

# THEME 2

## WASTING AWAY

### TEACHER'S NOTES

#### Introduction

This theme involves pupils in concrete activities where they observe, record and evaluate the amount of waste in their environment. The results of their waste surveys are compiled, displayed, and form the basis for awareness-raising activities in the school and in the locality.

Issues relating to the dangers of careless disposal of waste and the benefits of conservation and recycling are raised with reference to practices in other countries. Finally, the problem of waste as a phenomenon associated with modern living is highlighted when a Stone Age child reflects on the similarities and differences between past and present modes of living.



## WHAT A WASTE

### Activity 1

**Objective:** To help pupils to arrive at their own working definitions of 'waste'.

**Procedure:** Discuss with the class the various ways in which we use the word 'waste' e.g.:

'I'm not going to waste my time'.

'You shouldn't waste your food'.

'That's a waste of energy'.

'I don't want to waste my money on things like that'.

Ask the pupils to put the word 'waste' into sentences of their own.

Divide the class into groups of four or five. Encourage each group to write their own definition of the word 'waste'. Discuss the definitions that

are suggested and elicit that waste can be either an item (e.g., used containers) or an action (e.g., leaving the tap running unnecessarily). Distribute copies of Worksheet 1 which invites the pupils to think about the word 'waste' and the images it suggests to them.



## AG FAIRE AR AN mBRUSCAR

### Activity 2

**Objective:** To draw attention to the amount of waste which we habitually create.

**Procedure:** Encourage the pupils to examine a sample of household waste. Distribute copies of Worksheet 2A which provides a table on which to record the reasons why these items have been thrown away.

Worksheet 2B asks the pupils to categorise the material which has been thrown into the bins at home and at school and to think about ways in which this waste could be re-used or recycled. Encourage the pupils to pin one copy of Worksheet 2B on the wall near the classroom litter-bin and another copy at home where members of the household can tick the appropriate box each time an item of litter is put into the bin.

**Classroom Survey:** Monitor this survey in the classroom over a period of time. Encourage the pupils to try to reduce the amount of waste produced from week to week. The completed bar charts can be used as a basis for discussion and mathematical work such as:

- What form of waste was most often recorded?
- How might we cut down on this type of waste in the classroom?
- On which day was most waste thrown in the bin?
- What factors might have led to this?
- Which items could have been used again? How?

**Home Survey:** Groups of four or five pupils could combine the results of their home survey on a large bar-chart, for display in the classroom. Interesting comparisons may be made between the waste patterns of the home and of the school. Ask each group to compile a list of recommendations which would help to reduce the amount of waste in the house.

Examine some of the items which have been thrown into the bin in your classroom or in the kitchen at home. Why have these things become rubbish? Record your results below.

THROWN AWAY BECAUSE				
Item	Because	Too Small To Use	Unusable	Has Spills Or Punctures

Some things in the rubbish bin can be used again. List these things and suggest how they can be reused. In your Art & Craft class, make some things from waste material and display them in the classroom.



## ME A LITTER LOU? NEVER!

### Activity 3

**Objective:** To help pupils to identify possible reasons for the careless disposal of litter.

**Procedure:** Initiate a discussion about the places to which one is most likely to find litter. Ask the pupils to suggest possible reasons why this might be so – not enough bins available, people tending to consume more packaged goods in this place, people being careless about the issue of waste, etc.

Distribute copies of Worksheet 3 and invite the pupils to complete it in pairs. On completion of this activity, the class discussion might involve the compilation of a list of the most common reasons why people create litter. This list can be aligned with a complementary list of possible means of overcoming these problems, i.e.,

Related questions which might also be discussed include:

- Why do we need packaging?
- Are products over packaged?
- Why might manufacturers spend so much money on packaging?
- What uses can be made of discarded packaging?



