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The Ashram

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

- Domestic waste
 Commercial waste
 Medical waste
 Agricultural waste
 Automobile waste
 Industrial waste
 Construction waste
- ▲Electronic waste

Methods of Waste Management

1. Incineration Method:

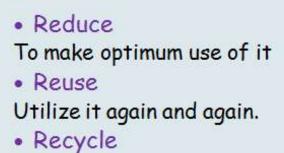
- ▲Means burning waste
- ▲ Great for treating hazardous waste
- ▲ Is effective, but expensive.

2. Sanitary landfills:

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



3R's



Make out new things of it.

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

Immediate Steps

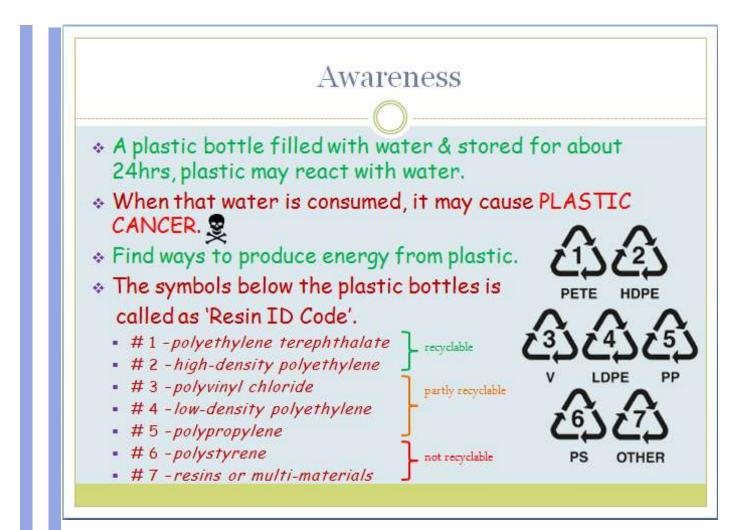
 Plastic products should be banned.

edu

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

Producers don't take responsibility for the impact of plastic bags. They are cheap to produce but very expensive to dispose.

Disposed plastic waste in the sea gets into the food chain.





St.Britto's Matric. Hr. Sec. School





STEPS TAKEN BY NARENDRA MODI FOR SWACHH BHARATH

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 "FATHER 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 Government launched the "Swachh Bharat" movement to solve the sanitation problem and waste management in India by ensuring hygiene across the country.





Biodegradable waste:

- Animal or plant matter that decompose naturally due to microorganisms, heat and oxygen is biodegradable waste.
- Recycling biodegradable waste into a nutrient-rich, usable material is often called "composting."
- Composting requires substance that can later be added to soil to make it better for plant growth.
- We can recycle biodegradable waste at home, using a service or through a community organization.



NON BIO DEGRADABLE WASTE:

640

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Non-biodegradable materials are the waste that cannot be broken down in nature.

These materials cannot be decomposed either by air, climate, moisture or soil.

The most common non-biodegradable waste are bags, bottles, cans, tins and other products made of plastic.

Dangerous chemicals and toxins are also non-biodegradable.

LANDFILL

nd is a are

 Disposing of waste in a landfill involves burying the waste, and this remains a common practice in most countries.

Landfills were often in unused quarries, mining voids or borrow pits. A landfill is inexpensive method of disposing of waste materials.

 Landfills can create a number of adverse environmental impacts ·landfills is mostly composed of methane and carbon di oxide which is produced as organic waste breaks down anaerobically

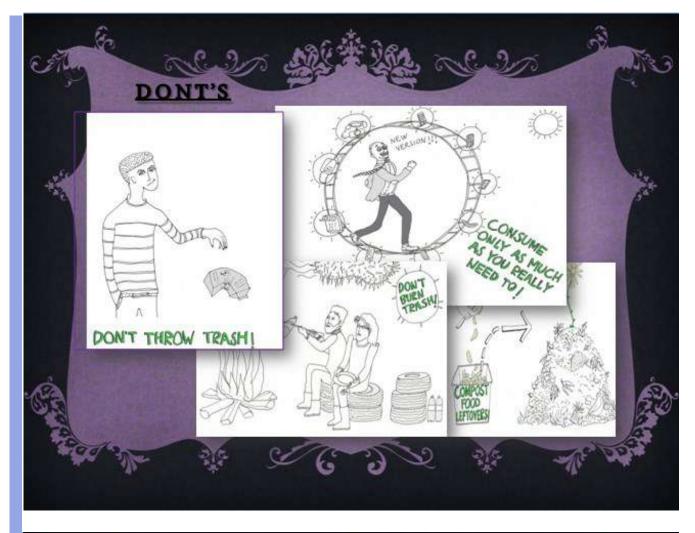
This gas can create odour problems, kill surface vegetation,

E-WASTE

- Electronic waste or e-waste is discarded electrical or electronic devices.
 used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered as e-waste.
- Processing of electronic waste in developing countries may cause serious health and pollution problems.
- Even in developed countries recycling and disposal of e-waste may involve risk to workers and communities and great care must be taken.
- E-waste can be managed by recycling.











