# ST.BRITTO'S GROUP OF INSTITUTIONS BELIEVE VロU CAN '15 

# STD - IX to XIII 

WWASTE MAINAIGEMENT

- PPPT

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## The Alshram

## Waste Management

You can't change the past but you can change the future, always remember to manage the waste effectively and efficiently.


## Topics

- What is Waste and Waste management?
- Issues relating to waste management
- States of waste
- Classification of waste
- Sources of waste
- Methods of Waste Management
- Recycling
- Benefits of Recycling
- Impact of waste accumulation
- Facts of e-waste
- 3R's
- Immediate steps
- Awareness


## What is Waste and Waste management?

- Wastes are items we don't need and discard after a primary use.

- Waste management is intended to reduce adverse effects of waste on health or environment


## Issues relating to waste management

- Waste minimization
- Waste removal
- Waste transportation
- Waste treatment
- Recycling and reuse
- Environmental considerations
- Financial and Marketing aspects
- Education and training
- Planning and implementation.


Every person, on an average generates about $400-500$ grams
of wastes per day. Hence in a
city of about 10 lakh people around 500 tonnes of wastes is being produced every day

## States of waste

## 1. Liquid type:

They include wash water from homes, liquids used for cleaning in industries and waste detergents.

## 2. Solid type:

They include old car tyres, old newspapers, broken furniture and even food waste.

## Classification of waste

## 1. Hazardous type:

$>$ Are inflammable, reactive, corrosive or toxic
> Includes pesticides, lamps, batteries, etc
2. Organic type:
> Are biodegradable
> Includes food waste, fruit and vegetable peels, flower trimmings, etc.

## 3. Recyclable type:

$>$ Includes Aluminium products, certain plastics, specific glass products, paper, etc...

## Sources of waste

ADomestic waste
A Commercial waste
A Medical waste
A Agricultural waste
A Automobile waste
A Industrial waste
A Construction waste


A Electronic waste

## Methods of Waste Management

## 1. Incineration Method:

A Means burning waste
A Great for treating hazardous waste
A Is effective, but expensive.

## 2. Sanitary landfills:

A Sorts all the waste and sends only the recyclable waste
A Minimize the leakage of soil pollutants getting into the water table
A Is effective, but expensive and difficult.

## Recycling

*Recycling is processing waste into new and useful products.
*Recycling consumes less energy.

Waste items that usually recycled are:
$\checkmark$ Paper waste
$\checkmark$ Recyclable Plastic waste
$\checkmark$ Aluminium waste.


## Benefits of Recycling

a) Recycling helps to protect the environment.
b) Recycling conserves natural resources.
c) Recycling saves energy.
d) Recycling creates jobs.
e) Recycling controls air, water and land pollution.

```
Don't be a Litter bug;
```

Just give a Tree a hug.


## 3R's

- Reduce

To make optimum use of it

- Reuse

Utilize it again and again.

- Recycle

Make out new things of it.

Thus, waste management paves great ways to nation's prosperity.

## Immediate Steps

* Plastic products should be banned.
* Minimize the use of plastic products, even though produced.
* Maximize the use of cloth bags.
* Segregate waste into 2 types:
- Biodegradable
- Non-Biodegradable



## Awareness

* A plastic bottle filled with water \& stored for about 24 hrs , plastic may react with water.
* When that water is consumed, it may cause PLASTIC

CANCER.

* Find ways to produce energy from plastic.

* The symbols below the plastic bottles is called as 'Resin ID Code'.
- \#1 -polyethylene terephthalate $]$ recyclable
- \#2-high-density polyethylene
- \#3-polyvinyl chloride
- \#4-low-density polyethylene
- \# 5 -polypropylene
- \#6-polystyrene
- \#7-resins or multi-materials




## Thank you!!!!...



Presented by:
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- IX std

The Ashram MAT. H.S.S

## St.Britto's Matric. HIr. Sec. School




The Swachh Bharat Abhiyan is India's biggest cleanliness drive ever which spent 62,000 crores.

