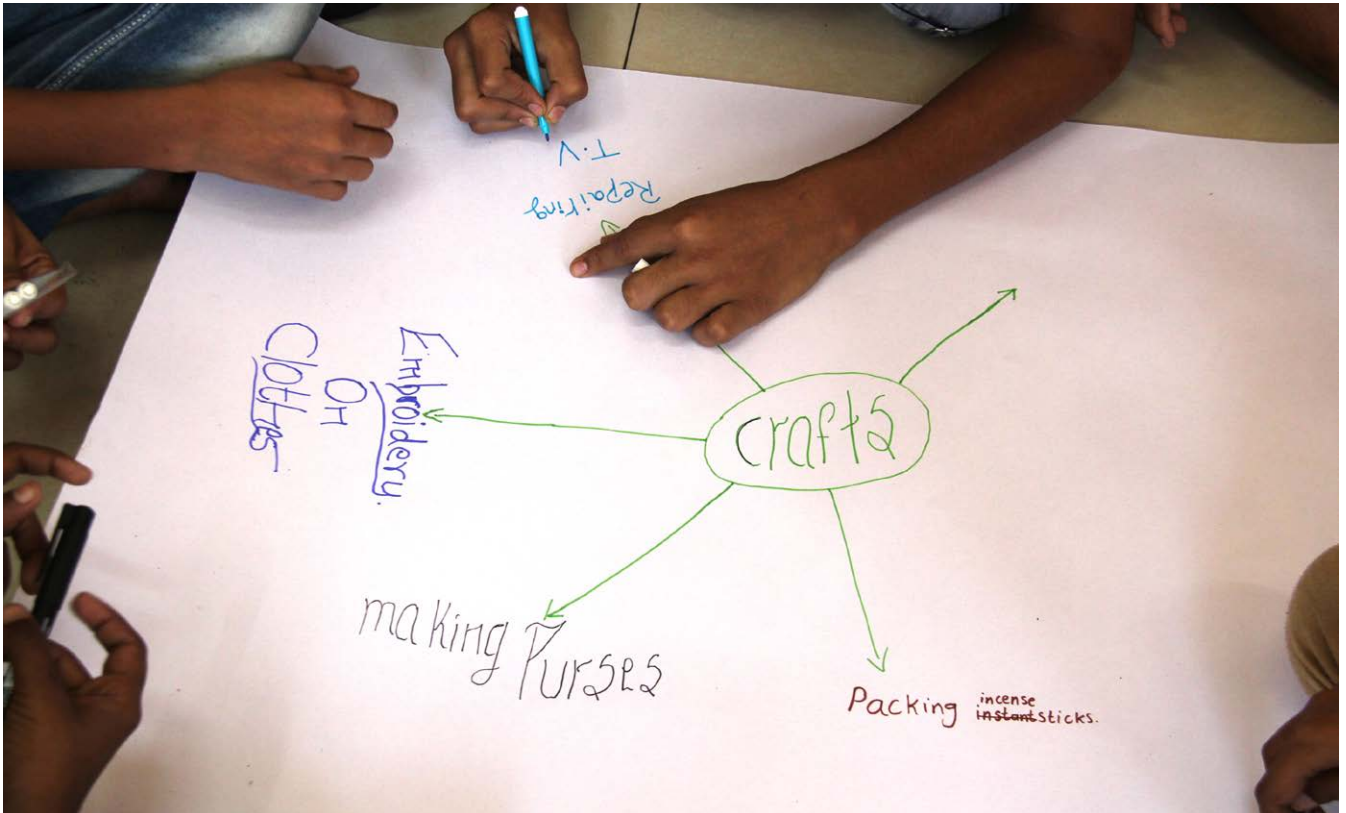
- Make a list of the crafts you know about already. These can be used as prompts during the session.
- Re-visit the neighbourhood to see if there are any that were missed. Take any additional photos that are necessary.

1. Recollect the walkabout session and what you observed being made. Who was making what? How? With what? **15 minutes**

2. Each group can look through their notes and photographs from the walkabout, and look at the map, to see what was being made. Each group makes a list of what they found. **15 minutes**

3. Make a combined list of things that were being made after each group presents what they found on the blackboard. **15 minutes**

4. This will be your material/craft palette for the rest of the project. Discuss the most interesting materials that could be used in design projects? Think about waste and sustainability too. **15 minutes**



Brainstorming settlement crafts in the classroom, 2015.



Preparing food and sewing garments



Making/selling tea



Garland-making



Tailoring



Embroidery



Making metal boxes



Tips and Reminders:

- Remind the pupils about the material palette. You can have a list and pictures on the classroom wall if there is space.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 10: Design Themes

Time
1 hour

Summary:

In this session we determine the design themes for the continuation of the project.

Equipment:

Bring the neighbourhood map back into classroom, if it isn't already there. 1x A4 sheet of paper for each student.

Preparation:

- Make a list of the crafts you know about already. These can be used as prompts during the session.
- Re-visit the neighbourhood to see if there are any that were missed. Take any additional photos that are necessary.

