



# HERITAGE MATTERS

No. 5 — A worksheet produced by the St. Christopher Heritage Society for Primary Schools

## SOLID WASTE MANAGEMENT

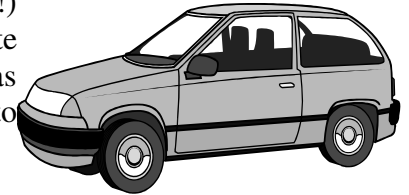
### What is Solid Waste?



Everyone in the world, even a new born baby, produces solid waste (also called trash, garbage or rubbish). It can be candy wrappers, tissue paper, and grass. Any unwanted material that is discarded by the owner is considered waste. Solid waste can be put in different groups; household, green, commercial, industrial, institutional, E-waste, tyres, construction & demolition, land clearing, asbestos, derelict vehicles, white goods.

A **derelict vehicle** is any publicly discarded vehicle that cannot be used again. **Green waste** is any plant material, even if it is no longer green. **E-waste** would include computers, cell phones, and other electronic goods. **White goods** are refrigerators and stoves. (Imagine there are a number of people who throw away refrigerators and stoves that are still working just because they got a new or bigger one!)

**Construction & demolition** waste can include old board, broken concrete blocks, steel rods and paint cans. **Asbestos** is a fibre-like material that was used in construction and the inhalation of those fibres has been linked to various, often fatal, forms of lung diseases.



### What happens to garbage after it is thrown into the garbage bin?

What day does the garbage truck come to collect your garbage? Most of you may know but after the truck takes it away, what happens to it? Let's find out.

The men throw the garbage in the back of the truck and it is compacted, that is squeezed very tight to hold more garbage. The truck then takes the garbage to the **landfill**. The truck has to pass over a weighbridge to find out how much garbage is in the truck. The truck then goes into a deep hole, called the **cell**, and is directed to the **tipping area** where the garbage is dumped. A heavy bulldozer then drives back and forth over the garbage to flatten it. At the end of the day the flattened garbage is covered with soil. The soil keeps off flies and other pests and reduces the bad smell. Some pieces of garbage will **decompose** with time while others like plastic can be around for years.



### How Long does trash take to decompose?

Paper Towel	2-4 weeks	Tin Can	50 years
Newspaper	6 weeks	Styrofoam Cup	50 years
Apple Core	2 months	Aluminium Cans	200 years
Cardboard Box	2 months	Plastic bottle	450 years
Wooden stick	13 years	Glass bottles	indefinite

Source Rotoract's Environment Education Booklet

This worksheet is sponsored by The East Caribbean Central Bank (ECCB)

## Managing solid waste

Have you seen pictures of the streets where there is garbage on the streets, in the drains and all around? That could happen if there was not a truck to collect and remove the garbage or no garbage bins were available. *If you know of any garbage heaps in your neighbourhood or school talk about it to your teacher or parents to see what you and others can do to manage that garbage.* There are a number of ways that solid waste is managed.

**Source Reduction** is also known as waste prevention. This means that you would make or generate less garbage. If less garbage is made then the landfill would last longer and money can be saved. *List the things that you can do to reduce the amount of garbage that you generate. Discuss this in class and begin a waste reduction project in your class.*

**Landfills** are also major components of waste management. A landfill is a large area of land or an excavated site that receives waste.

**Composting** is the decomposition of organic materials such as yard trimmings and food scraps by microorganisms. The byproduct of this process is compost—a soil-like material rich in nitrogen and carbon that can be used as a plant fertilizer supplement.