DAV -A dambakkam





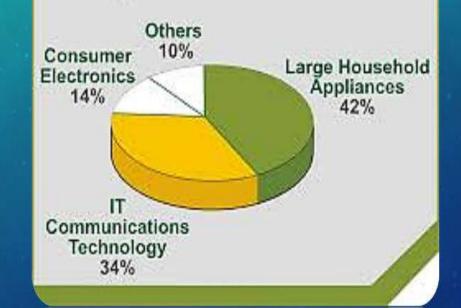


BEFORE



COMPOSITION OF E-WASTE

Composition of e-waste



ENVIRONMENTAL IMPACT

 About <u>40 million tonnes</u> of e-waste is produced and about 13% of it is recycled. Almost <u>9 million tonnes are produced by USA.</u>

• *Liquid and toxic atmospheric releases* will end up in the air we breathe and the water we drink.

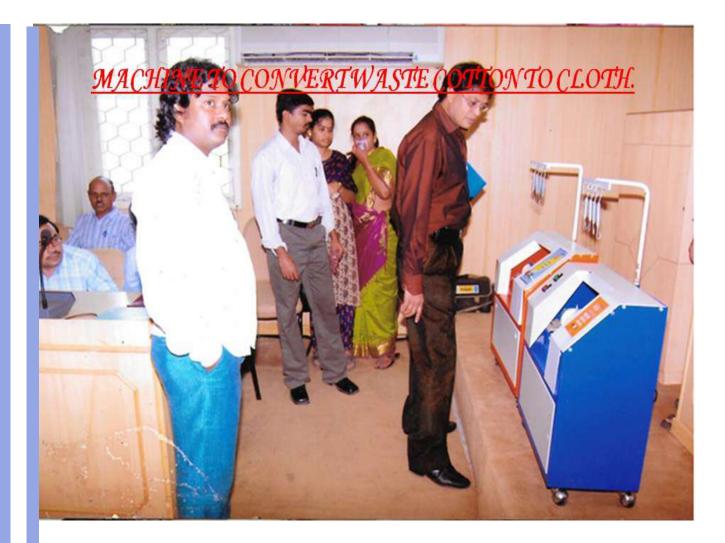


Disposal of e-waste also leads to health hazards.



AN IDEA ON RECYCLING COTTON WASTE







Semi Automatic Machine



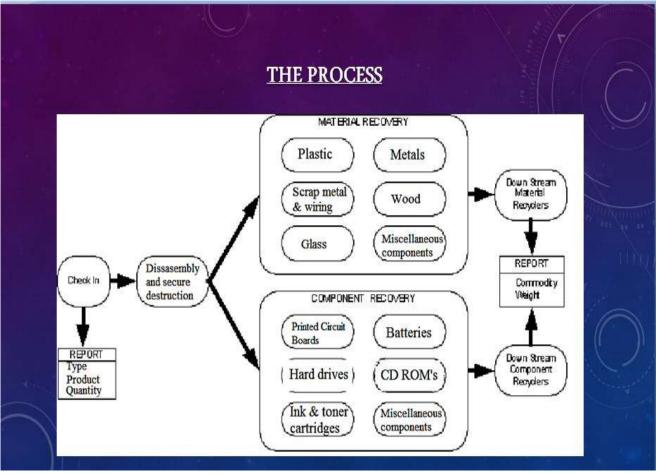


PROCESSING OF E-WASTE

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



- i. Material recovery and
- ii. Component recovery.



THE SOLUTION ???

Segregation of wastes and e-wastes differently may help to partially solve the current problem.

> Setting up of more **WASTE RECYCLING FACILITIES 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 recycles about 10 tonnes of e-waste per day.

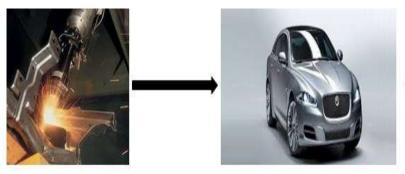




Resources Recovered!!!