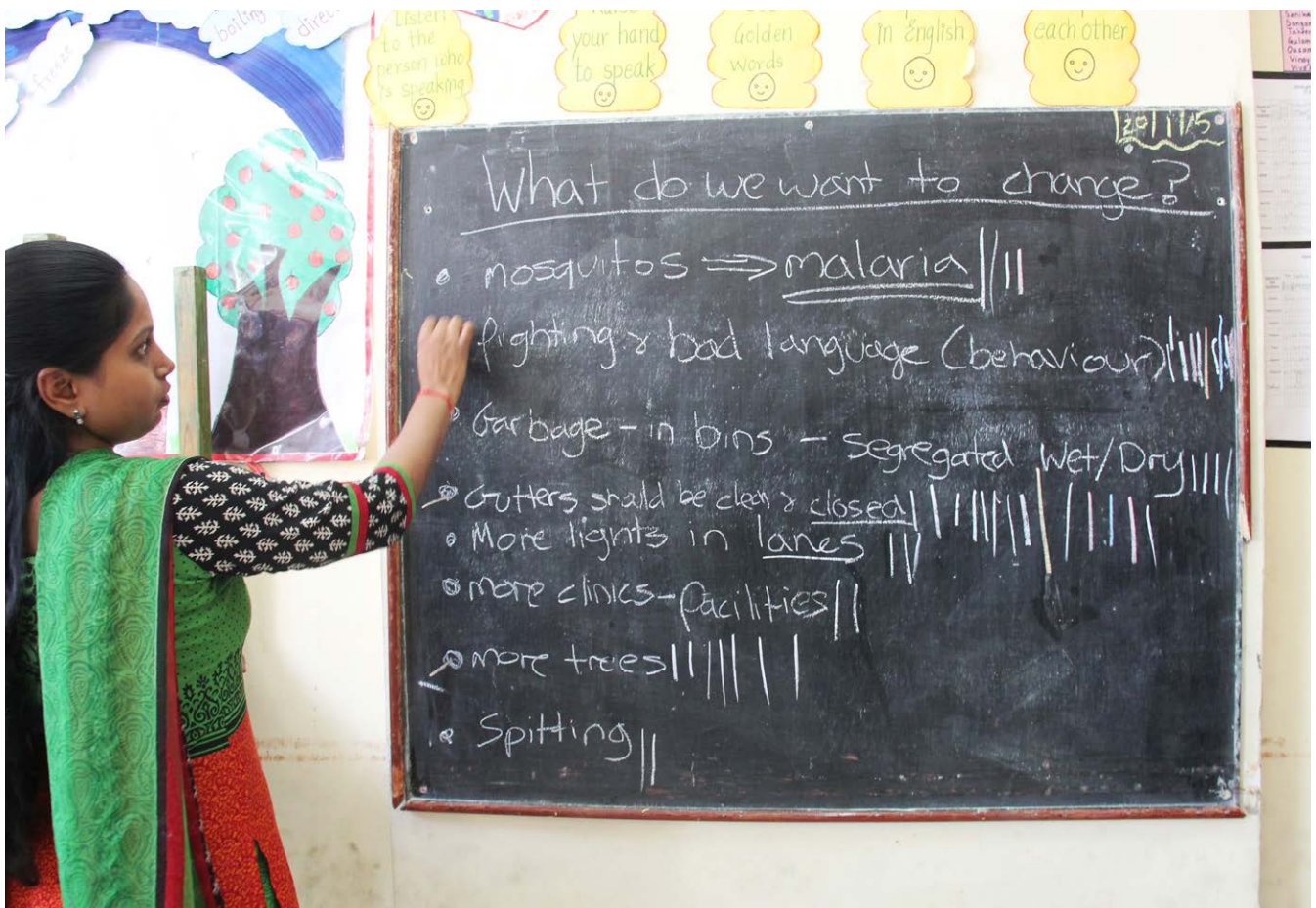
1. Quick Recall: Think back to your first walkabout - what did you like or dislike, what would you like to change? 10 minutes

2. Look at your neighbourhood map for clues and reminders. In groups, help the children think about what they saw and felt during their walkabout. Go around the room, and everyone can have a chance to say a like or a dislike. 10 minutes

3. Write all the themes on the board and hold a vote for project themes. 10 minutes

4. Pick the most popular 4 or 5 themes. 10 minutes

5. Make equal groups of children for each theme, and identify a facilitator for each group. These themes and groups will remain for the rest of the project - to design, make, present and assess the neighbourhood interventions. 15 minutes



The class voted for mosquitoes, open gutters, more trees, fighting and bad language and waste management as their chosen design themes.



Pupils identified waste management as a neighbourhood design theme.



They also observed open gutters, and found that the allowed water to stagnate, creating health risks to local residents.

Phase 2 Enquire and Discuss



Tips and Reminders:

- For pointers on ethics, you can refer to: www.practisingethics.org/practices a website showing research on how to deal with ethical dilemmas as a built environment researcher. This research is by Jane Rendell, David Roberts and Yael Padan, a collaboration between the Bartlett Ethics Commission and Knowledge in Action for Urban Equality (KNOW) at University College London.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 11: Interview Preparation

Time
1 hour

Summary:

In this session we prepare a questionnaire that we will use to interview the neighbourhood inhabitants, in relation to our chosen design themes.

Equipment:

Large sheets of paper and pens.

Preparation:

- Organise the next outdoor session with school faculty.
- Parental approval for field trip.

1. Introduce interview ethics. For this you can do a presentation on the do's and don'ts of interviewing. You can include consent for audio, video and photography. And how to make an information sheet for the research project.

20 minutes

2. In your theme groups, think of questions you would like to ask the neighbourhood residents. Do they think there is an issue? Have they already resolved it somehow? Do they know someone who has? What did they do? 20 minutes

3. Once you have made a list of questions, you can do a mock interview. Take turns at being journalists: who asks the questions and who answers? Who will take notes? Will you do audio

recordings? 20 minutes

4. Prepare the students for the next session, interviewing in the neighbourhood.



Tips and Reminders:

- Each facilitator is responsible for their allocated group.
- Facilitator's should encourage the children to ask for interviewee consent before beginning interviews.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 12: Community Interviews

Time
2 hours

Summary:

In this session we find out what the community thinks about the chosen design themes.

Equipment:

Cameras (optional), audio recorders, clipboards and pens with prepared questions printed on A4 sheets.

Preparation:

- Clipboards with printed questions
- Parental approval for all students

1. Walk into the neighbourhood in your groups. Identify the meeting point. 10 minutes

2. Walk around and interview residents using you pre-prepared questionnaires. 50 minutes

3. Remember to think about ethics and obtain consent for all communication first. Make sure you aren't making anyone feel uncomfortable.

