

# Sustainable Development – Adopting “Green Lifestyles”

### Explanatory Notes for Teachers

Level: S3

Topic: Sustainable Development

Supporting Teaching Materials: Students’ worksheet; EPD website

#### Students’ Prior Knowledge

Before completing this ELA unit, students should have learnt about waste management and the concept of waste reduction, as well as other terms relating to this unit, through the medium of Chinese.

#### Aims and Objectives

##### I. Content Objectives

After completing the ELA activities, students should be able to use English to:

1. describe how daily activities / city life styles impact on the environment;
2. learn about green lifestyles by studying waste management and waste reduction;
3. demonstrate understanding of various methods of solving the waste problem.

##### II. Language Objectives

After completing the ELA activities, students should be able to:

1. understand and use the English terms related to this topic (e.g., *raw material, processed, life cycle, disposal methods, landfill, incinerator, renewable energy, construction waste, commercial and industrial waste, domestic waste, waste management/reduction, greening space, environmental awareness*)
2. describe waste management and waste reduction policies using appropriate English expression (e.g., *the major sources of waste in Hong Kong are commercial waste, industrial waste and construction waste; waste management means avoiding/minimizing waste production, reusing/recycling materials, waste treatment and disposal in a landfill*)
3. use appropriate English expressions for explaining how daily life activities impact on the environment (e.g., *In order to achieve a green lifestyle we need to reduce the amount of waste we produce/separate our waste into different types/ recycle products rather than disposing of them*)

Procedure:

1. Activity 1 - Students review the life cycle of a product and reflect on the way we treat our resources after use.
2. Activity 2 - Students read news headlines about problems of solid waste in Hong Kong. Then they classify given information into source and impact.
3. Activity 3 - Students apply the 3Rs approach to suggest desirable ways of waste management. They also apply the concept to their daily life experiences.
4. Activity 4 – Students watch EPD website videos to learn more about waste reduction practices.
5. Case Study - In the case study, students read about recent environmental conservation measures carried out by the Hong Kong Housing Authority. Students find out how the measures put into action green lifestyles in housing estates and help raise residents' awareness of environmental conservation.

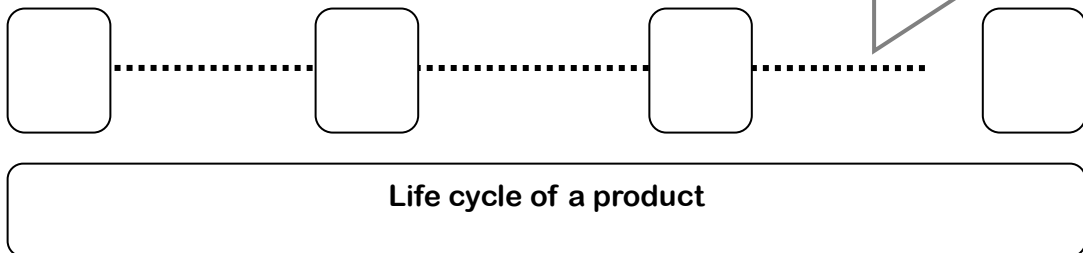
## ✚ How is domestic waste produced

### Activity 1 - Home “resources”

The pictures below show the life cycle of paper, can you match them with appropriate descriptions (a – d) and put them into the right order?

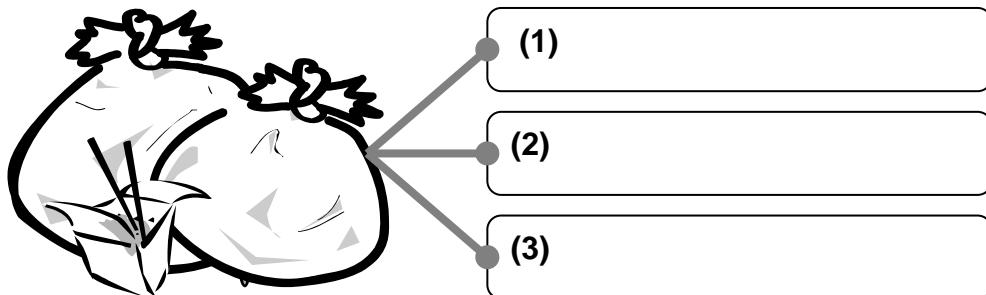


- a. The raw material is processed and manufactured.
- b. Natural resources become the raw material for making paper.
- c. A paper product is produced for consumption.
- d. The used product is disposed of.



Think.....

Suggest 3 ways we treat used products in Hong Kong.



In your opinion, what are the possible impacts of the above disposal methods?

(1) It may .....

(2) It may .....

(3) It may .....

## Why do we need waste management and waste reduction?

### Activity 2

Read the following news headlines about pollution in Hong Kong. Some of them talk about the source of pollution; others talk about the impact of pollution on our living environment. Put ticks (✓) in the table below to show whether the headlines discuss Source or Impact.