Reasons why people create litter	How this can be avoided

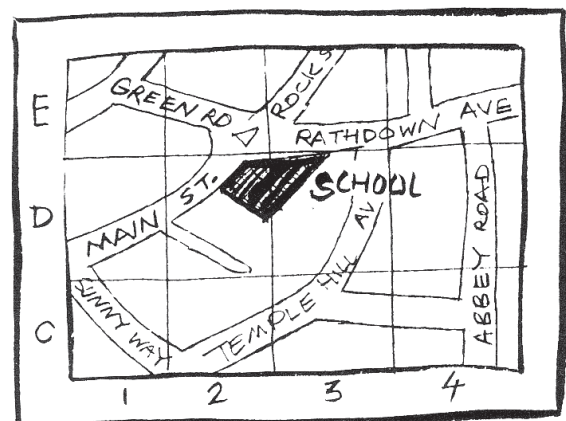
## ON THE MAP

### Activity 4

**Objective:** To involve the pupils in a mapping exercise based on their own locality.

**Procedure:** Work with the class to build up a large plan of the local area. This map can be drawn on the blackboard/whiteboard or on a large sheet of newspaper.

Locate the school in the centre of the map and draw in the surrounding roads or streets. Discuss with the pupils where the surrounding shops, churches, cinemas, parks, etc., are located. Mark them in. Initiate a discussion about the local area. Compile lists of what the pupils like/dislike about their locality. What improvements could they suggest?





## SURVEYING WASTE

### Activity 5

**Objective:** To involve the pupils in collaborative survey work involving a range of social, analytical, linguistic, and creative skills.

**Procedure:** Explain that the class is going to conduct a survey of the local area to find out if it promotes, or helps to prevent, waste.

Divide the class into five groups. Each group will have responsibility for investigating a different aspect of their locality. Distribute copies of Worksheets 5A, 5B, 5C, 5D, or 5E to each group, as appropriate. Read through and discuss the instructions with each group. When the pupils are satisfied that they understand their task, allow them to proceed as directed.

**Note:** This survey can be conducted as an after-school activity, if preferred.

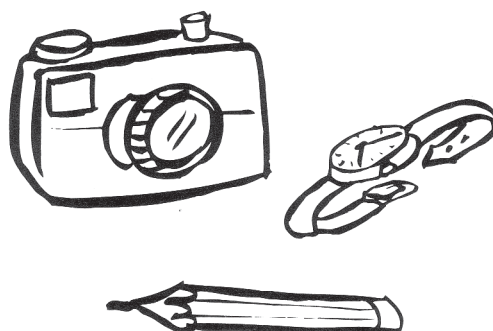
When the data has been collected and analysed, allow the pupils an opportunity to react to what has been found. Discuss the following questions:

- How would they rate their locality in terms of waste control and prevention?
- What are the problem areas?
- How might they help to improve their local

environment?

- Encourage groups of pupils to take responsibility for particular aspects of a waste prevention campaign, e.g.,
- Raising awareness of the problems in the school and locality;
- Adopting a piece of land in the school environs, clearing, planning and maintaining it;
- Initiating an energy saving/recycling campaign in the school.

Mount the findings on charts to form an eye catching display which can be exhibited in the assembly hall. Devise ways of attracting the attention of other teachers, pupils and visitors to the school.



## CÉN AOIS MÉ?

### Activity 6

**Objective:** To illustrate the longevity of certain forms of waste.

**Procedure:** Ask the children if they have ever found an old gas bottle? Where was it found? How old might it have been? What other forms of old waste material have they found? Explain that when archaeologists wish to learn about the lifestyles of people who lived in times past, they often dig to uncover and analyse their discarded waste. This waste is a great source of information about the eating habits, housing, pastimes and culture of

our predecessors. In a thousand years time when archaeologists analyse today's waste, what will they be able to say about our generation?

But how long does waste really last? To help the pupils to ponder on this question, distribute copies of Worksheet 6. Read and explain the instructions. Point out that years which are not marked on the time line can be indicated by marking appropriate intermediate points. Construct a blackboard bar chart of the pupils' answers. What item, did they think, lasts the longest/the shortest? Why?