4. You can record conversations using phones (following consent), and take notes using pens and clipboards.

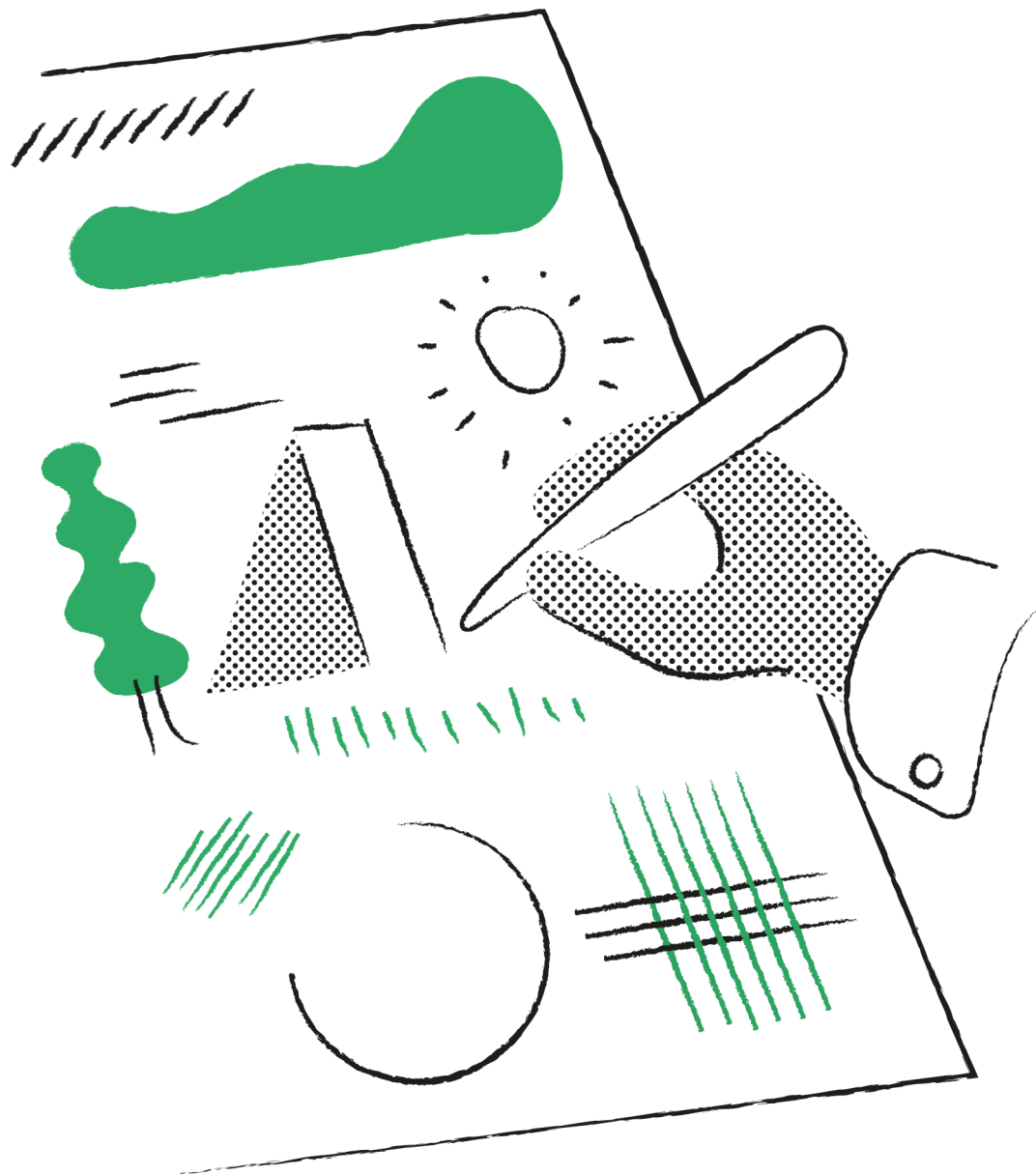
5. Meet at the designated point and head back to the classroom. 10 minutes

6. Debrief - what was expected? What was

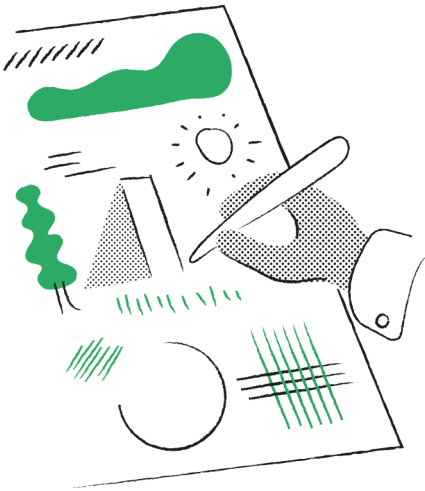
surprising? 10 minutes

7. Collate the information ready for use in the next sessions. 10 minutes

Phase 3 Design and Draw



Phase 3 Design and Draw



Tips and Reminders:

1. Each facilitator is responsible for their allocated group.
2. Go around each group and help individual children who need attention.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 13: Concept Design

Time
1 hour

Summary:

The groups will have already chosen their theme, so this session will focus on a design concept, and drawing a sketch individually.

Equipment:

A3 sheets for all children.
Different types of drawing materials - pens, pastels, pencils, coloured and black.

Preparation:

- Put list of crafts and issues on blackboard.
- Prepare A4 sheets with the lists, for each group.

1. Brainstorm designs ideas for the design themes in pre-prepared groups. This can be done on the computer/tablets if available.