#### **Government foresees landfills will soon be full**

*(Ming Pao, December 30, 2006)*

#### **Urge for new incinerator to ease landfill demand**

*(Sing Tao Daily, September 27, 2006)*

#### **Children near landfill sites suffer from asthma**

*(Ming Pao, September 9, 2006)*

#### **Plastic bags tax does not stop market owners**

*(Ming Pao, February 27, 2007)*

#### **CLP claims renewable energy not possible in Hong Kong**

*(Ming Pao, November 6, 2006)*

#### **Students wear sweaters when air-conditioners are on**

*(Sing Tao daily, December 2,*

#### **Over 50% people unaware of printer cartridge recycling procedure**

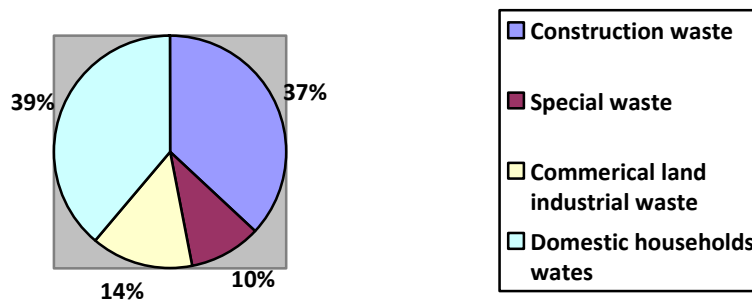
*(Ming Pao, December 02, 2006)*

	source (✓)	impact (✓)
1. "Government foresees landfills will soon be full"		
2. "urge for new incinerator to ease the landfill demand"		
3. "Children near landfill sites suffer from asthma"		
4. "Plastic bags tax does not stop market owners"		
5. "CLP claims renewable energy not possible in Hong Kong"		
6. "Students wear sweaters when air-conditioners are on"		
7. "Over 50% people lack awareness of printer cartridge recycling procedure"		

## Why do we need waste reduction and management in Hong Kong?

The following statistical data from the Environmental Protection Department may have the answers:

Source 1: Types of Solid Waste Disposed of at Landfills in 2005



What are the major sources of waste in Hong Kong?

What can we do to solve the pollution problems caused by the above sources of waste?

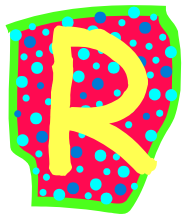
The “Waste Management Model” has recently been promoted in Hong Kong and in various countries.

*(Source: EPD website, Hong Kong's Environment: waste:  
[http://www.epd.gov.hk/epd/english/environmentinhk/waste/waste\\_maincontent.html](http://www.epd.gov.hk/epd/english/environmentinhk/waste/waste_maincontent.html))*

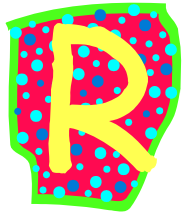
- Waste Management Model**
1. Avoid waste production
  2. Minimize waste production
  3. Reuse/Recycle the material
  4. Waste treatment
  5. Landfill disposal

What are the best methods of waste management?

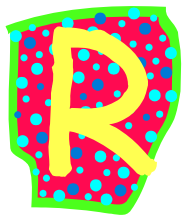
**Activity 3 3Rs approach to “Green lifestyles”**



