



ENHANCING CIVIC  
ENGAGEMENT

# **WASTE MANAGEMENT**

---

**TEACHER'S GUIDEBOOK**

**Class VI**

---



**State Council of Educational Research and Training  
Government of Goa**

---

**Edition** : January, 2018  
**Revised print** : June, 2019  
**Revised print** : June, 2021  
**Published by** : S.C.E.R.T., Government of Goa, Alto-Porvorim  
Desh Apnayen Sahayog Foundation, Mumbai  
Shantilal Muttha Foundation, Pune

**Printer** :

© All rights reserved by publisher

---

**Content Lead** : Dr. Garima Tailang-Desh Apnayen Sahayog Foundation

**Subject Matter Experts and Contributors** : Mr. Sujit Dongre, Centre for Environmental Education, Goa  
Mr. Abhinav Apte, GM, Solid Waste Cell, Dept of Science & Technology  
Ms. Patricia Pinto - Director, Solid Waste Management Corporation & Social Activist

**Reviewed by-  
Goa Teachers** : Mr. Umesh Kerkar, Sharada English High School, Marcel  
Mr. Tukaram Salgaonkar, GHS Shristhal, Canacona  
Mrs. Soniya Sachin Naik, Deepvihar High School,  
Headland Sada, Vasco, Goa  
Dr Nita G. Salunke, Smt. Sunandabai Bandodkar High  
School Salvador-do-Mundo, Bardez-Goa  
Mr. Siprian Rejinal Braganza, St.John Of The Cross High  
School, Sanquelim- Goa

**Shantilal Muttha Foundation** : Ms. Meghana Desai, Deboshree Bhattacharjee

---



ENHANCING CIVIC  
ENGAGEMENT

# WASTE MANAGEMENT

---

TEACHER'S GUIDEBOOK

**Class VI**

Guidebook for teachers which will provide directions to carry out different activities, conduct school events and also provide guidelines to execute community engagement projects

*Approved for pilot by -*

**State Council of Educational Research and Training (S.C.E.R.T.)  
Government of Goa**

## Subject Linkages Sheet for Waste Management Std-VI

No.	ECE Activities	Subject Linkages Chapter Number, Name & Page No
	<b>Topic 1. Impact on environment and community</b>	<b>Science</b>
1	Lesson/Activity plan: Concept teaching - Impact on environment and community	Chapter 9 - The Living Organisms and Their Surroundings - Page - 79
2	Activity 1 - Discussion and speech	
3	Activity 2 - Posters and slogans for waste management awareness	
4	Activity 3 - "Who cares?" - Skit/Role-play	
5	Activity 4 - Chart making - Harmful effects of waste on natural resources/environment	
	<b>Topic 2. e-Waste</b>	<b>Science</b>
1	Lesson/Activity plan: Concept teaching - Impact on environment and community	Chapter 12- Electricity and Circuits- page no. 116-124
2	Activity 1- Phone recycling drive in class	
3	Activity 2 - Collage/scrapbook on e-Waste management	
4	Activity 3 - Success story and discussion	
	<b>School-level activities/events</b>	
1	Litter-free zone in school	1. Chapter - 16 - Garbage in, Garbage out 2. (To be planned in the school yearly plan as part of exposure visits/eco clubs/ science commitees/value education/art & craft period/work experience period/scouts & guides, science exhibiition/science experiments or on Special day like 15th August or 26th January)
2	"Joy of giving" event	
3	Jumble sale	
4	"Carry a bag, not carry bag!" campaign	
5	Observe the recyclable vs. non-recyclable waste	
	<b>Community-level projects</b>	
1	Community drive	1. Chapter - 16 - Garbage in, Garbage out 2. (To be planned in the school yearly plan as part of exposure visits/eco clubs/science commitees/value education/art & craft period/ work experience period/scouts & guides, science exhibiition/science experiments or on Special day like 15th August or 26th January)
2	Signature campaign	
3	Guest speaker	

# Contents

<b>Topic 1 - Impact of waste on the environment and community</b>	<b>1</b>
Lesson/Activity plan: Concept teaching - Impact on the environment and community	1
Activity 1 - Discussion and speech	3
Activity 2 - Posters and slogans for waste management awareness	3
Activity 3 - "Who cares?" - Skit/Role-play	4
Activity 4 - Chart making - Harmful effects of waste on natural resources/environment	4
<b>Student's book worksheets</b>	<b>4</b>
<b>Topic 2 - e-Waste</b>	<b>5</b>
Lesson/Activity plan: Concept teaching - Impact on environment and community	5
Activity 1 - Phone recycling drive in class	6
Activity 2 - Collage/scrapbook on e-Waste management	7
Activity 3 - Success story and discussion	7
<b>Student's book worksheets</b>	<b>9</b>
<b>School-level activities/events</b>	<b>10</b>
<b>Community-level projects</b>	<b>12</b>



# Topic 1. Impact of waste on the environment and community

- 1.1 Harmful effects of waste on the environment, health and economy
- 1.2 Waste management practices of community

## Expected outcomes

### At Student level-

- 1. Students will learn and understand the concept of recycling and its social, economic and environmental benefits.
- 2. Students will learn about the places where waste is generated.
- 3. Students will have concern and empathy towards waste pickers and people involved in waste collection and disposal.