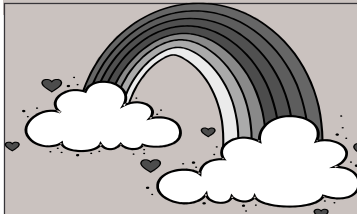


### THE FOUR R'S OF CONSERVATION:

*Reduce*  
*Recycle*

*Re-use*  
*Recover*

## ACTIVITIES



1. Make a trash rainbow mural by organizing the trash into rainbow colors. Draw the outline of a rainbow on the paper first, then paste the trash in the appropriate color band on the mural.
2. Organize trash by the purpose it had during its useful life. For example: was it a product or packaging for a product? A cleaning product, food product, or hair product? Write down category names on a mural and then paste their trash in the appropriate spot.
3. Design a 3-D trash sculpture. Think about the color and shape of each trash item before gluing it onto the sculpture.
4. Describe the life history of trash. Where and how did it start; what places did it travel; where and how was it used; how was it disposed of, where did it go; how will it end up?
5. What will you do in your class, in your school, in your home, in your community, in your Country to reduce, reuse and recycle garbage and how can you influence others to be aware of solid waste management?

## UNSCRAMBLE THE FOLLOWING WORDS THAT ARE FOUND IN THIS WORKSHEET:

*AERGABG, NREMAU, RQEUAIF, SOSBASET, LDIFLNAL, STOPMCO, SRIGAMORICMONS*

ANSWERS: *micro-organisms, compost, landfill, asbestos, asbestos, aquifer, aquifer, manure, manure, garbage, garbage*

## **COMPOSTING: - turning raw organic material into soil fertiliser**

### **What can be composted:**

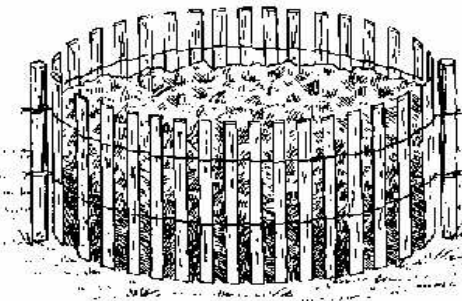
Grass clippings  
Leaves  
Small twigs  
Flowers  
Non-spreading weeds  
Old plants/potting soil  
Wood chips



### **What not to compost :**

Meat, fish, cheese or other food wastes  
Diseased or insect infested plants  
Weeds gone to seed  
Dog and cat wastes  
Large branches  
Pressure treated, painted or preserved lumber

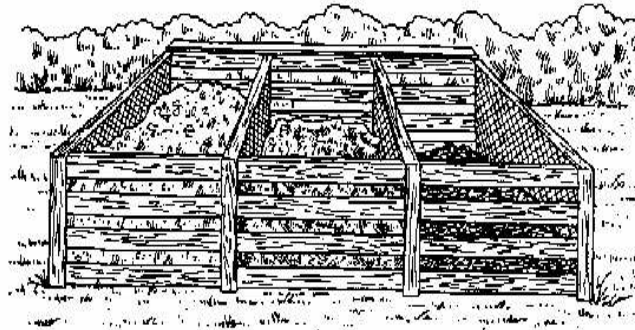
### **Passive Composting Bins**



Simple containers or open piles for yard wastes are the least labor and time-consuming way to compost. Non-woody yard wastes are the most appropriate.

Place grass clippings, leaves, small twigs, and peelings from vegetables into the unit or pile. Alternate the leaves with grass clippings. Add water to keep it moist but not too wet. The pile may be turned to add air to the mixture and speed up the composting process. This method can take from 6 months to 2 years to compost organic materials.

### **Active Composting Bins**



This is a series of three or more bins that allows wastes to be turned on a regular schedule. If you have a lot of yard waste, like a lot of leaves and grass from cleaning the school, then this method is good.

Alternate layers of leaves and grass. Add some animal manure, from cows, donkeys, chickens or rabbits. Don't use cat or dog litter. The manure will help keep heat in the mixture. Water the pile to keep it as moist as a damp sponge. Piles should be about 3' x 3' x 3'.

When the heat decreases substantially (5-10 days), turn the pile into the next bin. Then make a new pile in the original bin. Repeat the process each time the pile in the first bin cools. After two weeks in the third bin, the compost should be ready for the garden use.