**reduce**

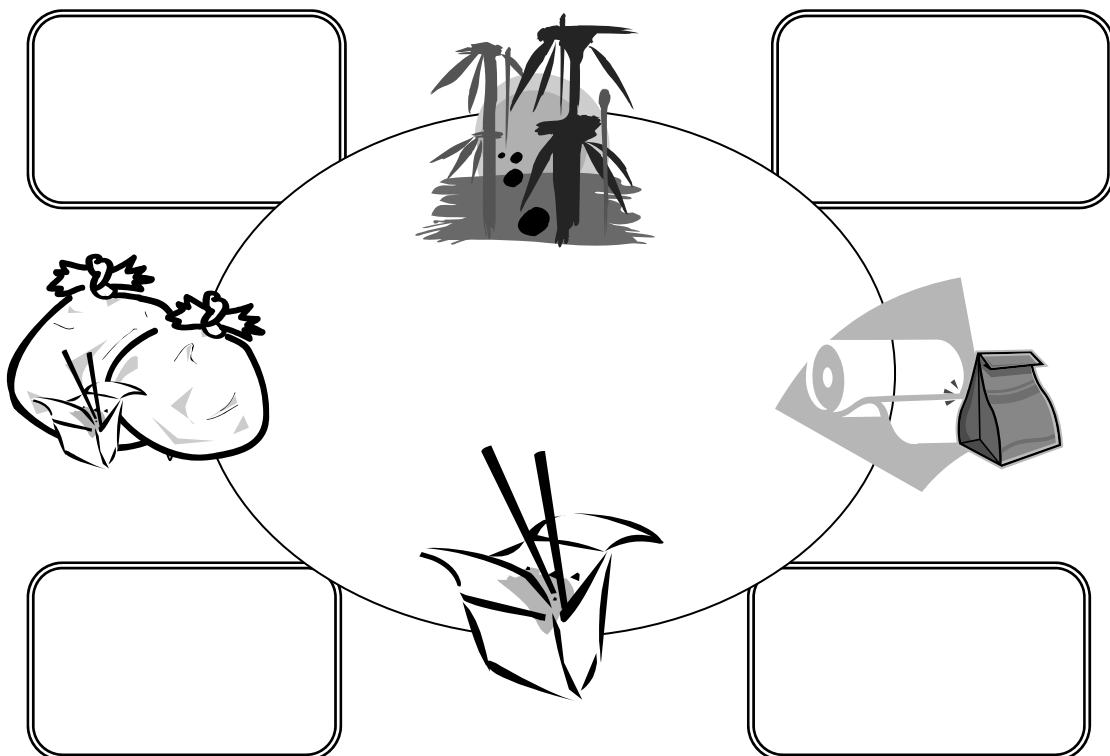


**reuse**

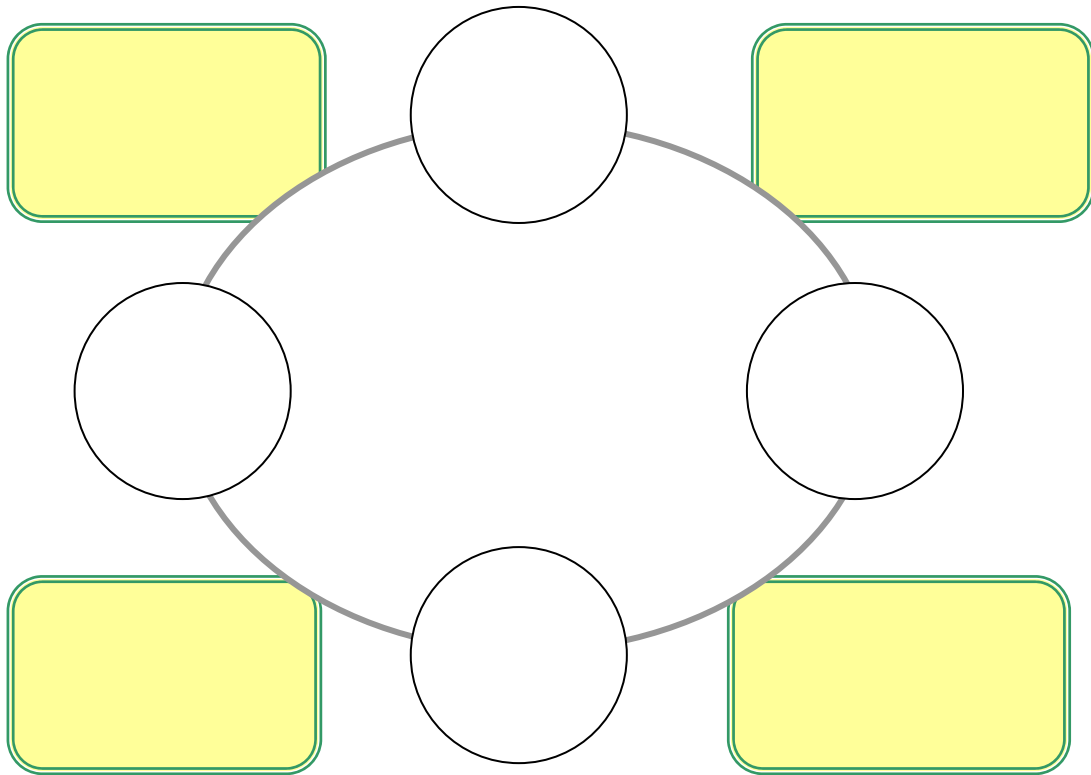


**recycle**

**A. How can we adopt the 3Rs approach to waste treatment and achieve an environmentally friendly life? Based on the 3Rs approach, suggest 4 ways that you can reduce and manage waste in the life cycle of paper. Put your answers in the boxes below.**



**B. Can you give another example, similar to those in Part A, from your own experience of adopting a 3Rs approach to reducing and managing waste?**



## Activity 4

Form action groups and watch the videos to learn more about various waste reduction practices in our daily life: [http://www.isd.gov.hk/eng/tvapi/07\\_ep86.html](http://www.isd.gov.hk/eng/tvapi/07_ep86.html)

[http://www.isd.gov.hk/eng/tvapi/06\\_ep35.html](http://www.isd.gov.hk/eng/tvapi/06_ep35.html)

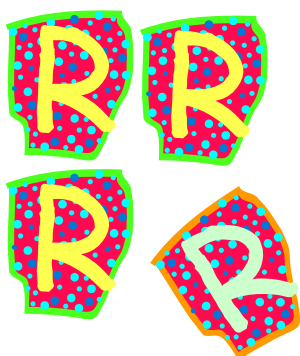
[http://www.isd.gov.hk/eng/tvapi/06\\_ep71.html](http://www.isd.gov.hk/eng/tvapi/06_ep71.html)

[http://www.isd.gov.hk/eng/tvapi/recycle\\_e.html](http://www.isd.gov.hk/eng/tvapi/recycle_e.html)

[http://www.isd.gov.hk/eng/tvapi/06\\_ep75.html](http://www.isd.gov.hk/eng/tvapi/06_ep75.html)

[http://www.isd.gov.hk/eng/tvapi/05\\_ep70.html](http://www.isd.gov.hk/eng/tvapi/05_ep70.html)

### From 3Rs to 4Rs



### Waste management model



The idea of “4Rs approach to waste management” has given us an additional “R”, which urges us to take an active part in improving our living environment:



We all have the responsibility to protect our environment to ensure Hong Kong is a desirable and healthy environment for us and our future generations.

