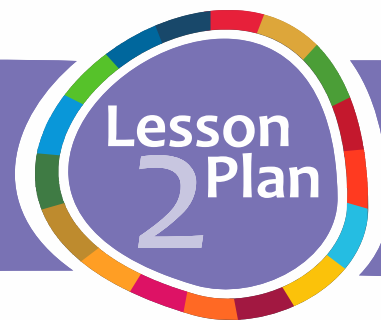# School Waste Audit

INTRODUCTION:

A waste audit is an analysis of waste stream in a place. A waste audit as a pedagogy help the students understand and determine the amount and types of waste that are generated. Information from these audits help to determine how you can reduce the amount of waste that is generated. It can identify the types of recyclable materials and waste and how much of each category is recovered for recycling or discarded.

Objectives:

Students will be able to

- undertake an audit to gather data pertaining to different types of waste generated in school.

- record data and find out the quantity of waste generated over a period of time.

- analyze, interpret and represent the data.

- prepare a plan and establish a waste management system.

Eco-Schools Steps:
Audit, Curriculum linkages, Evaluation and Monitoring, Inform and Involve
Curriculum Linkage:
Science/ Environmental Studies/Social Science/ Numeracy and Mathematics

Eco-Schools

9-12 Years

Time required/ Duration:

- **Classroom Session 1:** 45 minutes classroom based analysis of the data gathered and representation of the same on the Eco-Schools bulletin board.

- **Group Assignment 1:** Ten hours over two weeks provided for undertaking the waste audits within the school.

Resources Required:

- Writing material including notebooks and pen.

- Resource 2a (School Area and Type of waste generated) and 2b (Type and Quantity of waste generated).

- Resource 2c (Data Collection and Representation).

4 QUALITY EDUCATION

11 SUSTAINABLE CITIES AND COMMUNITIES

Activity

Classroom session 1

- Initiate a background discussion to (this could be done as a quiz to understand if students know what types of waste is found in different locations of the school)
    - set the context for understanding different types of waste generated, particularly in their respective school.
    - the importance of undertaking surveys with regards to the waste generated.
- Divide the class into groups of 3-4 members.
- Guide students to read Resources 2a (School Area and Type of waste generated) and 2b (Type and Quantity of waste generated).
- Discuss the resources.

Group Assignment 1

- All classrooms and other facilities of the school where waste is generated should be surveyed by student groups as part of the audit.
    - separate audits for individual classrooms, should be done using Resource 2b.
    - audits for other areas in the school including kitchen, laboratory, school office, garden and other common facilities use Resource 2a.

Classroom session 2

- Data gathered from all the classrooms and other facilities audited should then be added to give the cumulative figure for all the classrooms.
    - Facilitate students to represent the data in any one of the following forms: graphs, pie charts or pictographs. Resource 2a, 2b and 2c (Data Collection and Representation)
- Display the represented data on the Eco-Schools notice board to create awareness among the school community.

Evaluation:

A reflection with students on the findings of the survey could help understand whether students have understood the source of the different types of waste.

Resource 2a

School Area and Type of waste generated

Area	Type of waste	Quantity generated (in no. or weight)
Class rooms	Paper	
	Pencil Shavings	
Staff rooms	Chocolate wrappers	
	Paper	
	Refill	
School Office and Principal's room	Paper	
	Other	
School Kitchen/ School Canteen	Wet waste including vegetable peels and left over food	
	Packaging material	
School Dining hall	Other	
School craft room		
Playground	Leaf litter	
Garden	Other	
Library		
Laboratory		

Resource 2b

Type and Quantity of waste generated

Classroom: 1 (3rd standard B section)
(similar tables will have to be filled for different classrooms in the school)

Sl. No.	Type of waste	Mon	Tue	Wed	Thu	Fri	Sat	Total
1	Paper							
2	Pencil Shavings							
3	Food waste							
4	Chocolate							
5								

Resource 2c

Data Collection and Representation

What is a Data?
Data is a collection of facts, such as numbers, words, measurements, observations or even just descriptions of things.