15 minutes

2. If access to the internet, research designs for similar issues elsewhere.

3. Which crafts will you use for your designs?

10 minutes

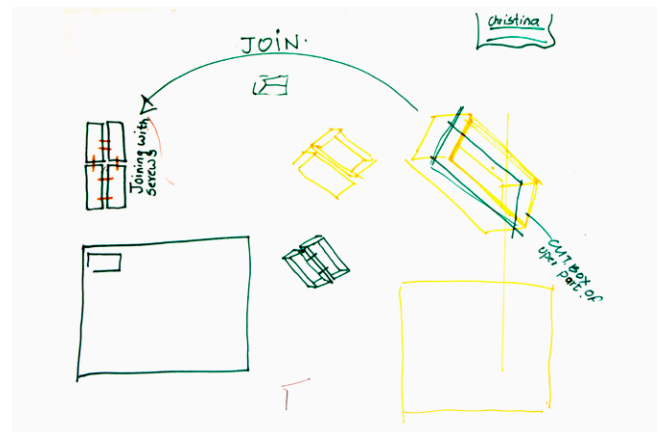
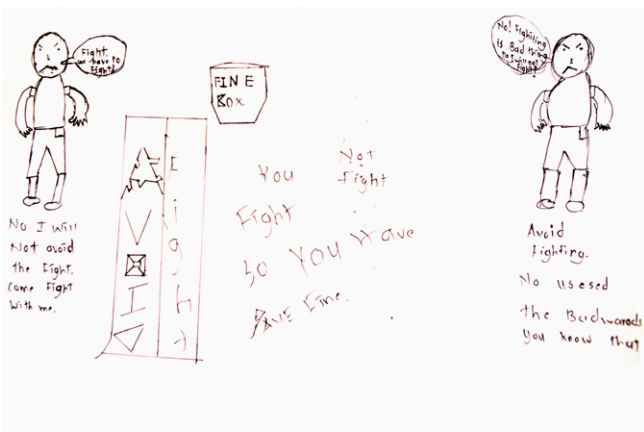
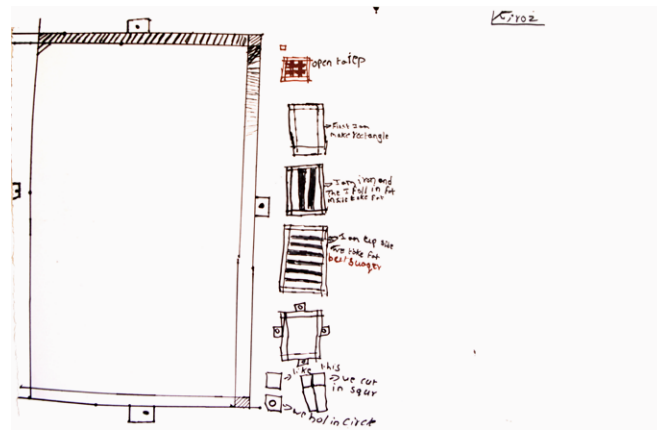
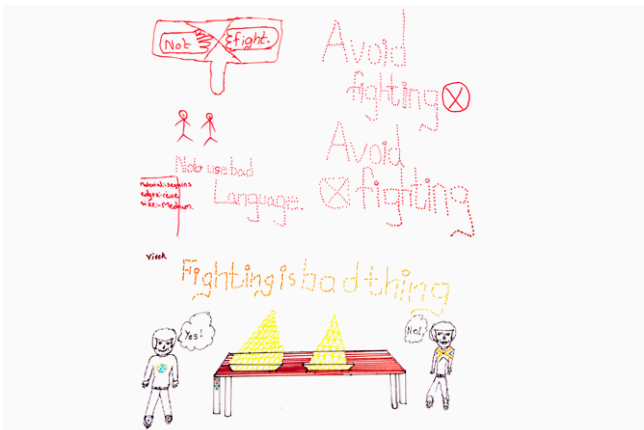
4. Encourage creative thinking - what material to use for each issue.

5. Sketch your design on a sheet of paper, using whichever drawing equipment you like.

30 minutes

6. Present your sketch to the rest of your group.

5 minutes



Three pupils first sketch designs for a debating table, fine box and banner to reduce Fighting and use of bad language in the settlement.

Two first sketch designs for a new gutter cover design using tin.

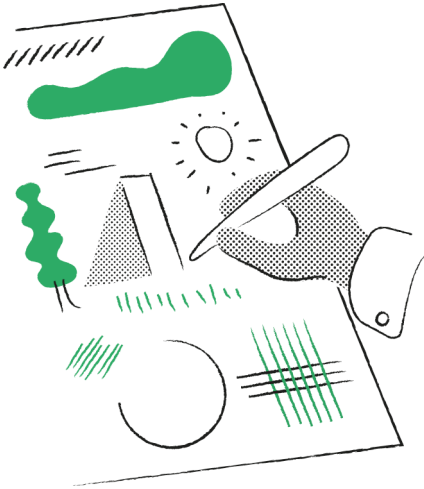


Test embroidery pieces before the final prototype is made.



How to use tin box lids to make a gutter cover?

Phase 3 Design and Draw



Tips and Reminders:

- Each facilitator is responsible for their allocated group.
- Go around each group and help individual children who need attention.
- This may need an additional session - you can decide at the end of the first session how developed the design drawings are.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 14: Design Drawing

Time
2 hours

Summary:

This session aims to demonstrate and facilitate the development of detailed design drawings with the class.

Equipment:

Examples of design drawings, in different styles. A2 sheets of paper, rulers, pens.

Preparation:

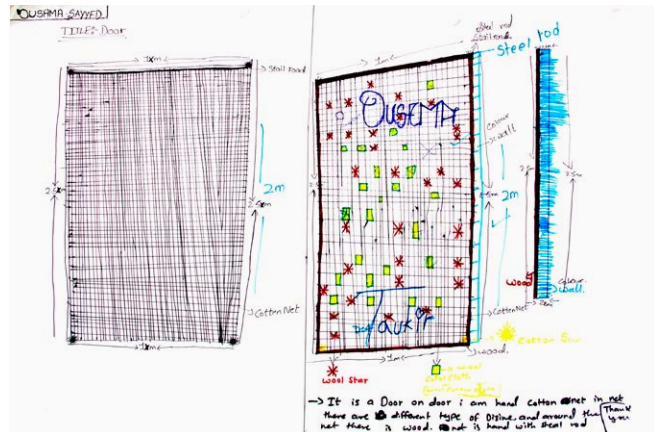
- Print out/make a presentation of different design drawing methods: plan, section, elevation, axonometric, annotated, measured, scale...
- Hand out the sketches from the previous session.

1. Explain the different types of design drawings that exist: plan, section elevation, axonometric, annotated... 15 minutes
2. In your groups, redraw more detailed, annotated drawings individually.
 - Think about how this drawing needs to communicate with the craftspeople who will make your design. 45 minutes
3. Help the children each develop a more detailed drawing of their concept design. Are their materials working?
 - Facilitate adding detail to drawings. Measurements, annotations, colours... 40 minutes

4. Present designs to the class when drawings are finished. 20 minutes



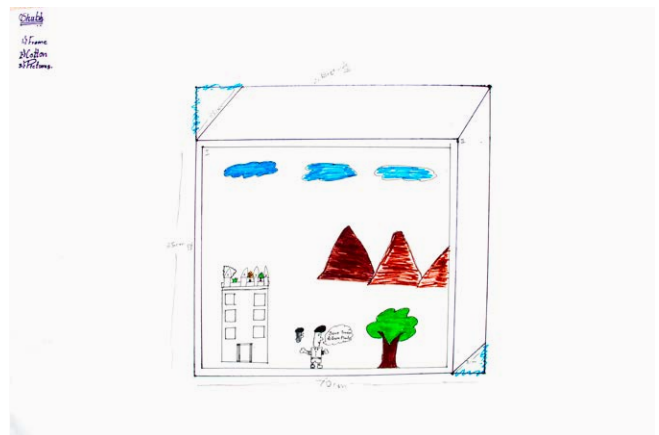
Add measurements to the drawings.