How can we achieve a “Green lifestyle”?

What do you need to do?

Let’s review our daily life practices. How well have we adopted environmentally friendly and responsible ways of living?



## Case Study

**Read the following articles about attempts to introduce green ideas in public housing estates in Hong Kong. Then, complete the diagram on page 10.**

### Article 1 're-source' bottles

It all started with an empty plastic water bottle, which so often ends up being thrown away. This made one person think of a way to make empty bottles last forever. In 2007, in the United States, Anthony Zolezzi wondered 'Is there a way to create an everlasting plastic bottle?' He managed to persuade four companies to help him make that idea a reality.

This led to a new brand of natural spring water from one of the companies - Nestlé, called re-source<sup>®</sup>, which is now on sale in the United States. The 're-source' bottle is made with recycled PET plastic (or Code 1, as shown on the bottom of the bottle) and can be recycled endlessly.

Here's how it works. Consumers take their empty 're-source' bottles to a Tracking Station which is both a rewards programme and a collection system. Customers scan the bottles before depositing them in a recycling container. Then the station prints out coupons which consumers can use at one of the company's Whole Foods Markets.

A pilot programme is now underway at Whole Foods Markets to encourage people to recycle all plastic (not just 're-source' bottles), as well as aluminium and glass containers. For every 're-source' container recycled, Nestlé will donate five cents to a Keep America Beautiful campaign.

### Article 2 recycling cartons







Most people know that both paper and plastic can be recycled. But what about the milk and orange juice cartons in the refrigerated section at the supermarket? The empty cartons are not made entirely of paper and not entirely of plastic, but a combination of both.

There has not been an easy way to recycle them – until recently. A company called Waste Management has recently developed a method of recycling the cartons. They have also introduced a national programme in the United States to enable consumers to recycle milk and orange juice cartons as well as soya milk, chicken stock, and other types of cartons simply by placing them in their recycling bins along with other recyclable products.

This programme is part of the company's quest to make recycling more accessible for consumers across the United States, develop forward-thinking ways to make recycling easier, protect the environment, and improve the quality of life.

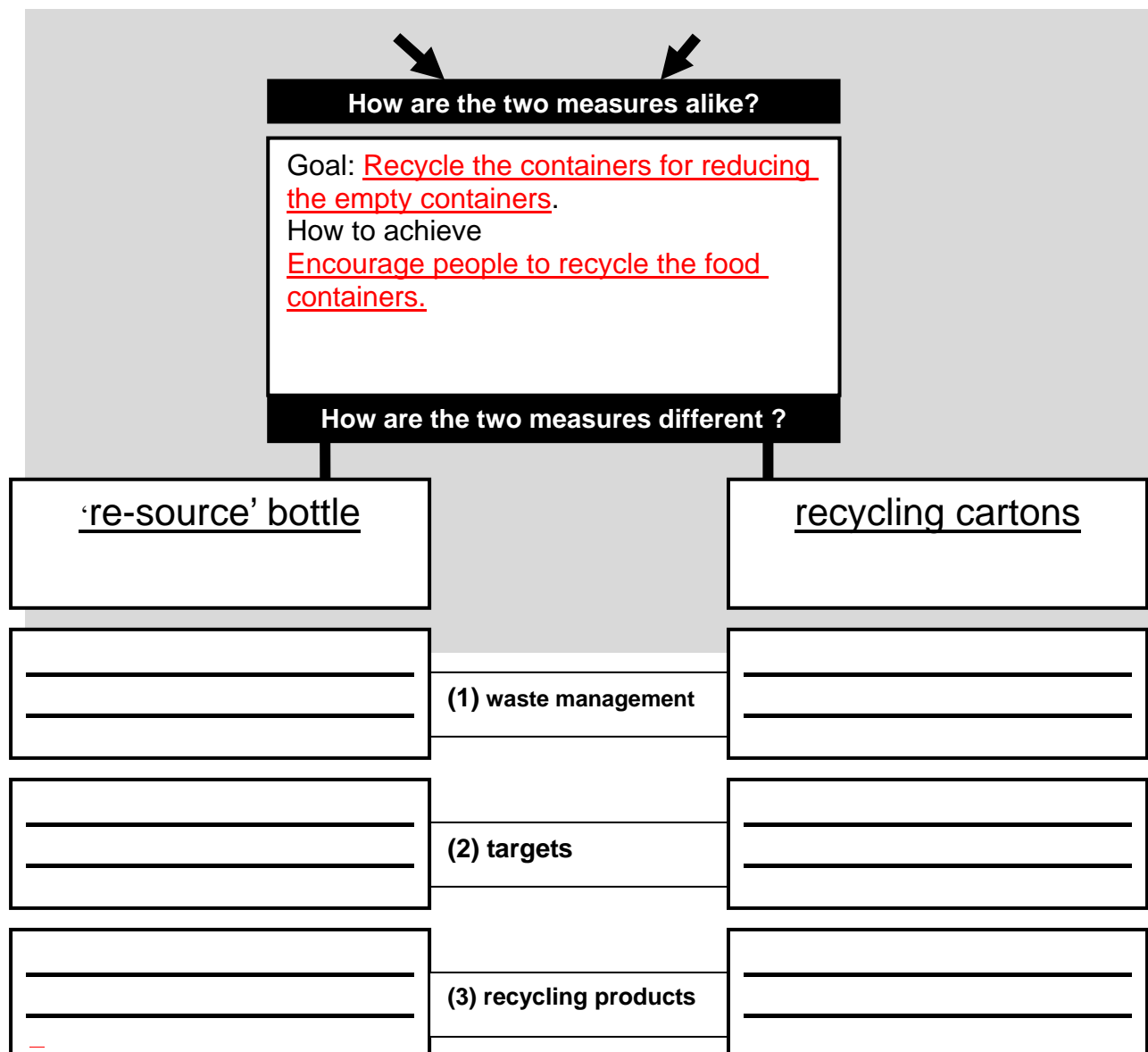
What happens to the cartons after pick-up? They undergo a process known as "hydropulping," which "blends" the cartons so the non-paper and paper layers separate. The recovered paper fibres can be recycled into items such as tissue and paper towels.