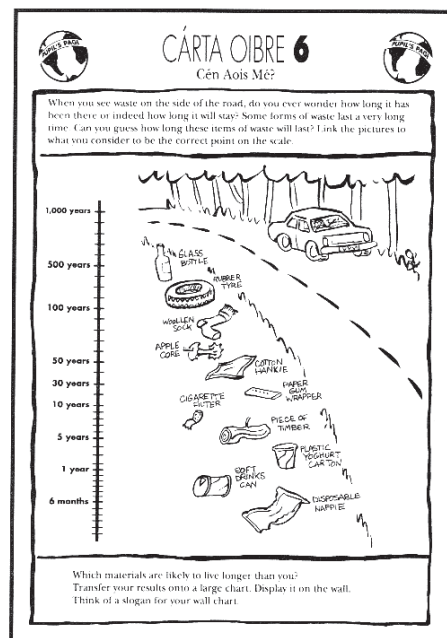
## CÉN AOIS MÉ? (Continued)

Now reveal the statistics below. Discuss with the pupils what they found most/least surprising.

Glass Bottle:	1,000 years
Plastic Yoghurt Carton:	100-1000 years
Aluminium Can:	200-400 years
Rubber Tyre:	50-80 years
Disposable Nappies:	10-20 years
Piece of Timber:	10-15 years
Cigarette Filter:	2-5 years
Woollen Stocking:	1 year
Cotton Hankie:	1-5 months
Apple Core:	3-5 weeks
Paper Wrapper:	2-4 weeks

How many items on the above list could be re-cycled or reused?

What lessons can we learn from such an exercise?



## PLASTIC IS FOREVER

### Activity 7

**Objective:** To highlight the durability of plastic.

**Procedure:** Distribute copies of Worksheet 7, wherein Baggy, the plastic bag, tells its story. Allow the pupils to read the comic strip and colour in the illustrations. Discuss the issues raised by the story.

In the last comic frame, Baggy says: "Soon the world will be wrapped in plastic. Won't that be cosy for us, and for you too!!??" Ask the pupils to suggest what they feel is meant by this. Do they agree with Baggy? Why?

- Ask the pupils to list five advantages and five disadvantages associated with the use of plastic.
- Can they suggest alternatives to plastic for everyday use?





### NOT SO COMICAL

#### Activity 8

**Objective:** To stimulate reflection on the harmful effects of careless disposal of waste.

**Procedure:** Divide the pupils into groups of four or five. Read the following story excerpt.

*It was Spring, the season when the people of Ballydark traditionally brushed away the cobwebs of Winter and prepared their houses for the warmth of Summer. During this seasonal cleaning, all sorts of old things were thrown out of their houses – old mattresses, newspapers, books, jam-jars, curtains and chairs. Some people took care to re-use and recycle those things which they had stored away in the attic.*

*Others couldn't be bothered. They threw their waste in the ditch near the bank of the river. Soon the river was full of all sorts of rubbish – plastic bags, aluminium cans, glass bottles, old tyres, broken toys. Some people even dumped oil and chemicals into the river, thinking that the river would wash all the poisonous waste away. Then one day, something terrible happened...*

Invite each group to draw a cartoon strip on a large sheet of paper to illustrate how waste which was carelessly disposed of caused harm to living things and to the environment. Allow time for discussion where members of each group decide on the particular event which they wish to highlight in cartoon form. Once completed, the work of each

group is discussed and displayed.

Make specific reference to the dangers associated with dumping poisonous waste in places where it can contaminate natural food-chains. Invite the pupils to draw some river food-chains and to highlight how poisonous waste is passed through the chains from one species to another.

Working in pairs, where one pupil acts as interviewer and the other as interviewee, ask the pupils to imagine that they have been invited to speak on radio about the ways in which waste can be harmful to living things and to the environment. Explain that each pair must work together to compile the questions and the answers to ensure that their broadcast will convince the listeners of the need to take more care to reduce the amount of waste which they produce and to dispose more carefully of waste which cannot be re-used or recycled.