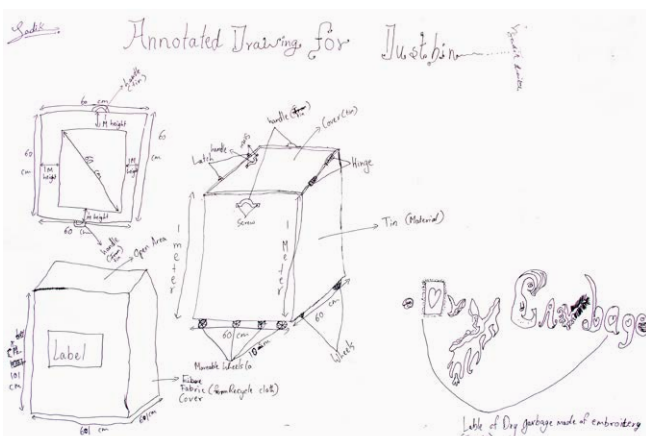
Examples of final design drawings for mosquito nets for doors and windows.



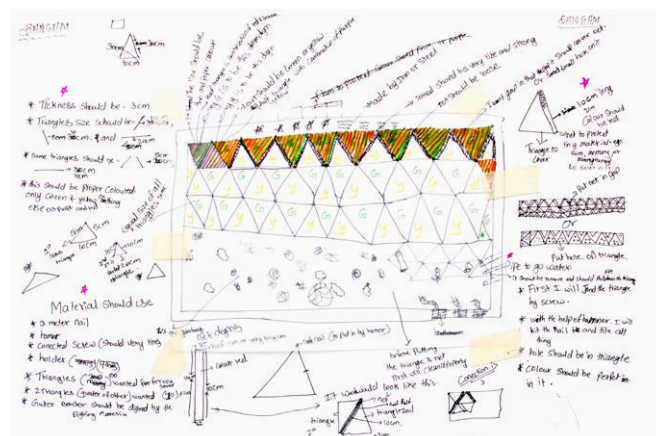
Add colour and detail to the drawings.



A sketch design for an embroidered kitchen planter.

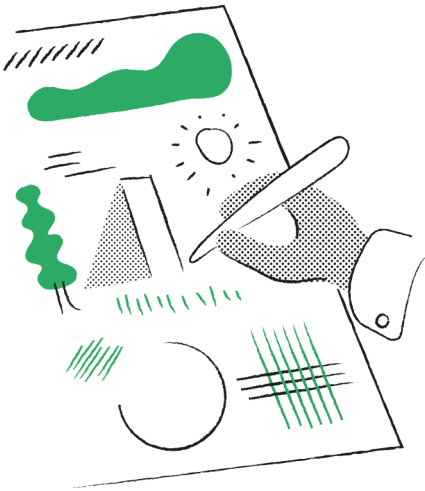


Design drawing for a recycling bin made from tin.



Design drawing for a new gutter cover made from tin lids.

Phase 3 Design and Draw



Tips and Reminders:

- Each facilitator is responsible for their allocated group.
- Go around each group and help individual children who need attention.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 15: Choose Designs for Fabrication

Time
1 hour

Summary:

During this session a design will be chosen or combined from multiple designs within a group, for commissioning to the fabricators.

Equipment:

Large/A1 sheets for each group and pens.

Preparation:

- Print out/make a presentation of different design drawing methods: plan, section, elevation, axonometric, annotated, measured, scale...
- Hand out the sketches from the previous session.

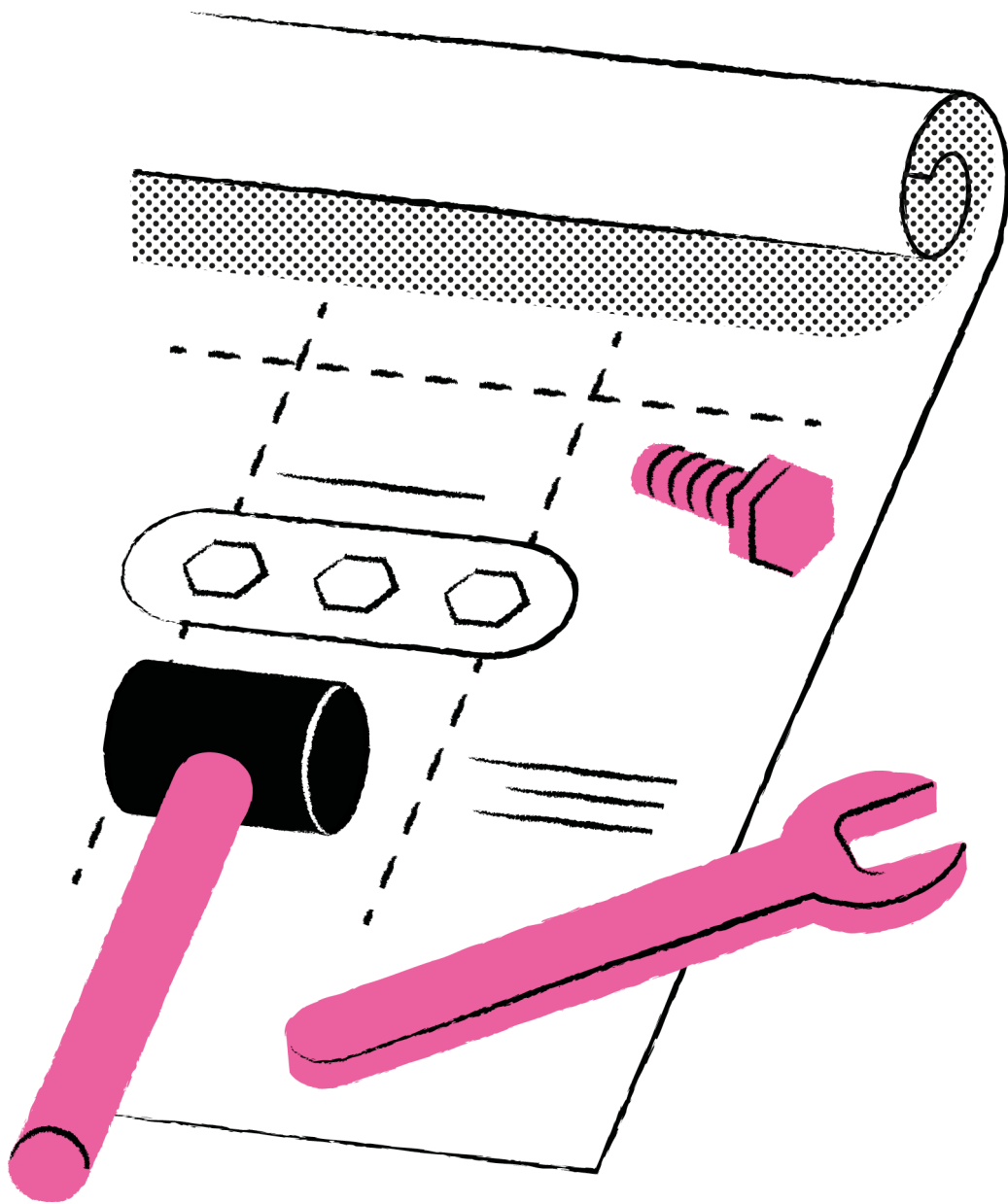
1. Facilitate a group combination of designs, so that every student has some piece of their design in the final proposal.