### At School level-

- 1. School would help the students and the community understand the steps that need to be taken towards a zero-waste lifestyle.
- 2. School would become a catalyst/role model for the community to create a zero-waste culture.
- 3. School would be able to make the students responsible citizens who take action to resolve problems.

## Lesson/Activity plan: Concept teaching - Impact on the environment and community

Time	Activities	Resources/ TLM
5 min	<b>Step 1: Recap and brainstorming</b> <ul style="list-style-type: none"><li>1. Revise the concepts taught in Topic 1 like -<ul style="list-style-type: none"><li>a. What is waste?</li><li>b. What are the effects of poor waste management?</li><li>c. What would happen if no one cared about the proper disposal of waste in your family?</li></ul></li></ul>	Blackboard



	<p>d. Do you think waste can affect the environment?</p> <p>2. List down major points on the blackboard and revise.</p> <p>3. Engage students in a discussion with the above probing questions.</p>	
1 period	<p><b>Step 2: Concept teaching - (Refer to student book)</b></p> <p><b>Topic 1 - Impact on the environment and community</b></p> <p><b>1.1 Harmful effects of waste on the environment, health and economy</b></p> <p><b>1.2 Waste management practices of community</b></p> <p>1. Give reference to the brainstorming session and discussion.</p> <p>2. Explain in detail the effects of waste on the environment and the health of human beings. Ask the students to give examples from their own surroundings and what they see in Goa.</p> <p>3. Explain how small steps can help the community in proper waste management.</p>	Verbal discussion + handouts + student book
20 min	<p><b>Step 3: Group exercise -</b></p> <p>1. Ask the students about the harmful effects of poor waste management on the environment, health and economy.</p> <p>2. Write all the answers in different sections on the blackboard.</p> <p>3. Let them write these points in their student's activity book too (<b>Record sheet: Activity 1 - discussion and speech</b>)</p> <p>4. Five points are minimum; ask children to write more if they can think of any.</p> <p>5. Revise all points.</p>	Blackboard





### **Activity 1 - Discussion and speech**

**Activity time - 1 period/45 minutes**

**Material required - NA**

**Steps for activity -**

1. This is an extension of the previous group exercise. After discussing the harmful effects of waste, ask the groups to further discuss what can be done for waste management at the student level.
2. The students need to write a short paragraph on "Waste management and my responsibility".
3. Encourage the students to speak in class about their responsibility.
4. Call for representatives of each group to speak about the topic.
5. Write a short paragraph on "The harmful effects of poor waste management" in the student activity book (**Record sheet: Activity 1 - Discussion and speech**)

### **Activity 2 - Posters and slogans for waste management awareness**

**Activity time - 1 period/45 minutes**

**Material required - Chart paper, colour pens, decorative material**

**Steps for activity -**

1. Distribute all the required material among the students individually or in a group.
2. Ask them to make posters on waste reduction, waste management, environmental effects, green earth, etc.
3. Ask them to write some good slogans on their posters.
4. Display these posters in the classroom or on the school display board.

### **Activity 3 - "Who cares?" - Skit/Role-play**

**Activity time - 1 period/45 minutes**

**Material required - NA**

**Steps for activity -**

1. Divide the class into three groups and ask them to think, discuss, and develop a short skit of 5-7 minutes showing waste



problems in the area near their home or school. They can write a story about how no one minds throwing waste in open areas, their surroundings or even at their neighbour's doorstep.

2. The groups can select some characters like student, youngster, waste collector, teacher, mother, government worker and so on.
3. Make the skit funny and present it in class.
4. The teacher needs to support the groups in times of difficulty.
5. Encourage healthy discussion after presentation to sum up the lesson taught.
6. The teacher needs to sum up the problem of waste and the responsibility of students to reduce waste.
7. Write the script of the skit in your student's activity book  
**(Record sheet: Activity 3 - "Who cares?" - Skit/Role-play)**
8. Good skits based on these scripts could be presented during school events.

