

# Sikaru Saathi

## [Dismantling]



### A little background for this lesson:

- Welcome to the Facilitator's Guide on Dismantling for Sikaru Saathi Bootcamp. This is the first lesson in a series of lessons that aim to raise awareness about e-waste and promote responsible disposal practices. This lesson on dismantling is designed to be conducted over three hours.

### Materials Required

Component Name	Quantity
Projector (Optional) (To share presentation and prompt)	1
Speaker system (Optional) (To play music when participants are working in stations)	1
Dismantling Stations	4-5
Presentation Slide	1
<a href="#">MultiMeter</a>	2-3
<a href="#">MultiPlug</a>	1
<a href="#">Calculator</a>	1 per group
<a href="#">Screw Driver set</a>	3
<a href="#">Pre-Assessment Handout</a>	1 per student
Papers and pen	1 per student

[Dismantling Worksheet](#)

1 per group

### Curiosity

Engage participants with questions to get them thinking about e-waste.

1. What are different types of solid waste? How would you classify solid waste? (hopefully someone mentions e-waste)
2. What kind of waste do you think poses the biggest threats to the environment? (common answers might be plastic and glass, but the facilitator must mention toxic metals and hazardous materials of e-waste)
3. How do you manage waste at home and school?
  - a. What are different things that you personally can do to tackle the problem of waste? (participants may not have any idea of how waste is managed)
4. Have you ever heard of e-waste? What do you think it is?

### Activities

#### Getting to know each other

- Pick a fun game that will allow students to get to know each other and play it with the students. We recommend games that require physical movement so that the students get energized.
- **Name Game** (Option)
  - Participants can play a name game where participants need to share their name by doing any kind of gesture.

#### Pre Assessment

- Facilitator hands out [pre-assessment](#) for participants and asks them to fill up the paper.

- participants might get confused about some questions/answers so the facilitator needs to give them freedom to write whatever they understand.

### Tour of a recycling facility

- Here participants will take a tour of a recycling facility where they will discover:
  - Types of waste and their history in context of Nepal
    - Here we can do a **presentation** about daily waste generation, policies, and waste management protocols at a recycling facility

Here are some recycling facilities that we recommend

- [Doko Recyclers](#)
- [Khaalिसि](#)

### Visualizing Waste

- Start by asking a simple question - What are the different types of solid waste?
  - Have few participants share their opinions.
- Ask the participants to think about the following questions
  - How is solid waste managed at your home and school?
  - How do you personally help at home and school to manage waste?
    - **Note:** Use the [Think, Pair and Share](#) technique to get participants to share their ideas with their friends sitting next to them. Get 2 or 3 participants to share their partners' answers with the entire class.
    - Acknowledge interesting ideas that emerge in the discussion about waste and waste management. Introduce a visualization technique called mind map to help participants further build on and visualize their ideas of waste.

*End the section with a short video on the problem of waste management globally.*

1. [Landfill facts and statistics](#)
2. [The World's Largest E-Waste Dump](#)

### Understanding e-waste

Begin by forming pairs of students. Ask them to share their names and one fun fact about them. Then, hand out papers.

- The facilitator can ask the following questions
  - How many cell phones/ tablets/ laptops have you used?
    - Let participants write and share it with students sitting beside them.
  - Have you ever tried to open your electronics?
    - What is inside your electronics? Expect answers like metals, plastic, glass, other parts.
  - Do you think these parts are valuable?
    - Hopefully they say yes but it is likely that most participants will not know.
  - Do you know what e-waste is?
    - Expect answers like old phones, computers, participants usually forget about kitchen appliances like microwaves and toasters.
- Interesting facts that facilitators can share with participants:
  - Did you know that more than 70% of mobile phones can be recycled?
    - Inside your computer as well, there are a variety of precious metals, but they also contain a variety of highly toxic materials that require careful handling when dismantled and recycled. Some of the toxins like mercury, lead, and beryllium are harmful to our health. The preferred option for the end-of-life of computers is to reuse or refurbish (repair) them. However, with proper management, we can recycle aluminum, copper, steel and gold from computers.
  - Did you know that 95% of an old refrigerator can be recycled?
    - **But in Nepal's context hardly 20-25% of components can be recycled because of limited technology and this process poses a high risk to the environment and human health.**
    - What is recycling?
- Ask participants to make a list of e-waste that is regularly generated in their homes and what happens to the e-waste at your homes?
  - Expect answers like throw it in the trash, sell it to a **कबाडी (kabaadi)** , break it down and see what's inside
- Have a discussion with the participants about different ways to manage e-waste. Some questions to be considered

- What do you do with your e-waste?
- What can you do to help manage e-waste?
- What do you think we could do to improve e-waste management?
  - (1) Make sure to separate e-waste from other types of waste, (2) have more exchange programs for electronics where manufacturing companies and distributors take back their waste, and (3) ask manufacturing and distributing companies like Samsung to take back their old electronics,
  - Mention how waste management companies like Doko and Khaalisisi are working towards solving the issue
- Will you try to separate e-waste and be a more responsible consumer?

Facilitator notes: Give time to students to answer these questions. Remember to acknowledge students' responses and refrain from answering for them too quickly.

### Dismantling

Facilitator has to set up 4-5 dismantling stations before the class starts.

Here is a demo of what dismantling station looks like:



- Participants are guided towards the dismantling station and are asked to dismantle simple e-waste (eg: a calculator)
- Do not provide any instructions to the participants about how to dismantle e-waste. Let them explore their own way to dismantle.
  - Facilitator needs to be aware of what and how participants are dismantling things and needs to give safety gears before they start dismantling.
- Once all participants are done, talk about their dismantling process
  - Did they follow any rules to dismantle or did they just start dismantling without worrying more waste they will be producing if not done properly?
- Now facilitator shows proper way to dismantle e-waste
  - **Step 1:** Weighing before dismantling
  - **Step 2:** Separation of plastics, electronic components, classes, and batteries
  - **Step 3:** Weighting components that can be re used and identifying dead components
  - **Step 4:** Proper way to dispose dead/non recyclable materials
    - Handout the **worksheet** and ask them to record their findings
- Participants will calculate the salvage value of the electronic item they just dismantled with the guidance of the expert in Doko.
- Facilitators can start a short discussion on the feasibility of actually recycling these products based on the salvage value.
  - The experts from Doko can talk about different types of e-waste that are easy to salvage and others that aren't.
  - At the end of the activity participants pick some of the e-waste they want to take back with them for their final project.
  - [https://www.youtube.com/watch?v=USuY93sovuM&ab\\_channel=VergeScience](https://www.youtube.com/watch?v=USuY93sovuM&ab_channel=VergeScience)

## Reflections

- What was one thing that was memorable/insightful/frustrating about the session today?
- I used to think \_\_\_\_\_ Now I think \_\_\_\_\_
- What was one thing you learned today that you would like to share with your friends and family?