Audio visual and stereo instruments, and other handheld devices contain valuable elements like gold, copper and lead.

The majority of aluminium and copper recovered is sent to the automobile industry where 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 <u>can be</u> <u>used as a fuel.</u>
- 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.



E-Waste In Robotics-How???

- Robotics is an interesting field which 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 landfills.



Robotics assume significance in this field.



Land-fills must be cleansed

THANK YOU!!!

This presentation is done by

Aakash Murugan And Harish Kumar

Pon Vidyashram

SWACHH BHARAT ABIYAN

Cleanliness And Waste Management

Swachh Bharat Abiyan

- 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
- 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;
- 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.

Non Biodegradable Wastes





- 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



St. John's Public School



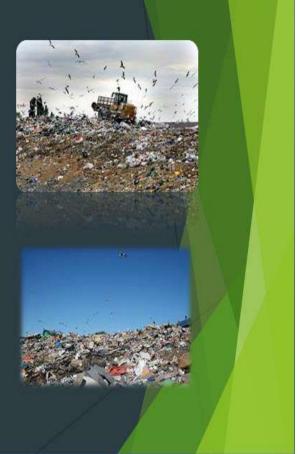
Cleanliness

Waste management

By St. John's Public School

What are Wastes?

Substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of the law.



Categories & Classification

Kinds of Waste

Solid wastes: Wastes in solid forms, domestic, commercial and industrial wastes.

Framples: plastics, foam containers, bottles, cans, papers, scrap iron, and other trash.

Liquid Wastes: Wastes in liquid form.

<u>Fxamples:</u> domestic washings, chemicals, oils, waste water from ponds, manufacturing industries and other sources.

Classification of Wastes

- Bio-degradable can be degraded (paper, wood, fruits and others).
- Non-biodegradable cannot be degraded (plastics, bottles, old machines, cans, foam containers and others)

<u>Categories & Classification</u>

Warte According to their origins

- > Municipal Solid wastes
- > Industrial wastes
- > Agricultural wastes
- > Fishery wastes
- > Radioactive wastes
- > E-wastes

E-waste Management

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.



MAGNITUDE OF PROBLEM : 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 by 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.

Hierarchy of Waste Management

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.

IMPACTS OF WASTE IF NOT 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.

Solutions for waste management

- 🕨 Landfill
- Incineration
- Recycling
- 🕨 Sustainability
- Biological Processing

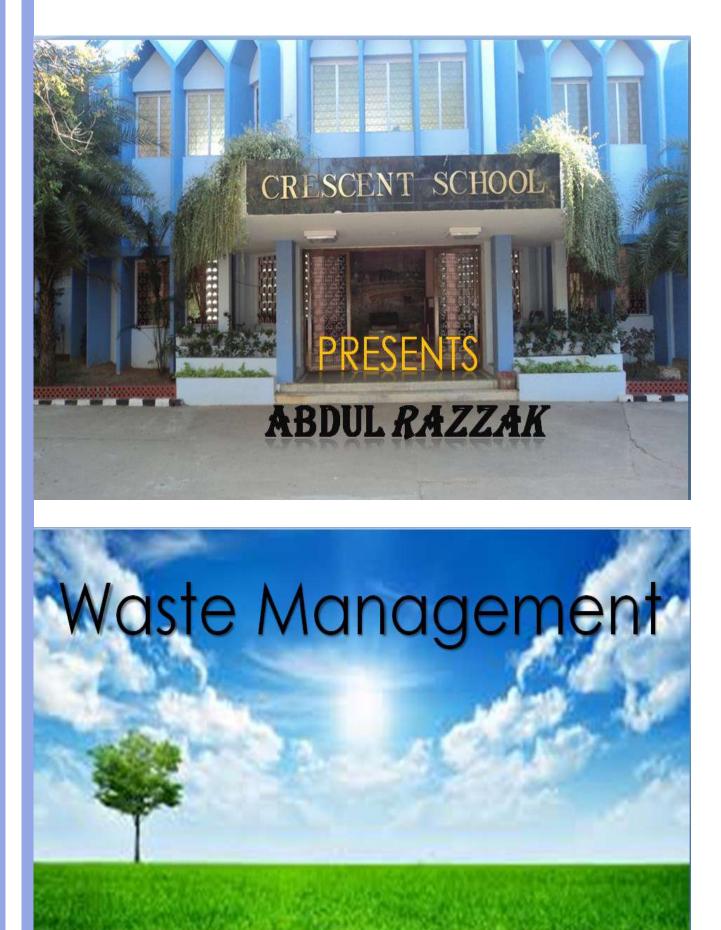




7hank You

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

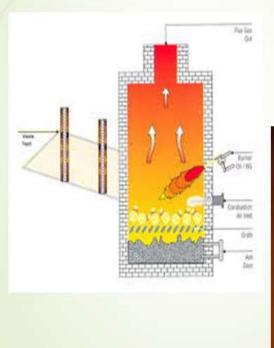
 The are permanent storage facilities in secured lands for military related liquids and radioactive materials.