#### **Activity 4 - Chart making - Harmful effects of waste on natural resources/environment**

**Activity time - 1 day for preparation,  
1 period for chart making**

**Material required - Chart paper, colours, colour pens, old newspaper and magazine photographs**

##### **Steps for activity -**

1. Divide the class into 5-6 groups and ask them to make a chart on the harmful effects of waste on the environment, natural resources, etc.
2. They can use pictures and news reports from old newspapers and magazines to showcase the effect.
3. Display all the charts in the classroom.

#### **Student's book worksheets -**

1. Write a letter to your Principal
2. Word search - Environment



## Topic 2. e-Waste

- 2.1 Meaning and categories of e-Waste
- 2.2 Sources of e-Waste
- 2.3 Hazardous effects on environment
- 2.4 e-Waste management

### Expected outcomes

#### At Student level-

1. Students will learn and understand the concept of e-Waste and its harmful effects on the environment.
2. Develop attitudinal change for desired action

#### School level-

1. School would be able to establish a connection with authorised dealers, recyclers, and village panchayat for recycling of e-Waste generated in the community.

### Lesson/Activity plan: Concept teaching - Impact on the environment and community

Time	Activities	Resources/ TLM
5 min	<b>Step 1: Recap and brainstorming</b> Start a discussion about waste and its different categories. Ask the students - <ol style="list-style-type: none"><li>1. What do you understand about e-Waste?</li><li>2. How many mobiles, computers and electronic items are there in your house?</li><li>3. What is the lifecycle of each such product?</li><li>4. When you or your family members purchase a new electronic equipment/computer/mobile, what do you or they do with the old one?</li><li>5. How can this e-Waste harm our environment?</li></ol>	Blackboard



30 min	<b>Step 2: Concept teaching - (Refer to student book)</b> <b>Topic 4 - e-Waste</b> <b>2.1 Meaning and categories of e-Waste</b> <b>2.2 Sources of e-Waste</b> <b>2.3 Hazardous effects on environment</b> <b>2.4 e-Waste management</b> <ol style="list-style-type: none"> <li>1. Give reference to the brainstorming session and discussion.</li> <li>2. Explain in detail about e-Waste, its categories, sources, and the harmful effects of poor e-Waste disposal on the environment.</li> <li>3. Explain how small steps can help in proper usage and disposal of e-Waste.</li> </ol> <p><i>(Teacher can break it down into two sessions as per time availability.)</i></p>	Verbal discussion + handouts + student book
--------	--	---

### Activity 1- Phone recycling drive in class

**Activity time - 2 days preparation time, 45 minutes for collection**

**Material required - Carton box, chart papers, colours, scissors, glue**

#### **Steps for activity -**

1. Ask the students to run a phone collection drive in school. They need to make posters, slogans and fix up a day and date for the drive.
2. Place placards and stickers on the school campus for the said drive and ask them to do word of mouth publicity for the event in all classes and during the assembly.
3. Place e-Waste boxes on the school campus in the main hall or at the reception. Collect old phones (which are not in use) from the students' homes.
4. Collect all the phones in a box.
5. The teacher can help find out phone recyclers in the area and help children send the collected phones to recyclers.



## **Activity 2 - Collage/scrapbook on e-Waste management**

**Activity time - 1 period/45 minutes**

**Material required - Chart paper, scissors, glue, colour pens, old newspaper and magazines**

**Steps for activity -**

1. Ask the students at least two days in advance to collect news stories, photos and articles on e-Waste, and search for small write ups from old newspapers, magazines and books.
2. Make a collage or small scrapbook on e-Waste management, including topics like different categories, the harmful effects on the environment, usage, proper disposal, etc., in class.
3. Display the collage/scrapbooks in the classroom and give recognition to the best one.
4. This activity can also be conducted in groups.

## **Activity 3 - Success story and discussion**

**Activity time - 1 period/45 minutes**

**Material required - Handout of story**

**Steps for activity -**

**Step 1:** Narrate the story below of a student who has initiated an e-Waste collection campaign.

**Story -**

**Meet the 15-year-old Mumbaikar who has recycled 350 kilograms of e-Waste already!**



*Two years ago when 15-year-old Mumbaikar Nishant Jain got bronchitis as a result of a dump-yard fire, an idea lit from within - he was going to ensure other kids would not suffer similar consequences. The dump-yard was near his house and while the fire had initially been a small one, due to the presence of e-Waste and batteries, the fire spread and polluted the air in the neighbourhood. When Nishant fell sick, he realised he wanted to make it his mission to prevent other children from falling sick like he did.*

*He went to his friends and family and asked them if they knew that it was dangerous to dispose of batteries along with the other trash. He found to his surprise that no one had a clue. It was at this time that he decided to take matters into his own hands and start collecting batteries at home and school. He spoke to his classmates and to his school's faculty and started a collection by himself.*