### NATURE'S RECYCLERS

#### Activity 9

**Objective:** To highlight the manner in which nature recycles her waste material.

**Procedure:** Initiate a discussion about what happens to the waste material that is produced by nature – petals, leaves, twigs, branches, etc.

Elicit that more has an army of creatures which work to change nature's waste into a material called 'compost' which feeds the soil and helps new plants to grow. Explain that these creatures are called 'decomposers'. Invite the pupils to name some decomposers.

Divide the children into groups of three. Provide each group with a jam-jar, a muslin cloth and an



## NATURE'S RECYCLERS (Continued)

elastic band. Each group is given the task of finding, in the area of the school, four pieces of nature's waste to put in the jam-jar. Ask the pupils to try to select pieces which contain decomposers.

Once found, ask the pupils to place the items in the jam-jar, cover it with the muslin cloth and secure the cloth with the elastic band. Back in the classroom, invite each group to study the contents of their jam-jar. In their exercise books ask them to:

- Draw a sketch of the creatures which they have found;
- Describe where they found them;
- Describe what they look like – colour, size, texture of body, number of legs, size of eyes, etc.
- List the kinds of material which were being eaten by them.

When this activity has been completed, ensure that the creatures are returned unharmed to where they were found.



## THE THREE Rs, REPAIR, RE-USE AND RECYCLE

### Activity 10

**Objective:** To illustrate ways in which the amount of waste which we produce can be reduced. To highlight the benefits which derive from such activity.

**Procedure:** Most of the material which we call waste can be used again or recycled.

1. Ask the pupils, using protective gloves, to collect a bag of rubbish from the school environs.
2. Spread some sheets of old newspaper on the classroom floor.
3. Empty the contents of the rubbish bag in the centre of the floor
4. Ask the pupils, still using rubber gloves, to sort the rubbish into sets of similar materials.

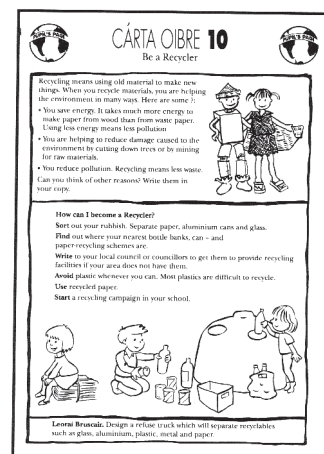
Discuss the following questions with the pupils:

- Which items can be reused for either their original or for a new purpose?
- Which items can be repaired?

- Which items can be recycled?
- What do you notice?

Divide the pupils into groups of two. Distribute copies of Worksheet 10. Encourage the pupils to work together to complete this worksheet.

Teacher's Resource Sheet (Activity 10) describes how to recycle paper. Try it with the class. Who knows, it might mark the beginning of a new business venture!





## LESSONS FROM OTHER COUNTRIES

### Activity 11

**Objective:** To provide opportunities for the exploration of alternative uses of waste in developing countries.

**Procedure:** Divide the class into groups of four or five. Each group needs a copy of Worksheet 11A, 11B or 11C. Allow time for the pupils to read the stories on waste and recycling in developing countries and to complete the activities.

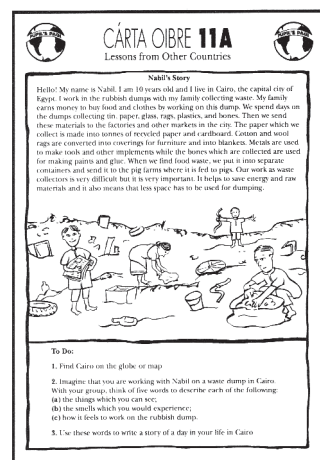
Ask each group to share with the rest of the class what they have learned in their story. Invite questions from other members of the class.

Discuss with the pupils such issues as the hardship attached to working on the dump at such an early age. These may include:

- What dangers would be associated with such

work?

- What are the benefits to the child and to society which derive from this kind of recycling activity?
- What are the disadvantages to the child which are associated with such work?
- Ask the pupils to list all the waste material they can find in the class. How many different ways can the class devise for reusing this material?