- It was launched on October 2,2014 on the birthday of oFATHER OF OUR NATION* at Rajghat, New Delhi by Prime Minister Narendra Modi.
He said that we all clean our homes during Diwali now it is the turn to clean our country.
- We clean our homes because we think that Goddess Lakshmi comes in dean places, so we will clean India so that Goddess comes in India!
- The Narendra Modi Governmentlaunched the "Swachh Bharat" movement to solve the sanitation problem and waste management in India by ensuring hygiene across the country.








## SLOGANS

$\checkmark$ Cleanliness from inside and outside, health automatically will reside both sides
$\checkmark$ Don't ever be MEAN to the ones who CLEAN $\checkmark$ When you refuse to reuse it's our India you abuse.
$\checkmark$ Clean Dust from your Glass, Clean Dust from your Class.


## DAIV -Aldambakkam



## CLASSIFICATION OF WASTE

Biodegradable


Non-biodegradable - It cannot be broken dovin in a cortain amsurit of lime.


## What Is e-Waste?

- Electronic waste, commonly referred to as e-waste, are the discarded and no longer-in-proper-condition type of electrical and electronic wastes.
- Processing of e-waste may cause serious health hazards.



## BEFORE



## Composition of e-waste

Others
Consumer $\quad 10 \% \quad$ Large Household
Electronics 14\%


Appliances $42 \%$

IT
Communications Technology 34\%

## ENVIRONMENTAL IMPACT

- About 40 million tonnes of e-waste is produced and about $13 \%$ of it is recycled. Almost 9 million tonnes are produced by USA.
- Liquid and toxic atmospheric releases will end up in the air we breathe and the water we drink.


Disposal of e-waste also leads to health hazards.



## PROCESSING OF E-WASTE

- To obtain the highest possible result, labour intensive methods are used to processe-waste.
- This allows us to get pure product, free from any contamination.
- There are two types of materials recovered frome-waste :-

i. Material recovery and
ii. Component recovery.

THE PROCESS


## THE SOLUTION???

$>$ Segregation of wastes and e-wastes differently may help to partially solve the current problem.
$>$ Setting up of more WASTE RECYCLING FACIITIIES WITH MODERN AND SOPHISTICATED E-WASTE PROCESSING MECHANISM along the suburbs.
>Incinerating the e-wastes, instead of burning, will reduce the carbon dioxide.


## IS IT COST-EFFECTIVE???

- India is a country where there is a huge production of electronic gadgets and thus it would lead to high profits if e-waste is recycled.
- Guiyu region in the Shantou region of China is a typical e-waste processing plant which recydes about 10 tonnes of e-waste per day.



## Resources Recoveredl!!!

- Audio visual and stereo instruments, and other fandheld devices contain valuable elements like noff, copmerandleal?
-The majority of afuminium and copperrecovered is sent to the automobile industry where e it is used extensively.


Aluminium processed to produce a car.

## An alternate source of fuel???

- It is claimed that the wood obtained from the smelting of e-waste can be used as a fuel.
- When wood is mixed with various proportions of liquid hydrocarbons, it gives out a large amount of heat, indicating a high calorific value.
- This is a very innovative idea on the disposal of e-waste.


The fuel is still undergoing various tests.

## E-Waste In Robotics-How???

- Rpboticsisan interesting field wfich can use the materials gained out off waste processing.
- Silicon and other semiconductors are very helpful in the designing of robots.
- Such innovative ideas can significantly reduce the amount of garbage in the landfilfs.


Robotics assume
significance in
this field.


Land-fills must be cleansed
-This presentation is done by

## Pon Vidyashram

## SWACHH BHARAT ABIYAN

Cleanliness
And
Waste Management

## Swachh Bharat Abiyan

a. Swachh Bharat Abhiyan is a national campaign by the Government of India, covering 4041 statutory towns, to clean the streets, roads and infrastructure of the country.

- This campaign was officially launched on 2 October 2014 at Rajghat, New Delhi, where Prime Minister Narendra Modi himself cleaned the road. It is India's biggest ever cleanliness drive and 3 million government employees and school and college students of India participated in this event. The mission was started by Prime Minister Modi, who nominated nine famous personalities for the campaign, and they took up the challenge and nominated nine more people and so on. It has been carried forward since then with people from all walks of life joining it.