Adapted from material at <http://www.thinkgreen.com/helping-the-big-green>

-  **What are their goals?**
-  **How do they achieve environmentally responsible living practices?**
-  **According to the waste management model, how are they different in carrying out the practices?**
-  **Which of them will be more effective in raising awareness of environmentally friendly and responsible life styles**

Article 1

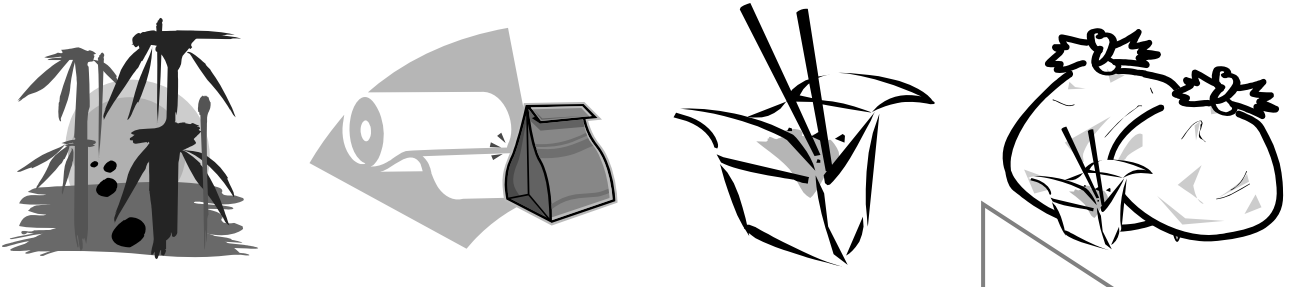
Article 2



# How is domestic waste produced

## Activity 1 - Home "resources"

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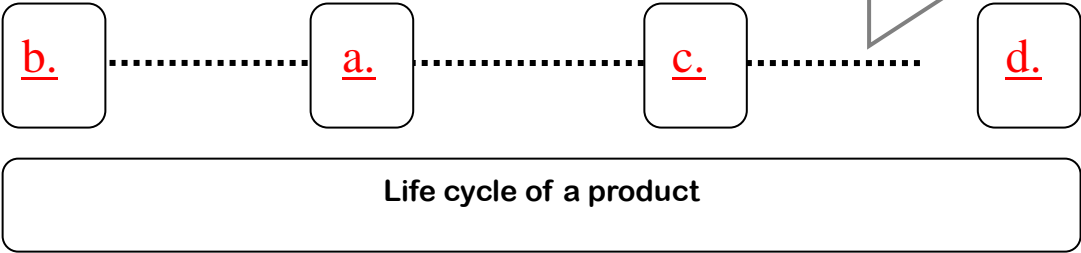



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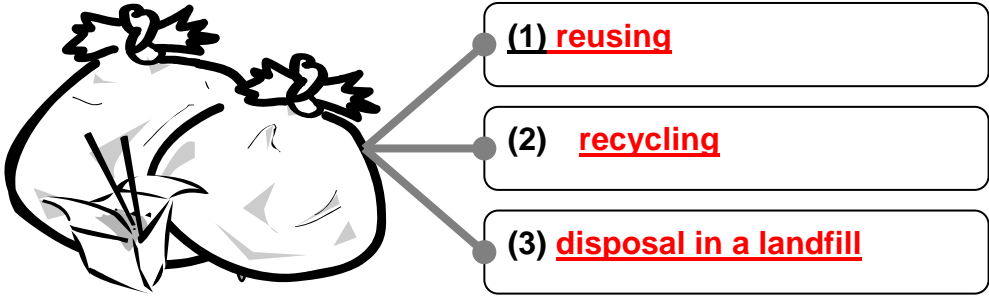
c. A paper product is produced for consumption.

d. The used product is disposed of.