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





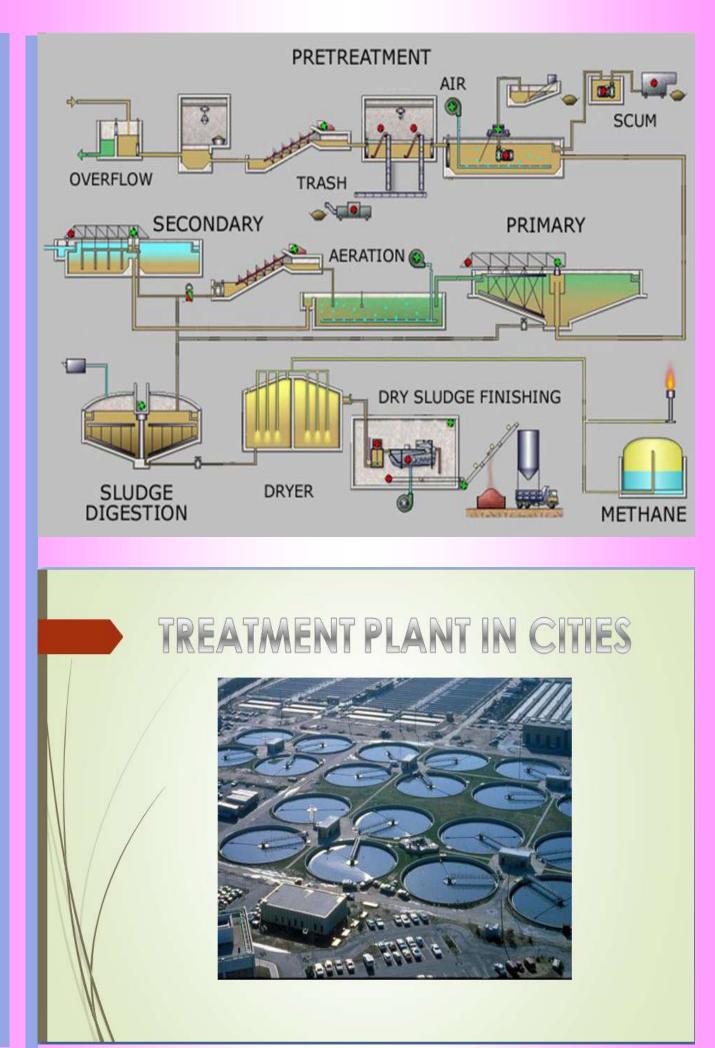
WASTE WATER FROM INDUSTRIES





Sewage treatment plant

- This treatment involves in three major steps:
- 1. Primary treatment
- 2. Secondary treatment
- 3. Tertiary treatment





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



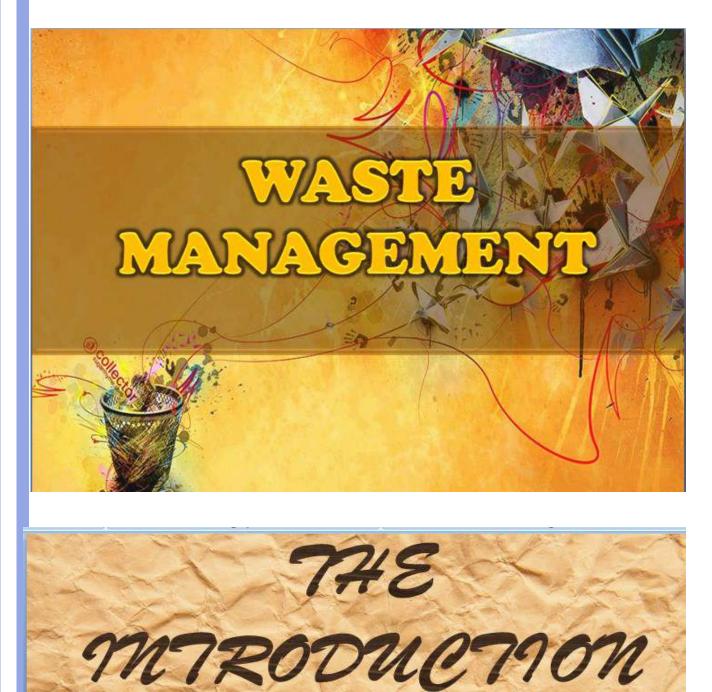


OTHER MEANS TO CONTROL WASTE

- 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.