## The Personalities

- Goa Governor Mridula Sinha

ㅁ. Cricket legend Sachin Tendulkar

- Yoga guru Baba Ramdev
- Congress lawmaker and former union minister Shashi Tharoor
- Actor Kamal Hasan
- Actor Priyanka Chopra
- Actor Salman Khan
- Industrialist Anil Ambani


## Cleanliness

- Cleanliness is both the abstract state of being clean and free from dirt, and the process of achieving and maintaining that state. Cleanliness may be wed with a moral quality, as indicated by the aphorism "cleanliness is next to godliness," and may be regarded as contributing to other ideals such as health and beauty.



## Waste Management

- Waste management is a set of activities that include the following:
- collection, transport, treatment and disposal of waste;
a control, monitoring and regulation of the production, collection, transport, treatment and disposal of waste; and
- prevention of waste production through inprocess modification, reuse and recycling.



## Biodegradable Waste

Biodegradable waste is a type of waste which can be broken down, in a matter of weeks or few months, into its base compounds by microorganisms and other living things, regardless of what those compounds may be.
Biodegradable waste can be commonly found in municipal solid waste as green waste, food waste, paper waste, and biodegradable plastics. Other biodegradable wastes include human waste, manure, sewage, sewage sludge and slaughterhouse waste.

## Biodegradable Waste



## Non Biodegradable Waste

- Non-biodegradable waste is a type of waste that can not be broken down into its base compounds by micro-organisms, air, moisture or soil in a reasonable amount of time. Nonbiodegradable waste is an environmental concern, as it threatens to overwhelm landfills and create disposal problems.


## Nom Biodegradable Wastes



## Ways To Prevent Waste

- Bring reusable bags and containers when shopping, traveling, or packing lunches or leftovers.
- Choose products that are returnable, reusable, or refillable over single-use items.
- Be aware of double-packaging - some "bulk packages" are just individually wrapped items packaged yet again and sold as a bulk item.


## Ways To Prevent Waste

- Compost food scraps and yard waste. Food and yard waste accounts for about 11 percent of the garbage thrown away in the Twin Cities metro area. Many types of food scraps, along with leaves and yard trimmings, can be combined in your backyard.
- Reduce the amount of unwanted mail you receive. The average resident in America receives over 30 pounds of junk mail per year.


## RECYCLE

## REDUCE

REUSE


# Swachh Rhavat Cleanfiness 

Waste management

St. John's Public School

## What are Wactes?

Sulbsancess or ojjects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisons of the law.

## Qaserutios \& Clawitherition

## Kinds of Waste

Solid wastes: Wastes in solid forms, domestic, comnertioland induction wastes.
framoles plastics, foam containers, bottes, cans, paperts, sctap iton, and other trash.

- limuid Whastes Wastas in Itquid form.
Fxamplas: domestic washings, chemicals, oils, waste watex form ponds, manufacturing industicis and other sourees.

Classification of Wastes
$>$ Bio-degradable can be degkaded (papet, wood, fruits and others).
Noneliodergradilile cannot be degraded (plastics, bottles, old machines, cans, foam containers and others)

Paterories of Plassification
Wade Aceordine to their orieing
$>$ Municipal Solid wastes
$>$ Industrial wastes
$>$ Agricultural wastes
> Fishery wastes
$>$ Radioactive wastes
> E-wastes

## E-wate finanagement

- Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered as e-waste. Informal processing of electronic waste in developing countries may cause serious health and pollution problems, as these countries have limited regulatory oversight of e-waste processing.



## MAGNTIUE OF RPOBIEM: Indian Scenario

- Per capita waste generation increasing by $1.3 \%$ per annum
- With urban population increasing between 3 3.5\% per annum
- Yearly increase in waste generation is around $5 \%$ annually
- India produces more than 42.0 million tons of municipal solid waste annually.
- Per capita generation of waste varies from 200 gm . to 600 gm . per capita / day. Average generation rate at 0.4 kg per capita per day in 0.1 million plus towns.