 Think.....

Suggest 3 ways we treat used products in Hong Kong.



- (1) reusing
- (2) recycling
- (3) disposal in a landfill

In your opinion, what are the possible impacts of the above disposal methods?

- (1) It may reduce the amount of waste produced.....
- (2) It may reduce the amount of waste produced.....
- (3) It may cause landfills to become saturated.....

**Why do we need waste management and waste reduction?**

**Activity 2**

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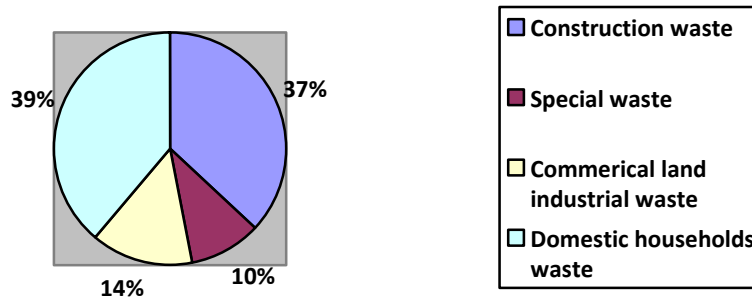
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	source	impact
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Source 1: Types of Solid Waste Disposed of at Landfills in 2005



### What are the major sources of waste in Hong Kong?

Domestic household waste and construction waste are the major sources of waste in Hong Kong.

### What can we do to solve the pollution problems caused by the above sources of waste?

(students' free response)

Individuals can reduce waste by buying items with less packaging, using reusable bags for shopping, and separating waste paper, metals and plastics from their daily waste for recycling. For more tips on environmental protection, please refer to Tips to Save the Earth.

(source: [http://www.epd.gov.hk/epd/english/environmentinhk/waste/waste\\_maincontent.html](http://www.epd.gov.hk/epd/english/environmentinhk/waste/waste_maincontent.html))

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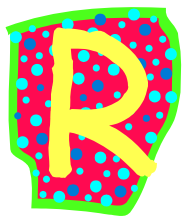
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#### Waste Management Model

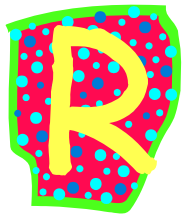
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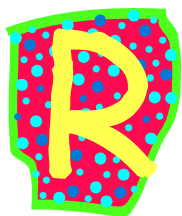
Activity 3 3Rs approach to “Green lifestyles”