## THE GREEN SCENE

### Activity 12

**Objective:** To compare the lifestyles of two children who live in different parts of the world in terms of their effects on the environment.

**Procedure:** Divide the class into groups of 3. Distribute one copy of Worksheet 12 to each group. Explain that the activity card which they have received invites them to become adjudicators in the Green Scene Competition, a competition which is held each week to discover the most environmentally friendly contestant.

Explain that the competition this week is between two children, Paul who lives in Northern Ireland and Lucu who lives in the Amazonian rainforest. Once the pupils have found where Lucu lives, they may commence the activity. When the activity has been completed, ask the groups to declare the winner of the competition.

How many points did Paul receive? Why?

How many points did Lucu receive? Why?  
In what ways was Paul's lifestyle damaging to the environment?  
How could Paul improve his lifestyle?

Compile a blackboard list of the suggestions which the pupils have made to improve Paul's relationship with the environment. How might this list apply to our own lives?





## ENERGY USE THROUGHOUT THE WORLD

### Activity 13

**Objective:** To alert the pupils to the unequal distribution of energy and resources between North and South.\*

**Procedure:** Ask the pupils to imagine that the entire population of the world is represented by just 100 people. These people are scattered throughout the world in the same proportions as the population of the world today. Ask the pupils to write down individually the percentage of people they think live in

Africa	Australia and New Zealand
Asia	North America
Europe	South America

After this, divide the class into pairs. Distribute one copy of Worksheet 13 to each pair. Explain that the correct answers can be found by counting the number of people that are represented on the map of the world given in this worksheet.

Involve the pupils in a brainstorm where they list all the words and images which the word 'energy' suggests to them. Elicit that it can have such meanings as electricity, coal, oil, gas, petrol, etc.

Ask the pupils to imagine that all the energy in the world is represented by 100 light bulbs (i.e., each light bulb represents 1% of the world's energy). In their groups, encourage the pupils to guess what percentage of the world's energy is used by Africa, Asia, Europe, Australia and New Zealand, North America and South America. Compare the group's suggestions with the actual distribution of energy below:

Africa	3	Australia & New Zealand	1
Asia	18	North America	28
Europe	45	South America	5

Ask the pupils to copy the population map of the world provided on Worksheet 13 on to a large sheet of strong paper and to distribute 100 cut out 'light bulbs' to the people of the world according

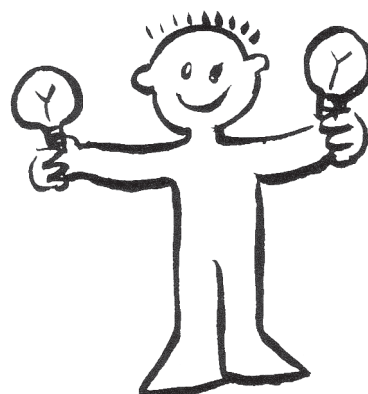
to the statistics given above. The distribution of energy throughout the world can be highlighted by placing the appropriate number of 'light bulbs' in the hands of people from different countries.

If there are more light bulbs than people in some areas, then some people receive more than one. If there are fewer light bulbs than people in others, then some people go without.

When each group has completed this activity and displayed its work, discuss the following questions with the entire class:

- Where do most of the people of the world live?
- Which continent uses the greatest amount of energy per head of population?
- Which continent uses the least percentage of energy per head of population?
- Why, do you think, is this the case?
- Is this a fair distribution of the world's energy resources? Why?

**Footnote:** The terms North and South are used to refer to the world's richer and poorer countries respectively. Countries in the rich North are those in North America, Europe, the Commonwealth of Independent States (i.e., the former Soviet Union minus the Baltic Republics), Japan, Australia and New Zealand. Countries in the poorer South comprise most of Asia, Africa, and South America.







## EQUAL SHARES?

### Activity 14

**Objective:** To raise issues relating to the distribution of global resources throughout the world.

**Procedure:** Explore the imbalances inherent in the distributions outlined in Teacher's Resource Sheet (Activity 14) through discussion and dramatisation of each set of statistics, viz:

**Use of Trees:** Compare and contrast the use and possible wastage of timber and timber products as outlined in the statistics provided.

