

Waste Management

Before you Begin

What is waste?

Eight million tons of plastic waste ends up in sea every year. To put it in perspective, a blue whale weighs 120 tons = 44,000 blue whales.

Estimation of waste generation and understanding its composition are important information for management of waste as this information influences the designing of waste collection and handling facilities, understanding its management and safe disposal. The information also raises awareness of waste being produced at home and what individuals can do to minimize waste and adopt practices like segregation, reuse and composting to support the waste management systems in their towns and cities.

What is a survey?

“Survey” is a method of collecting information via email, telephone or in person from a particular group of individuals which generally represents a fraction of the population being surveyed. The information thus collected is usually called data (Sarantakos, 1998).

Surveys are used by varied people to collect information pertaining to different aspects. Surveys can be administered in two ways - either as a structured interview, during which the respondents are asked questions directly, or as a questionnaire, which the participant fills out on his or her own. Each of these methodologies has its own advantages as well as limitations. The questionnaire for instance produces quick results and is inexpensive; however it is limited by the understanding of the respondent; who may leave the questions unanswered, if not understood.

Undertaking surveys is a pedagogical tool to sensitize students on the issue of waste, increase their understanding and encourage them to look at strategies to address the problem and give the experience of waste management through planning and establishing waste management practices or system in their school.

Waste surveys in the school will help assess the type and quantity of waste produced/ generated in the school. It will help understand the current system of collection, handling and disposal. The survey will help plan appropriate actions.

Waste survey at the community level will help students understand the waste management systems, the role of local municipality in managing waste from any town/ city and how citizens can help the systems work smoothly and efficiently. There are different means of collecting this information.

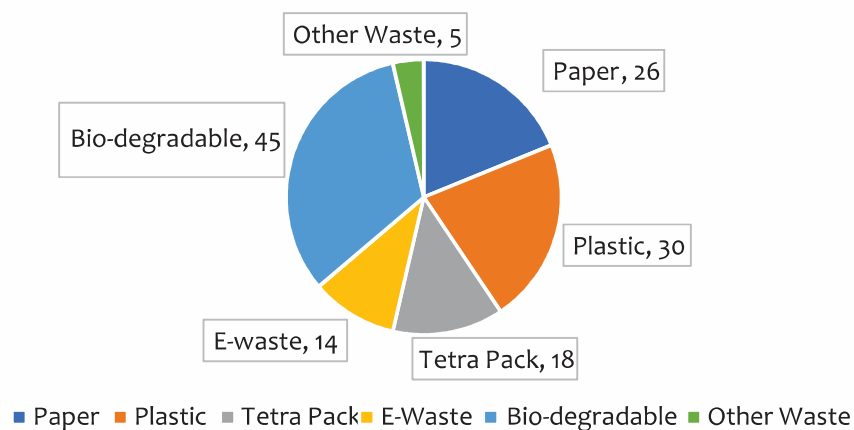
These include assessments, by measuring or assessing the different volumes of wastes generated, questionnaires or other means of conducting surveys.

In order to get the most out of the information (data) collected from surveys, it is important to analyze and interpret the same.

What is 'data' and the need for data representation?

Data is a collection of facts, such as numbers, words, measurements, observations or even just descriptions of things. Data representation, can be done using different methods; tally marks, graphs and pie charts are few of the methods which will be useful for students. Graphs of different types (bar graphs and pie charts) can be used in different situation and help to visualize and compare different pieces of data for ease of understanding and decision-making.

Graph representing waste management in Kgs

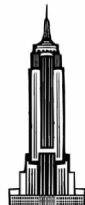


Plastic Waste: facts and figures

How much plastic enters the ocean every year ?



1096
Eiffel
Towers



24
Empire State
Buildings



44,444
Blue
Whales



30,180
heaviest sumo
wrestler in history,
Yamamotoyama
Szūb

Source : International Environmental Technology Centre (IETC)
Osaka, Japan

Household Waste Survey



INTRODUCTION:

The lesson plan engages students in the process of collecting information through surveys. The information collected is to do with household waste management, which will sharpen their understanding on the extent of the problem. Students will also be encouraged to analyse and represent the information collected as part of the surveys.

Objectives:

Students will be able to

- undertake surveys to gather data pertaining to waste management and disposal practices followed by individuals and households.

YRE steps: Investigate, Research Solution, Report, Disseminate

Curriculum Linkage: Science/ Environmental Studies/Social Science/ Numeracy and Mathematics

- Analyse and interpret the data collected; represent and display the same.

Resources Required:

- Students writing material.
- **Resource 3:** Household level survey – questionnaire

Time required/ Duration:

- 90 minutes (spread over two classes of 45 minutes each) for data analysis and representation.



Young Reporters
for the environment

15-18
Years



Activity

Classroom session 1

- Initiate a background discussion to
 - Explain to students the importance of collecting information through surveys and then representing the data collected in different ways with regards to the waste generated.
- Divide the class into groups of 3-4 members for conducting the survey.
- Discuss the survey format given as resource.

Group Assignment 1

- Student groups survey 15 - 20 households over 2 weeks.
- Resource 3 could be used or modified for the survey.

Classroom session 2

- Provide students 45 minutes of classroom interaction to discuss and analyse their finding.
- Provide students with 45 minutes of classroom based work. Students should represent the data gathered and display the same on bulletin board as part of Inform and Involve. YRE students can share this as an article or photostory on different media.
- As part of survey interpretation students could analyse people's practices towards segregation and disposal of waste.

Resource 3

Household level survey – questionnaire

1. Survey Date
2. Suburb
3. Name of Householder
4. Number of people in household
5. Do you agree if waste is not disposed of properly, it can pollute the environment? Y / N
If yes, identify the causes/reasons for some of these problems (choose 1 or more)
 - a) There are not enough rubbish bins nearby
 - b) Waste is not collected regularly enough
 - c) Waste is dumped on roadside
 - d) Other reason
6. Who disposes of your household waste?
 - a) Paid cleaner
 - b) Family member
 - c) Other
7. Where is the household waste disposed of?
 - a) In a kerbside rubbish bin/bags collected by local Council
 - b) In an empty space beside your house/in garden
 - c) Taken to community rubbish/recycling bin or rubbish dump
 - d) Other
8. How much are you currently spending for waste disposal per month?
9. Satisfaction level about the present Council waste removal system:
 - a) Very good
 - b) Good
 - c) Ok/medium
 - d) Unsatisfactory
10. How often do you dispose of your household waste?
 - a) Every 1-3 days
 - b) Weekly
 - c) Fortnightly
 - d) Monthly
 - e) Other

1. How do you dispose of your household waste:
 - a) Plastic wheelie bin
 - b) Plastic/polythene bags
 - c) Biodegradable bags
 - d) Any other container
2. How often does the Council collect the waste?
 - a) Every 1-3 days
 - b) Weekly
 - c) Fortnightly
 - d) Monthly
 - e) Other
3. What is the most common type of waste generated at your home?
4. Would you segregate your household waste because
 - a) It's your responsibility
 - b) It's mandatory
 - c) It can generate some income for you
5. What types of waste are you segregating?
6. Do you know where the household waste is taken?

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