reduce

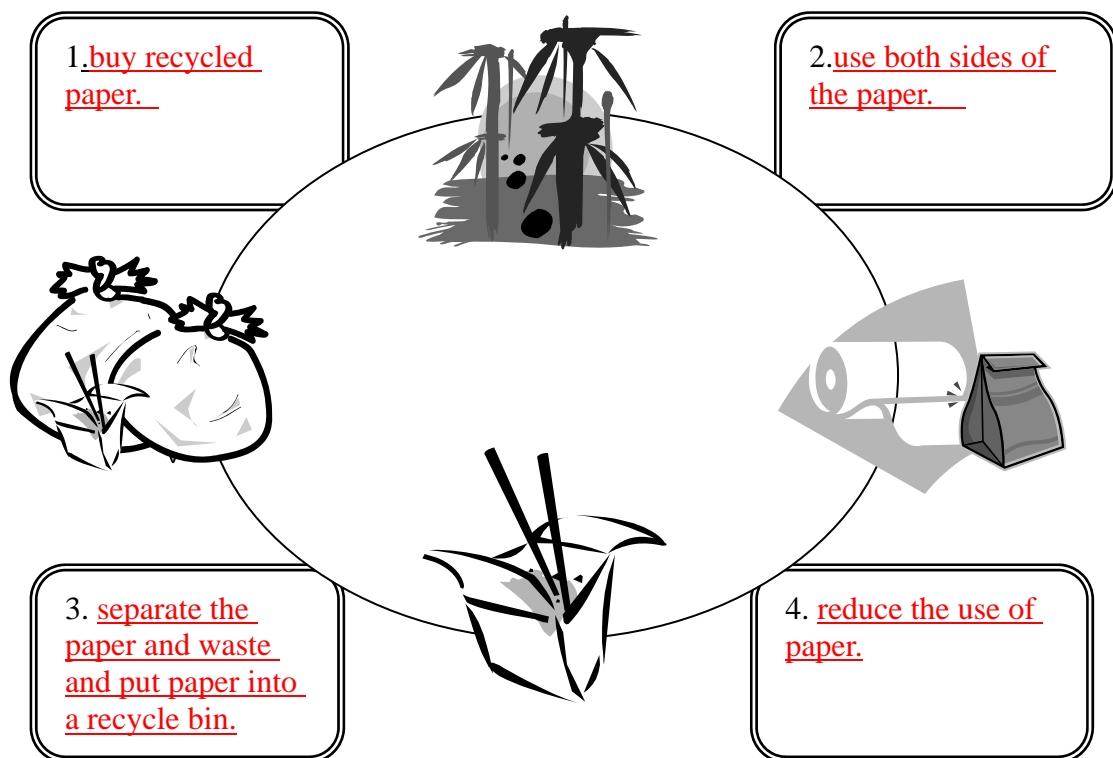


reuse

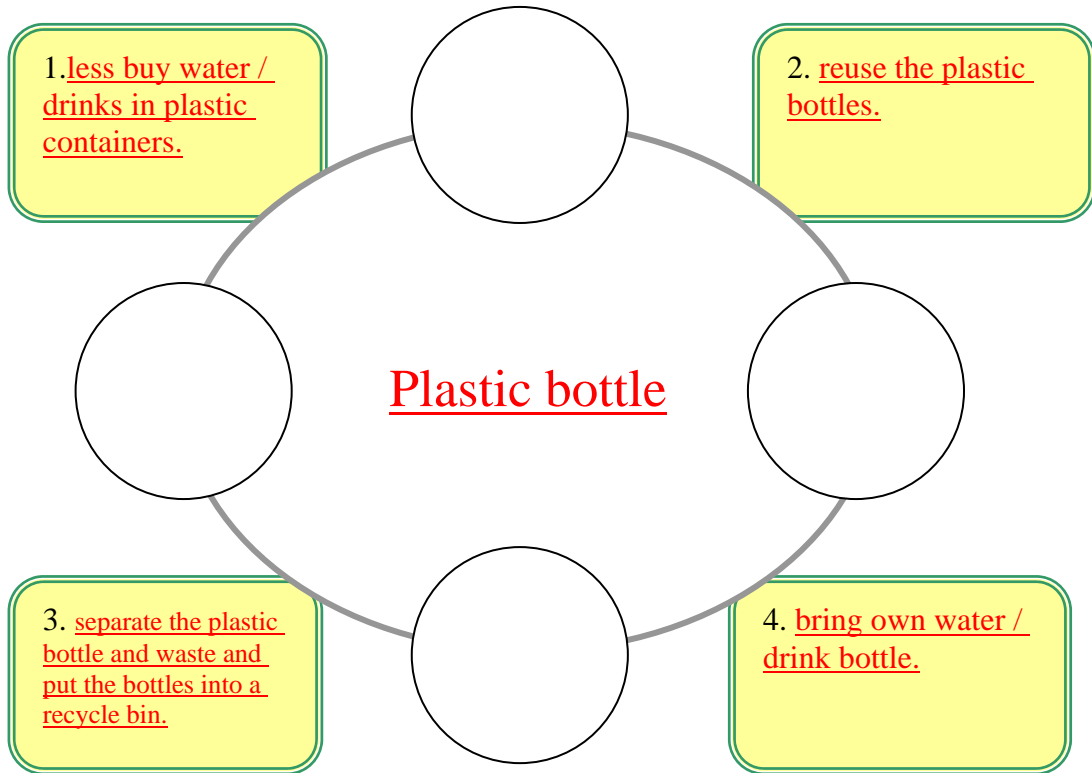


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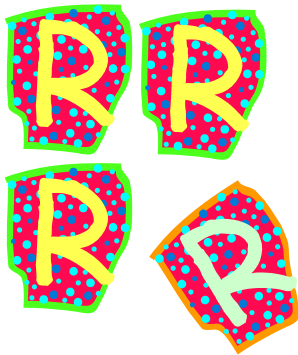
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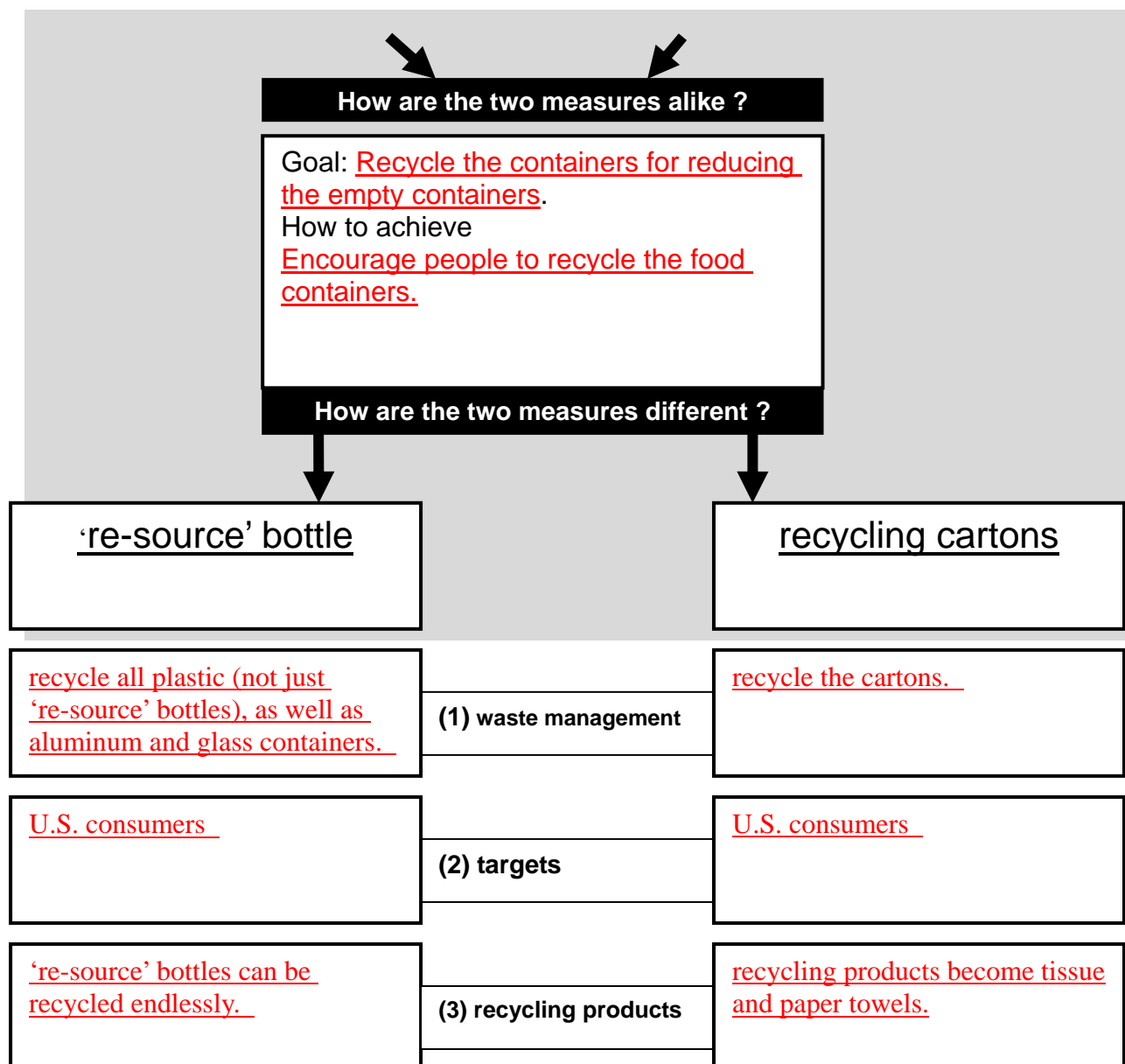
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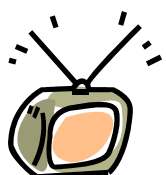


## Reference and Teaching Resources

a. *Environmental Report 2007* (EDB)

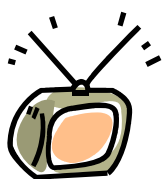
[http://www.epd.gov.hk/epd/english/how\\_help/tools\\_epr/files/edb\\_ER2007e.pdf](http://www.epd.gov.hk/epd/english/how_help/tools_epr/files/edb_ER2007e.pdf)

b. Videos



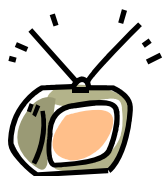
Simple wrapping

[http://www.isd.gov.hk/eng/tvapi/07\\_ep86.html](http://www.isd.gov.hk/eng/tvapi/07_ep86.html)



Care for a greener life, every little bit counts

[http://www.isd.gov.hk/eng/tvapi/06\\_ec35.html](http://www.isd.gov.hk/eng/tvapi/06_ec35.html)



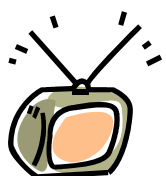
Energy saving

[http://www.isd.gov.hk/eng/tvapi/06\\_ep71.html](http://www.isd.gov.hk/eng/tvapi/06_ep71.html)