- Using waste paper, assign the cutting out of some 100 paper trees to a group in the class.
- Dramatise the imbalance in resource distribution using a volunteer from the class to represent a typical 'Canadian' and a typical 'Indian'.
- Question the class on the effect which even a slight change in behaviour by the 'Canadian' would have on the distribution of timber resources.
- Elicit through questioning what such a change in behaviour might be (less consumption; more recycling; rejection of over-packaged goods; etc.).
- Dramatise the effect which a change of 25% and 50% would have using further 'representatives' from India who can benefit from the distribution of the trees which the 'Canadian' has saved by changing his/her behaviour.

For each of the other sets of statistics divide the class into groups, giving one set to each group, and ask the pupils to represent the imbalances diagrammatically with appropriate symbols for each (e.g., cut-out light bulbs for energy).

Collate the results in chart form and explore the dramatic effects which can be brought about by relatively minor changes in the behaviour of those who are over-consuming the Earth's resources.

Invite representatives from each group to explain their chart and to outline the proposed behavioural changes which could lead to a more equitable distribution of resources.

A person in Canada uses 100 times more trees than a person in India – and recycles less.



## WASTE: PAST AND PRESENT

### Activity 15

**Objective:** To alert pupils to the differences in lifestyle between people of the Stone Age and the people of today. To illustrate that industrial development has increased the levels of waste and pollution in the world.

**Procedure:** As an introduction to this activity, explore with the class the ways in which our pollution affects the lives of other living things, in the school, home, locality, country, and on the Planet as a whole.

Discuss these questions with the pupils.

Did our grandparents pollute the environment as much as we do?

Where did they dump their waste material?

What kinds of waste did they have?

What fuels did they burn?

Did they use chemicals which polluted the soil or water?

Did they have the same noise levels as we have?

In order to explore the historical dimension of waste and pollution, introduce the pupils to a Stone Age boy called Borus, using the story on Worksheet 15A. The questions provided at the



## WASTE: PAST AND PRESENT (Continued)

end of the story suggest possibilities for exploration.

Using Worksheet 15B, encourage the pupils to identify those elements in the picture which would be incongruous with Stone Age life.



## STONE CRAZY

### Activity 16

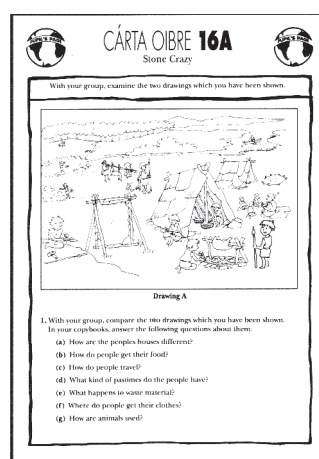
**Objective:** To allow the pupils to compare life in the past with our lifestyle today, with specific reference to the adverse environmental effects of our present-day lifestyle today, with specific reference to the adverse environmental effects of our present-day lifestyle.

**Procedure:** Distribute copies of Worksheets 16A and 16B, which show a typical scene from Borus's village and a typical scene from a present day urban setting. Discuss each scene in turn. Recall that, by magic, Borus was sent from the stone age today and that he found many changes.

Working in groups of 4-5, ask the pupils to colour in the drawings. The questions challenge the pupils to compare and contrast the two lifestyles in

terms of housing, food, travel, disposal of waste, and use of the environment.

**Note:** The reverse side of the posters contain a range of suggested activities to further explore the issues which were raised.



## WASTE - THE HIDDEN TREASURE

### Activity 17

**Objective:** To promote a recycling mentality by emphasising the value of waste material.

**Procedure:** Read the story on Teachers' Resource Sheet (Activity 17) entitled 'The Rubbish Family and their Wonderful Treasure', and discuss with the pupils how Donald came to look upon rubbish as a hidden treasure.