This method produces a high-quality compost in a short time but requires more effort and space than a holding unit. The unit can be built of wood, a combination of wood and wire, or concrete blocks.

***Please forward your questions, comments or suggestions to:***

**St. Christopher Heritage Society,**

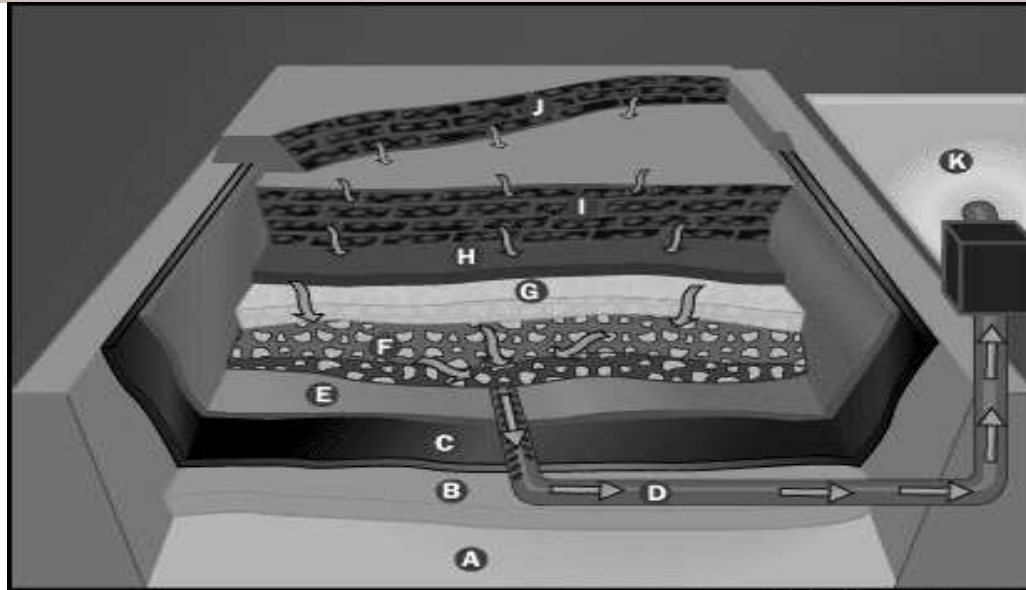
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## Parts of a landfill

Can you remember how garbage at Conaree was treated before the landfill was built? If you don't, ask your teacher or your parents. What are the differences between an open dump and a landfill? Ask your teacher to organize a trip to the landfill. After the field trip your class with the help of your teacher can try to make a model of a landfill cell.



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- |                             |                   |
|-----------------------------|-------------------|
| A. Ground Water             | G. Drainage layer |
| B. Compacted Clay           | H. Soil Layer     |
| C. Plastic Liner            | I. Old Cells      |
| D. Leachate Collection Pipe | J. New Cells      |
| E. Geotextile Mat           | K. Leachate Pond  |
| F. Gravel                   |                   |

Picture taken from [www.howstuffworks.com](http://www.howstuffworks.com) (type "parts of a landfill" in search)

### WORD POWER

**Aquifer:** An underground zone of earth, usually composed of gravel or porous stone, that contains water and frequently serves as a source for a well. An aquifer can become contaminated through poor waste disposal practices.

**Biodegradable:** Material which is capable of being decomposed by bacteria.

**Decompose:** To break down into basic elements; to rot.

**Groundwater:** Water present in an aquifer. Groundwater can be "free" to float from one area to another. It is often a source of surface water and can become polluted through improper waste disposal practices.

**Humus:** A brown or black substance resulting from the partial decay of leaves and other vegetable matter; the organic part of the soil.

**Landfill:** An outdoor area for waste disposal where discarded materials, having been compacted beforehand, are covered with a layer of earth.

**Organic Waste:** Once-living material which is now useless, e.g. food scraps.