*With the help of an NGO called CMCA, he is working with 13 schools to collect batteries and e-Waste. He researched online for recyclers of batteries, contacted them, and partnered with them for a school awareness and collection process.*

*Till now, Nishant has collected over 350kg of e-Waste (this includes mobile phones, laptops, etc.) and says that along with CMCA he hopes to create such programmes in other cities across the country too. The bright young kid has an important message for other children.*

*"Everyone has told me that studying is important and I am making sure to follow through. I just want to tell other kids that it is possible to do such projects and focus on your studies too. You just need to focus on your priorities a little."*

*Source: <https://www.thebetterindia.com/84214/nishant-jain-recycle-e-Waste-batteries-mumbai/>*



**Discussion points -**

- a. Who is Nishant? What inspires you about Nishant?
- b. How has he been able to identify the problem of e-Waste?
- c. How can Nishant's small step make a difference?
- d. What can you as a child do to handle the e-Waste problem of your country?

**Step 2:** Ask the students to write a small paragraph about this story in their student's activity book, along with one message/learning they got from the story. **(Record sheet: Activity 3 - Success story and discussion)**

**Student's book worksheets -**

1. e-Waste
2. Letter to Gram Panchayat



## School-level activities/events

### 1. Litter-free zone in school

1. Form an eco-club in school. Call for voluntary participation from students and keep the maximum member count at 20. Let the members identify an area in the school where they can set up a litter-free zone. It must be an area that most students visit regularly and so, the chances of littering are very high. For example, it can be the playground, assembly or canteen.
2. The activity is to make the area a "litter-free zone" within the month. Mark it, label it, place dustbins, put posters and slogans, and decorate the area in your own way.
3. Showcase the pilot project and replicate this project in your entire school.
4. Teachers can help the eco-club members in taking permissions from the Principal and in lauding the success of the project.

### 2. "Joy of giving" event

1. Announce the "Joy of giving " day in your school.
2. Ask the children to bring stationery which they want to donate to children in need.
3. Students need to collect stationery from all classes (items which are not in use but in good condition).
4. Make stationery kits out of the collected items. Make as many as possible with at least the basic items.
5. Distribute the kits to children in need from a slum area or Anganwadi centres in villages.
6. Eco monitors of each class can participate in the collection and making of stationery kits.
7. Teachers need to coordinate and arrange the donation centre.

### 3. Jumble sale

1. Announce the event of jumble sale of electronic waste in your school.
2. Encourage the students to collect reusable e-Waste from their homes and neighbourhood and organise a jumble sale.





3. Keep prices minimal and ask the parents to participate voluntarily in organising the event.
4. e-Waste which is not usable, can be sent to recyclers. Collect and send these items to local recyclers under the teacher's supervision.

#### **4. "Carry a bag, not carry bag!" campaign**

1. Announce the campaign and its objective.
2. Announce the campaign start date, end date, process and monitoring plan in the assembly.
3. Allow the eco-club members to spread the word on the school campus through charts, posters, slogans, etc.
4. Take a pledge with all the teachers, staff and students to follow this slogan "Carry a bag, not carry bag" and bring this in practice for the coming month.

#### **5. Observe the recyclable vs. non-recyclable waste**

1. Make a small compost pit in an open area under the teacher's guidance.
2. Ask the children to collect different types of waste from the school campus (paper, plastic, wooden straws, leftover food, leaves, etc.).
3. Take them to the compost pit by the end of the day to observe the pit and regularly spray some water.
4. Every 7<sup>th</sup> day, ask them to observe the pit and identify which waste materials have been fully converted into compost, which are half converted, and which haven't converted at all.
5. On the 7<sup>th</sup> day, discuss -
  - a. Which products have still not turned into compost? Why?
  - b. How are these products hazardous to the environment?
  - c. How can we reduce the usage of such items in our daily life?



## Community-level projects

### 1. Community drive -

The school can involve all grades and divide the work/task accordingly. Various activities can be conducted under this project for cleanliness and waste management:

1. Zero-waste/No plastic bag campaign
2. Street plays
3. Wall paintings and beautification/Putting up dustbins
4. Theme-based cultural events - Dance, drama, songs, slogans, guest speaker, etc.

### 2. Signature campaign

1. Ask the students to make simple pledges about "Waste management and my responsibilities for saving the environment" in 5-10 simple points.
2. Ask the students to make groups and explain the pledge to parents, neighbours and elders in their surroundings and take signatures on the "Save environment" pledge.

### 3. Guest speaker

1. Call some local recyclers/scrap dealers/corporates involved in e-Waste collection and recycling.
2. Hold a lecture or discussion with the children to make them understand the process and the impact of waste on the environment and health.