## Challenges faced ly developing countries

- Waste management in cities with developing economies and economies in transition experience exhausted waste collection services, inadequately managed and uncontrolled dumpsites and the problems are worsening. Problems with governance also complicate the situation. Waste management, in these countries and cities, is an ongoing challenge and many struggle due to weak institutions, chronic underresourcing and rapid urbanization. All of these challenges along with the lack of understanding of different factors that contribute to the hierarchy of waste management, affect the treatment of waste.


## Hiesarcly of Waste Manafement

- The evaluation of processes that protect the environment alongside resource and energy consumption to most favourable to least favourable actions. The hierarchy establishes preferred program priorities based on sustainability. To be sustainable, waste management cannot be solved only with technical end-of-pipe solutions and an integrated approach is necessary.


## IIPACIS OF WASIE IF NOI MANAGED WISELY

- Affects our
health,
socio-economic conditions, coastal and marine environment climate
- Changing regional climates could alter forests, crop yields, and water supplies.
- Deserts might expand into existing rangelands, and features of some of our national parks might be permanently altered.

Solatios for nustio mencyenenent

- Landfill.
- maineration
- Recyding
- Sustainabólity
- Biological Processing



## Initiatives



## Thank You

Let Swachh Bharat inspire many people and manage the waste in our country.
Wishing you all a happy independence day....!!!
Jai Hind!!!

## CRESCENT SCHOOL



## BIO-DEGRADABLE

- Substances that are broken down by biological process or microbial action.



## NON BIO-DEGRADABLE

- Substances that are not broken down by any biological process or microbial action.



## PREVENTION FROM HAZARDOUS WASTE

The following methods are adopted for the disposal of harmful waste materials:
> Land fills.
> Deep Well Injection.
> Incineration.

## LANDFILLS

- The are permanent storage facilities in secured lands for milifary related liquids and radioactive materials.



## INCINERATION

- The burning of materials is called incineration.
- Hazardous bio-medical waste are usually disposed off by means of Incineration.
- Human anatomical wastes, discarded medicines, toxic drugs ,blood , pus , micro-biological and biotechnological wastes etc., are called bio-medical waste.


## Incineration



## WASTE WATER FROM INDUSTRIES



## Sewage treatment plant

- This treatment involves in three major steps:

1. Primary treatment
2. Secondary treatment
3. Tertiary treatment


## RECYCLE

- After using every materials (such as: Plastic,iron,etc.) that must be recycled and re-used.


## REUSECS REDUCE RECYCLE



## Waste Managementhierarchy



Best Option

Worst Option

## OTHER MEANS TO CONTROL WASTE

* Awareness program among the students must be conducted by all the institutions because the students are the future leaders of our nation.
* Household waste are collected and separated as biodegradable and non bio-degradable.
* These bio-degradable are digged and buried to trap bio-gas, bio-diesel ,etc.
* The household waste water are filtered and can be used for domestic purposes such as: Car washing, gardening, etc.
* Waste must be minimized.



## AIMIIRTA VIDYYALAIYAMM



Waste management is a set of activities that include the following
collection, transport, treatment and disposal of waste; control, monitoring and regulation of the production, collection, transport, treatment and disposal of waste; and prevention of waste production through in-process modification, reuse and recycling.
The term usually relates to all kinds of waste, whether generated during the extraction of raw materials

# SOURGES OF WASTE 



From our newspapers to our paper wrappings, paper is still everywhere and most of them are ending up in our landfills creating a staggering amount of paper waste. There was a time when paper was a rare and precious commodity. Now it fills our planet. It was initially invented as a tool for communication, but today, paper is used more for packaging.
10 liters of water is needed to make one piece of A4 paper. To produce paper takes twice the energy used to produce a plastic bag Everything takes energy to produce.

Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered as ewaste.
Only $12.5 \%$ of e-waste is currently recycled. It takes 530 lbs of fossil fuel, 48 lbs of chemicals, and 1.5 tons of water to manufacture one computer and monitor.