Importance of Data visualization?
- Data handling helps in analysing the data collected in various context and for patterns and generalities within them.
- Data interpretation helps to analysing the data, segregate them in certain order, visualize them in the form of graphs and compare them between different pieces of data.
- Data interpretation also helps us to understand the frequency of maximum and minimum of data present.

Different ways of representing an information.
We can represent data or information in many ways. Data can be represented numerically in decimals, percentages and fraction. All the three representation means the same.

Example:

1/2 is equivalent to 50% which is also equivalent to 0.5

1/4 is equivalent to 25%which is also equivalent to 0.25

Data can also be represented pictorially using Graphs. It can be pictorially represented as a tally, Pictogram, Bar graph, Flow charts, Pie chart, leaf chart etc. Different types of graphs can be used in different situation.Graphs are picture representatives for 1 or more sets of information and how these visually relate to one another. Representing data pictorially will help the students visualize the data.

Tally:
Tally chart is one of the ways of representing data. It contains the details that need to be represented as a graph and it's frequencies. (Frequencies are details about the numbers of times the data is present or occurred.)
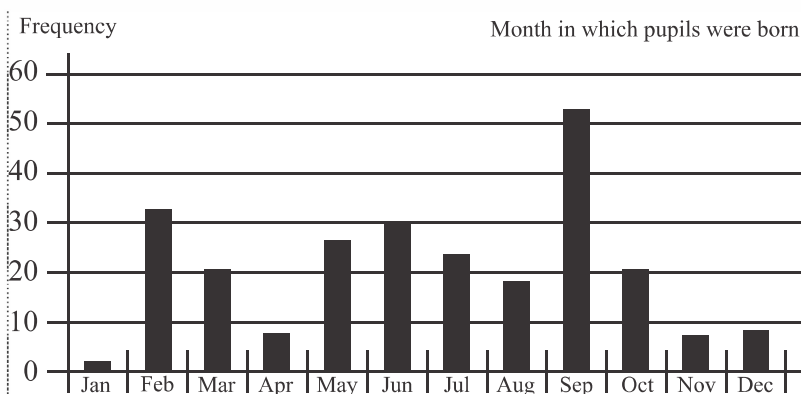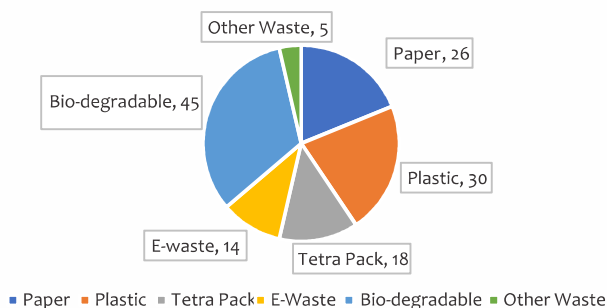To represent data in Tally:

			||	|||	||||	ЖТ
1	2	3	4	5
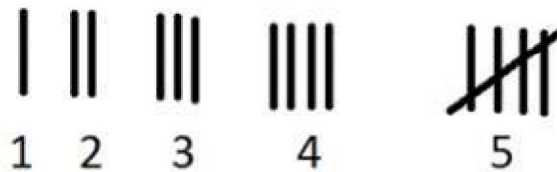
To represent a number 7 : ЖТ ||

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Bar Graph:
It is used to compare data which are formed into different categories and then compare with number of occurrences

Frequency | Month in which pupils were born

Pie Chart

*Graphs & Charts can be used for representing the data that is collected and compiled by the students.

Advantages
- Allows easy comparison of parts with whole

Disadvantages
- At times tedious to calculate the sector angles
- The actual frequencies are not shown and need to be obtained by interpreting the chart

Pictogram

Advantages
- Can be made visually attractive
- Pictures make 'topic' clear

Disadvantages
- Hard to draw
- 'Fractional' pictures difficult to interpret

Data Representation in Eco-School Programme
- Data collected as part of the environmental review can be represented in the form of bar graphs, fractions, percentage, etc.
- Students will be able to apply mathematics concepts they study.
- Data collected when interpreted well, will help put in place a stronger action plan for implementation at the school level.
- Data can also be collected subsequent to the implementation of the action plan. The comparison of the data prior to and after the implementation of the action plan will help in evaluating the success of the action plan.

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