Based on the lessons which The Rubbish Family has taught them, invite the children to draw up a set of resolutions which outline how they pledge to act more responsibly towards the environment.

These might then be displayed prominently in the classroom.







## REFLECTIONS

### Activity 18

**Objective:** To promote discussion and reflection on the central issues explored in this theme through a variety of activities.

#### Procedure:

##### 1. Poster Making

Ask the pupils to design a poster in relation to the activity in this theme which they enjoyed most. Encourage the pupils to compose a slogan for the poster and then to display the finished product in a prominent place in the school.

##### 2. Letter Writing

Ask groups of pupils to:

Write a letter to a factory to complain about over-packaging.

Write a letter to a local industry to find out how waste from the factory is treated and what steps the factory is taking to protect the environment. Write a letter to the local District Council to enquire about water/sewage treatment works in the area.

Write a letter to the Minister for the Environment highlighting the unequal distribution and consumption of the Earth's resources between the countries of the North and of the South and suggesting that the government instigate a nationwide conservation campaign.

##### 3. Declaration on the Environment

Ask the pupils to write a Declaration on the Environment, setting out ten reasons why they think that we should take better care of our world. Try to get it published in the local newspaper, or discussed on local radio.

##### 4. Crafty Ideas

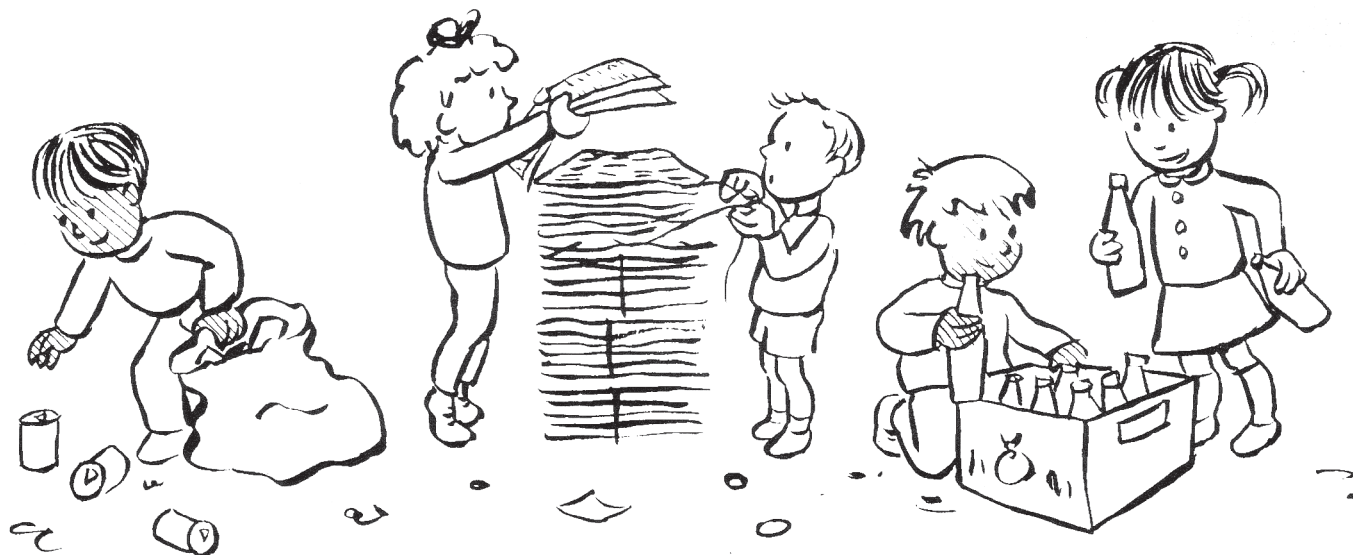
Ask the pupils to start collecting waste material and to use this material to make interesting items for display in the classroom.

##### 5. Bubble in Trouble

Provide the pupils with balloons which represents the globe. Ask the pupils to write their wishes for the future of the world on these balloons and to display them in the classroom.