AMIRTA VIDYALAYAM



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





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 e-waste.

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 STATS ON GARBAGE

- 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.

SEWAGE TREATMENT PLANTS



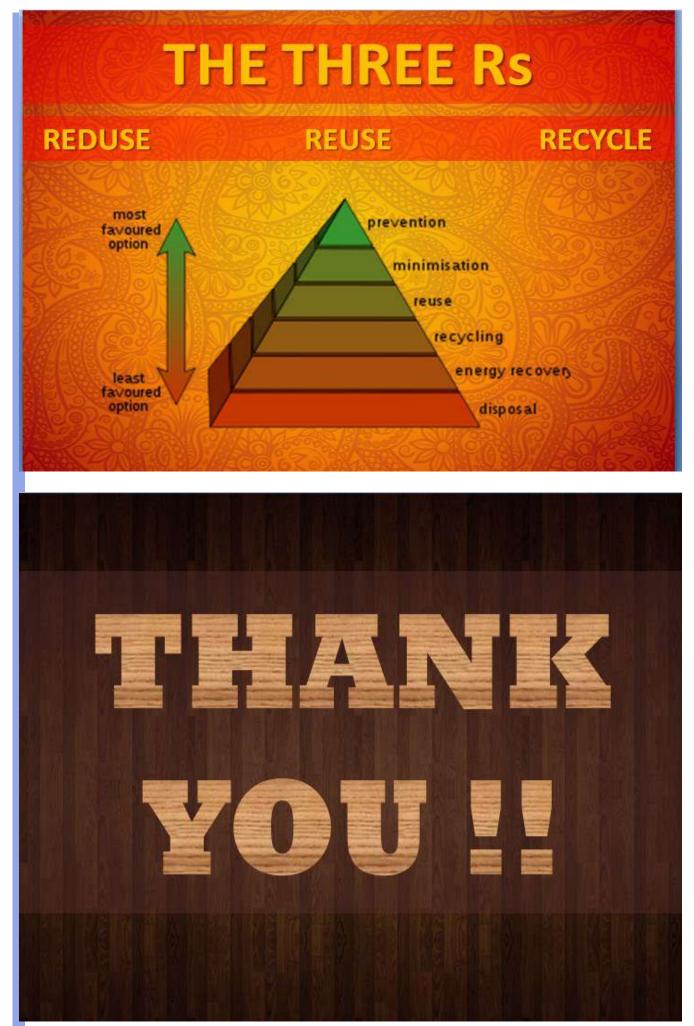
Liquid waste is highly increasing day by day, most of these wastes are untreated sewages which represents the core of the problem. in these crucial situations a need of sewage treatment arrives.. in metropolitan cities like Chennai, there is a high need for sewage treatment plants. as we can observe the polluted Cooum river as a high result of lack of sewage systems.

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 waste materials Design characteristics of a modern landfill include methods to contain leachate such as clay or plastic lining material. Deposited waste is normally compacted to increase its density and stability and covered to prevent attracting vermin (such as mice or rats). Many landfills also have landfill gas extraction systems installed to extract the landfill gas. Gas is pumped out of the landfill using perforated pipes and flared off or burntin a gas 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 bio molecules or organisms that are restricted from environmental release



OUR LIGHT BULBS !



ST.BRITTO'S ACADEMY

SWACHH BHARAT - INNOVATIVE MODELS FROM WASTE



DONE BY: SHERLIN AND SANJANA





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

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- 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



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_Combustible waste Rubbish 0%

Plastic







Food waste converted to manure due to decomposition for food matter and used for growth of plants







Its really amazing that we can make batteries out of vegetables like potato. This can also be practiced for working of small appliances at home

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



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



At School

•Try to use ink pens and reduce the use of plastic pens.

·Use recycled paper.

•Have a group of students to help in recycling.



AMM 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.





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.

<u>Interesting fact:</u>

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







THE FOR SHIRE & RESPONSIBILITY - CONTRIBUTE HAR SHIRE & WEINTS

Methods of controlling waste

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









SBM







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