- The combined design should be drawn collectively on the large sheet of paper.
- Help any children that need additional support with their work. 45 minutes

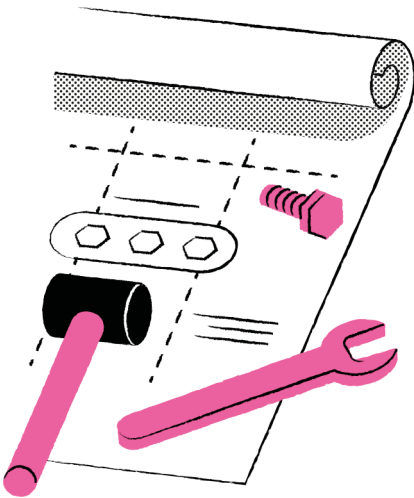
2. Each group presents their combined design to the rest of the class, with a Q and A relating to how it will be made and by whom.

- Is the design drawing ready to be looked at by a fabricator? 15 minutes

Phase 4 Commission and Make



Phase 4 Commission and Make



Tips and Reminders:

1. Each facilitator is responsible for their allocated group.
2. Go around each group and help individual children who need attention.

Assessment:

3. Remember to use the 4Cs to track and evaluate the sessions.
4. Collect evaluation sheets from all facilitators after the session.

Activity 16: Talking to Makers

Time
1 hour

Summary:

During this session the groups will be able to discuss their designs with the fabricators.

Equipment:

Prepared design drawings from previous session.

Preparation:

- Invite the Craftspeople to the school, or meet them in a community space.
- Organise remuneration for this time.
- Make sure consent forms have been signed and the school have cleared the makers as visitors.
- Have all the design drawings ready for use during discussions.
- Set up tables for the craftspeople to sit at and discuss designs with the groups.

1. Invite each maker to present themselves and what they do.

20 minutes

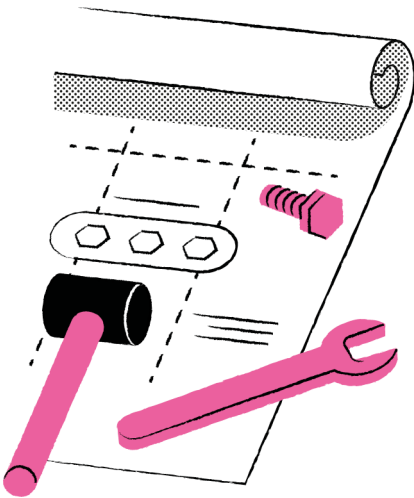
2. Each maker can set up at a table in the classroom.

3. Ask the students to present their groups and their design ideas. Each group can visit the maker(s) that they want to work with, to discuss their design, and work through any amendments/issues with the fabricator.

40 minutes

4. Make sure both the fabricators and the pupils are happy to commence fabrication of the prototypes.

Phase 4 Commission and Make



Tips and Reminders:

1. Each facilitator is responsible for their allocated group.
2. Go around each group and help individual children who need attention.

Assessment:

3. Remember to use the 4Cs to track and evaluate the sessions.
4. Collect evaluation sheets from all facilitators after the session.

Activity 17: Prototype Check

Time
1 hour

Summary:

During this session the students will assess the prototypes fabricated by the neighbourhood makers.

Equipment:

Prototypes, large sheet of paper and pens, per group.

Preparation:

- Approximately 1 month fabrication time:
Facilitators document the process photographically.
- Presentation of fabrication process
- Organise transport, pick up delivery and carrying to classroom.
- Make sure the objects are not dangerous in any way (sharp, breakable etc).

1. Bring in the fabricated objects to assess them in the classroom. 10 minutes

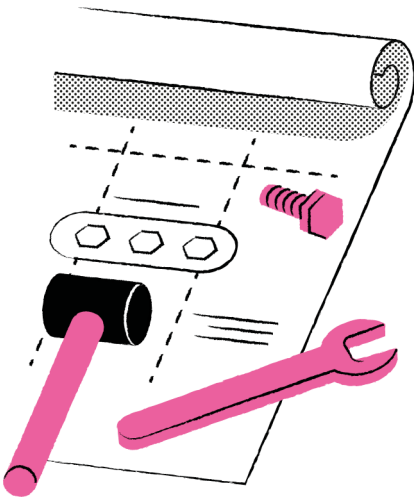
2. Facilitate an assessment by brainstorming with the children group by group.

- What needs to be changed, added, remade?
30 minutes

3. Present assessments to the rest of the class.
20 minutes

4. Organise any changes/additions necessary before presentation in the neighbourhood.

Phase 4 Commission and Make



Tips and Reminders:

1. Each facilitator is responsible for their allocated group.
2. Go around each group and help individual children who need attention.

Assessment:

3. Remember to use the 4Cs to track and evaluate the sessions.
4. Collect evaluation sheets from all facilitators after the session.

Activity 18: Neighbourhood Presentation Prep

Time
1 hour

Summary:

During this session the students will assess the prototypes fabricated by the neighbourhood makers.

Equipment:

Final prototypes.

Preparation:

- Prepare consents for final outing for presentations the following week.
- Invite parents and school to the event.

1. Bring final objects into the classroom.

2. In groups, the children can develop their presentations to the neighbourhood. Each facilitator helps their group prepare their public presentation. 30 minutes

- Rehearse Q and A. Use role play with the objects. (3 minute presentations)

- Do there need to be invitations? A banner? How to invite the community? If so how should these be made?