## INDIA'S STAITSON GARBAGE

## - Per capita waste generation increasing by $1.3 \%$ per annum <br> With urban population increasing between $3-3.5 \%$ perannum

- Yearly increase in waste generation is around 5\% annually
- India produces more than $42: 0$ million tons of municipal sollid waste annually.
- Per capita generation of waste varies from 200 gm to 600 gm per capita / dayo Average generation rate at 0.4 kg per capita per day in 0.1 million plus townso


## SEWAGE TREATMENT PLANTS



## DUMP YARD MANAGEMENT

Disposal of waste in a landfill involves burying the waste and this remains a common practice in most countries. Landfills were often established in abandoned or unused quarries, mining voids or borrow pits. A properly designed and well-managed landfill can be a hygienic and relatively inexpensive method of disposing of wastermaterials Designcharacteristics of a modern landfill include methods to contain leachate such as clay or plasticlining material. Deposited waste is normallycompacted to increaseits density and stability and covered to preventattracting vermin (such as miceor rats)。 Manylandfills also have landfillgas extraction systems installed to extract the landfillgas: Gas is pumped out of the landfill using perforated pipes and flared off or burntin agas engine to generate electricity,

Biomedical waste may also include waste associated with the generation of biomedical waste that visually appears to be of medical or laboratory origin (e.g., packaging, unused bandages, infusion kits, etc.) ;as well research laboratory waste containing biopmolecules or organisms that are restricted from environmental release

## OUR LIGHT BULBS 8

## THE THREE RS

REDUSE
REUSE
RECYCLE

$I$

## ST.BRITTTO'S ALCADEMY

##  <br> SWACHH BHARAT - INNOVATIVE MODELS FROM WASTE

## DONE BY: SHERLIN AND

## SANJANA



Waste management is a set of activities that include the following:

- collection, transport, treatment and disposal of waste
- control, monitoring and regulation of the production, collection, transport, treatment and disposal of waste;
- And prevention of waste production through in-process modification, reuse and recycling
- Following the onset of industrialisation and the sustained urban growth of large population centres in England.
- the build up of waste in the cities caused a rapid deterioration in levels of sanitation and the general quality of urban life.
- The streets became choked with filth due to the lack of waste clearance regulations. Calls for the establishment of a municipal authority with waste removal powers




## RECYCLING R-U-B-B-E-R!



Dresses out of rubber is really fashionable to wear and also reduces some percentage of waste.


## AMMM Matric. Hr: Sec. School

# Waste management On house hold level 

By
Afthaf Hussain
Prateek Selvam

## What is waste management?

- Waste management simply refers to the control and reduction waste.
- Waste management is intended to reduce adverse effects of waste on health, the environment or aesthetics.



## Types of E waste



## Methods of controlling waste

- Separating degradable and non-degradable waste.



## Methods of controlling waste

- Recovery and Recycling
- Recycling is the process of converting waste products into new products to prevent energy usage and consumption of fresh raw materials



## Methods of controlling E-waste

- Re-evaluate. Do you really need that extra gadget? Try finding one device with multiple functions.
- Extend the life of your electronics. Buy a case, keep your device clean, and avoid overcharging the battery.



## Waste collection



- People who earn their living by collecting and sorting garbage and selling them for recycling (waste pickers), Payatas,


## Methods of controlling waste

- Reusing
- Reusing plastics can save plastic waste on a household level.



## Types of biodegradable waste



## Non bio-degradable waste

- Non-biodegradable waste is a type of waste that can not be broken down into its base compounds by micro-organisms, air, moisture or soil in a reasonable amount of time.


## Interesting fact:

Plastic is considered a non bio-degradable waste but it can actually degrade. Since this process takes thousands of years which is a unreasonable time it is considered a non biodegradable waste.

## Types of non bio degradable waste




## Methods of controlling waste

- Vermicompost
- It is a good method in which household waste can be controlled.


Erase the
Don't
trashour future.
Recycle:





MEDIA PARTNER
-क்கण이

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