Recycling domestic waste

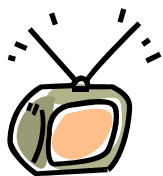
[http://www.isd.gov.hk/eng/tvapi/recycle\\_e.html](http://www.isd.gov.hk/eng/tvapi/recycle_e.html)



Use less plastic shopping bags

[http://www.isd.gov.hk/eng/tvapi/06\\_ep75.html](http://www.isd.gov.hk/eng/tvapi/06_ep75.html)

Source



separation of waste

[http://www.isd.gov.hk/eng/tvapi/05\\_ep70.html](http://www.isd.gov.hk/eng/tvapi/05_ep70.html)

Syllabus Content-Unit 2 Resources

[http://resources.edb.gov.hk/~s1sci/R\\_S1Science/sp/en/teachers/unit2gallery.htm](http://resources.edb.gov.hk/~s1sci/R_S1Science/sp/en/teachers/unit2gallery.htm)

Environmental campaign committee

<http://www.ecc.org.hk/>

EDB: Depository of Curriculum- based Learning and Teaching resources – English Language

[http://www.hkedcity.net/edb/teachingresources/resources.php?site\\_key=eng&categoryId=1048&rid=2112247298](http://www.hkedcity.net/edb/teachingresources/resources.php?site_key=eng&categoryId=1048&rid=2112247298)

Green Peace China

<http://www.greenpeace.org/china/en/>