3. Present to the class. 20 minutes

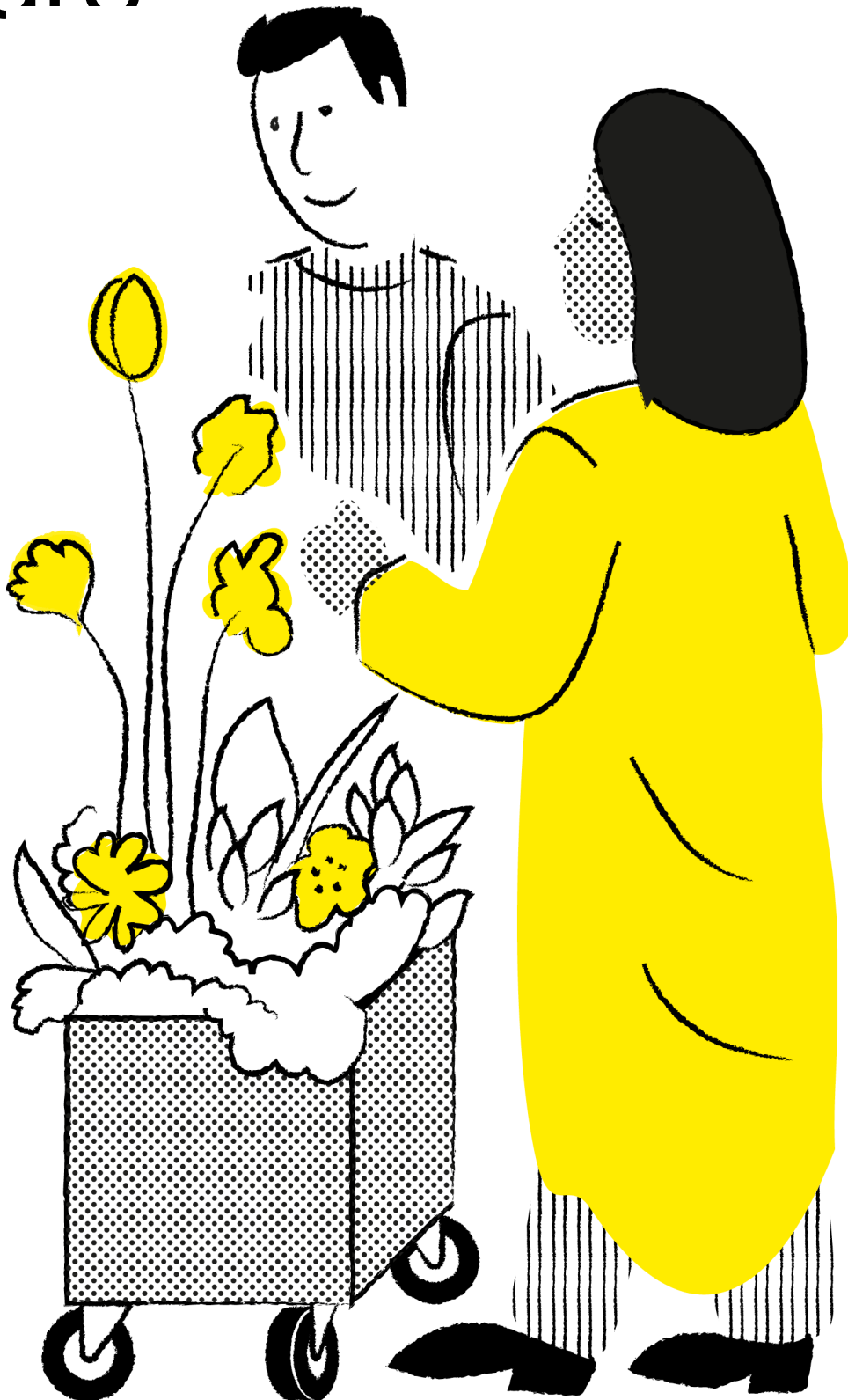
4. Think about where you would like to do your presentation in the neighbourhood.

5. What order should the groups present in?

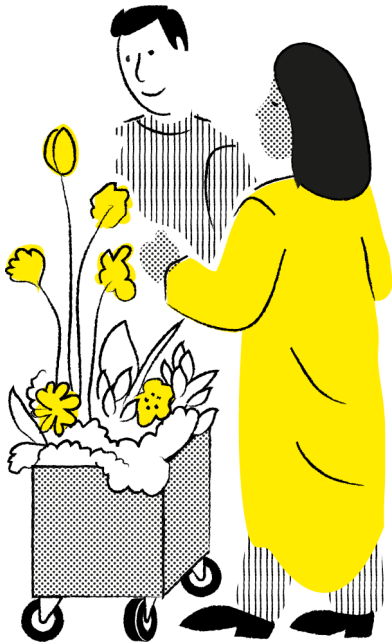
10 minutes

6. Organise any changes/additions necessary before presentation in the neighbourhood.

Phase 5 Present and Share



Phase 5 Present and Share



Tips and Reminders:

1. Determine when the best time is to do the walkabout - morning or afternoon?
2. Try to encourage groups to go in different directions, so that there is an even spread of research across the neighbourhood.
3. Collect evaluation sheets from all facilitators after the session.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 19: Neighbourhood Presentations

Time
2 hours

Summary:

During this session the students will present their designs in the neighbourhood to the public.

Equipment:

Final prototypes, and any banners/leaflets etc...

Preparation:

- Make sure parental consents have been completed, and faculty has been notified/ approved.
- Ensure there are enough facilitators to accompany the groups, and enrol volunteers if necessary.
- Ensure prototypes can be transported easily.
- Could press be called?
- Organise video documentation and photography for the event.
- Make sure you know what order the groups will present in, so you can plan the route.

1. Meet with your group and travel to the neighbourhood.
15 minutes

2. Present group by group to the public, along the route previously agreed.
15 minutes /group

3. Engage the public to get as many people to attend as possible.

4. Q and A following each presentation.

5. Photograph each group after their presentation.

6. Document the presentation day by asking community members what they think of the prototypes, and students what they learnt from this project.

7. Meet at the meeting point, and travel back to school. 15 minutes



Fighting and Bad Language group present their fine box, banner and debating table to the community in Mariamma Nagar settlement, February 2016.

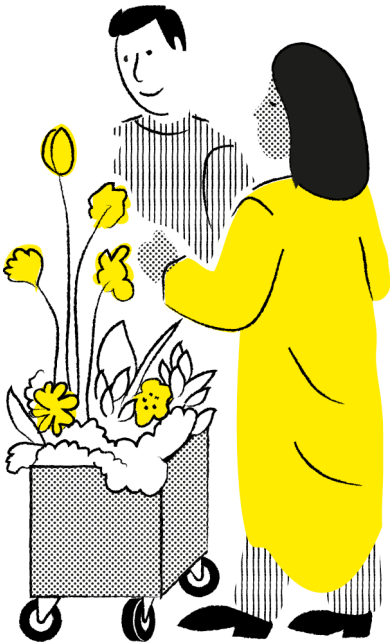


Rubbish and Recycling group present their wet and dry waste bins to the community in Mariamma Nagar settlement, February 2016.



Open Gutters group present their gutter cover to the community in Mariamma Nagar settlement, February 2016.

Phase 5 Present and Share



Tips and Reminders:

- The prototypes will need to be stored, exhibited or installed. Try to find a place for them short term while you define your next steps.
- Collect all the feedback sheets during the session.
- You could ask the students to nominate a person who they feel has excelled throughout the project - 1 person/team.

Assessment:

1. Compile assessment sheets from each session, and grade each student with help of school staff.

Activity 20: Discussion and Celebration

Time
1 hour

Summary:

During this session the students can reflect on the entirety of the project, and what happens next.

Equipment:

A4 sheets of paper each, snacks.

Preparation:

You could think of a space within which an exhibition could be held.

Celebration and snacks!

1. Classroom session to discuss the presentations and Q and A's.
2. What questions did the public have? 10 minutes
3. How do you think your presentations went? What went well? What went not so well? 10 minutes
4. On the feedback sheet, answer the following questions:
 - What did you like best about the whole project?
 - What didn't you like about the whole project?
 - What do you feel you learned?
 - Any other comments? 20 minutes
5. Celebration and congratulations on amazing efforts all round! 20 minutes

Phase 6 Test and Evaluate





Tips and Reminders:

1. Public authorities/ neighbourhood leaders may need to be contacted for approvals.
2. Evaluation plan should be easy to use.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 21: Prototype Evaluation Plan

Time
1 hour

Summary:

During this session the students plan the installation of prototypes, make an evaluation plan and organise data collection.

Equipment:

The prototypes. Large sheets of paper, pens for each group. Printed maps of the area, or use of Google maps on computers.

Preparation:

- Do you need any approvals from public authorities?
- Can community groups on site help with this work? Could they be remunerated? How could this be funded?

1. In groups, brainstorm different possible locations for prototype installation. Pick the favourite location. Will the prototypes stay out overnight? If not how will they be looked after?

20 minutes

2. How will the prototype be evaluated? Each group decides on the parameters for assessment, and makes an evaluation plan. How long will the evaluation take place for? Who will carry out the evaluation? How will the information be kept safely and collected? Will you use photographs, note-taking, interviews... 20 minutes

3. Each group presents their location and evaluation plan to the rest of the class.

10 minutes

4. Organise the next session for installation of the prototypes. Are evaluation plans and methods needed for members of the community who may want to help?

10 minutes



Activity 22: Prototype on-site Installation

Summary:

During this session the students install their interventions for evaluation and organise data collection.

all parties are happy with their tasks, and know how long the exercise will take (1 day, 2 days, a week?).

10 minutes

Equipment:

The prototypes and transport to site. Any additional materials to make using them safe for the all involved.

5. Document photographically the prototype in its test location prior to testing. 10 minutes

6. Distribute evaluation data collection materials to evaluators. 10 minutes

Preparation:

- Do you need any approvals from public authorities/ neighbourhood leaders?
- Make sure the prototypes can be carried and installed safely.
- Ensure to carry out school-related approvals and parental consents.
- Meet with community groups on site if helping with this work.

1. Meet or travel together to the site, transporting the prototypes for each group.

15 minutes

2. Facilitate each group's installation of their prototype in the planned location.

40 minutes

3. Check safety and usability. 20 minutes

4. Test the evaluation plan and methods. Discuss plans with external evaluators and neighbours. Ensure

Tips and Reminders:

1.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.

2. Collect evaluation sheets from all facilitators after the session.



Activity 23: Prototype Evaluation

Summary:

During this session the students will evaluate their prototypes and collect data.

Equipment:

The prototypes. Evaluation forms/materials. Cameras?

Preparation:

- Create an evaluation form that can be filled out by whoever is evaluating the prototype on site.
- Print the appropriate number of forms. If photography is being used to evaluate, share ethics guidance on photographing faces and need for consent.
- Prepare a base spreadsheet to collect data from evaluation.

1. Go to site. Each group can collect their prototype and collect all the evaluation forms/materials distributed in the planning session.

50 minutes

2. Make sure the prototype has been well documented in its site location.

3. Photograph the prototype after testing in its on-site location.

4. Back in the classroom, each group can begin to analyse the data collected about their prototype. What were the main comments from users?

5. What worked well?

6. What worked less well?

7. Collate the data in a spreadsheet so that each group can search for themes and patterns in their data.

8. What themes can each group find?

9. How does this affect the design of the intervention?

10. Start to put all the findings into a spreadsheet so that you can analyse the outcomes.

50 minutes

Tips and Reminders:

1. Make sure evaluators know where to keep the form safe and to collect them after the evaluation has ended.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.

2. Collect evaluation sheets from all facilitators after the session.



Tips and Reminders:

1. It would be good to share the findings with all parties involved, including the fabricators if they are interested in continuing involvement in the project.

Assessment:

1. Remember to use the 4Cs to track and evaluate the sessions.
2. Collect evaluation sheets from all facilitators after the session.

Activity 24: Findings and Conclusions

Time
1 hour

Summary:

During this session the students examine the data collected, and prepare findings from their research and next steps in terms of their prototype design.

Equipment:

Evaluation data from evaluation and session. Computers for spreadsheet analysis.

Preparation:

- Store the prototypes or leave them in the neighbourhood if the public want to use them and the relevant authorities allow it.

1. In the usual groups, assess the data collected for each prototype, in the forms/ photographs, that has been put into a spreadsheet.

2. Can you see any comments that repeat often? Can you count how many times this has been said?

20 minutes

3. Make a pie chart based on the findings from your evaluation. What are the conclusions? What was logged most, or least?

10 minutes

4. Based on your findings, make a statement about your prototype design. What should happen next? Is it ready for use or does it need

some design tweaks?

5. If it's ready, who do you want to present it to - could a fabricator make your prototype and sell it? Could it become a business?

6. Present your findings and your future plan to the rest of the class.

30 minutes

Research by Dr Nicola Antaki
Co-produced with Muktangan School, Mumbai, India
Photography by Nicola Antaki

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