##### 6. Paper Doesn't Grow on Trees!

Ask the pupils to suggest ways in which they might recycle paper in their classroom. Encourage them to use both sides of pages in their copies and to buy recycled material whenever possible. Have a separate box in the classroom for waste paper which could be used for Art and Craft activities.



**THEME 2**  
**WASTING AWAY**  
**RESOURCE SHEETS**

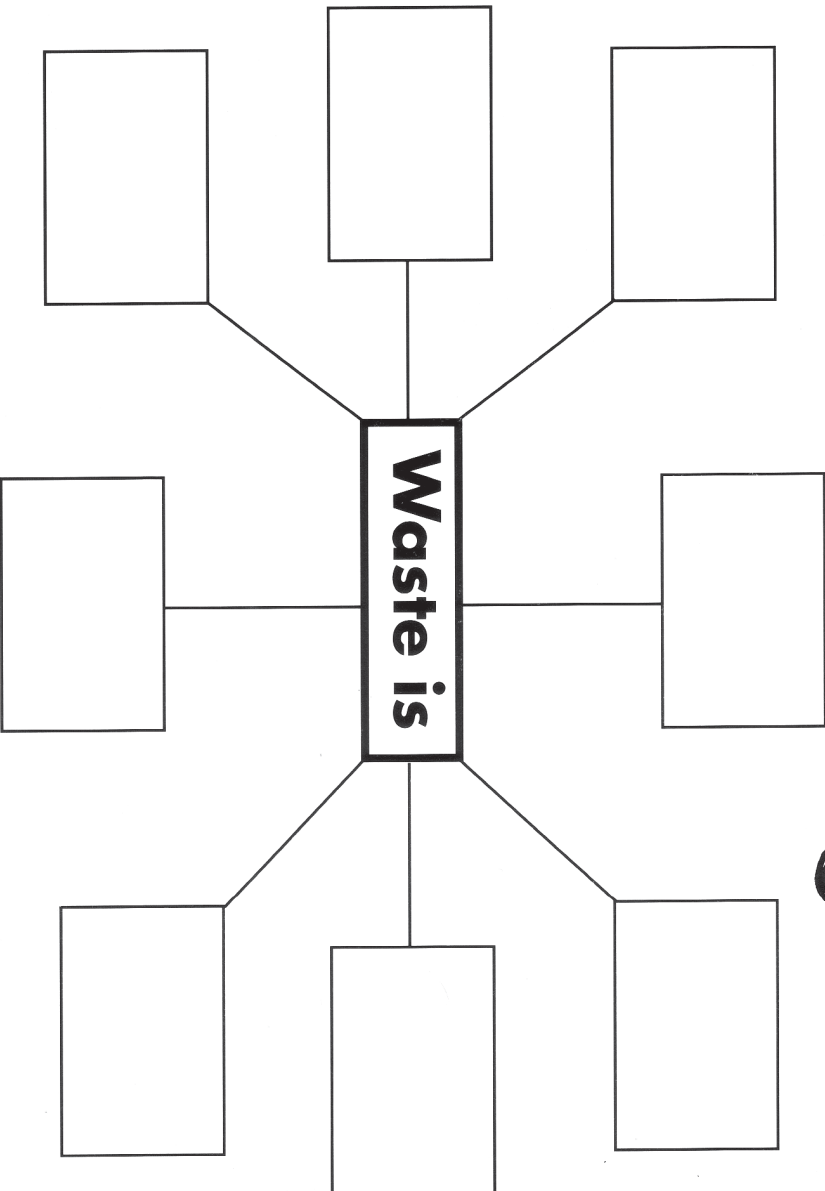


## What a Waste!

## Waste is:

## What does it mean to you?

A black and white cartoon illustration. In the center, a boy is pushing a three-wheeled trolley. The trolley has a sign on its side that reads 'RUBBISH TROLLEY'. The boy is wearing a striped shirt and trousers. Behind him, a girl is sweeping the ground with a broom. She has a large, bushy head of hair. The scene is set outdoors on a paved surface.

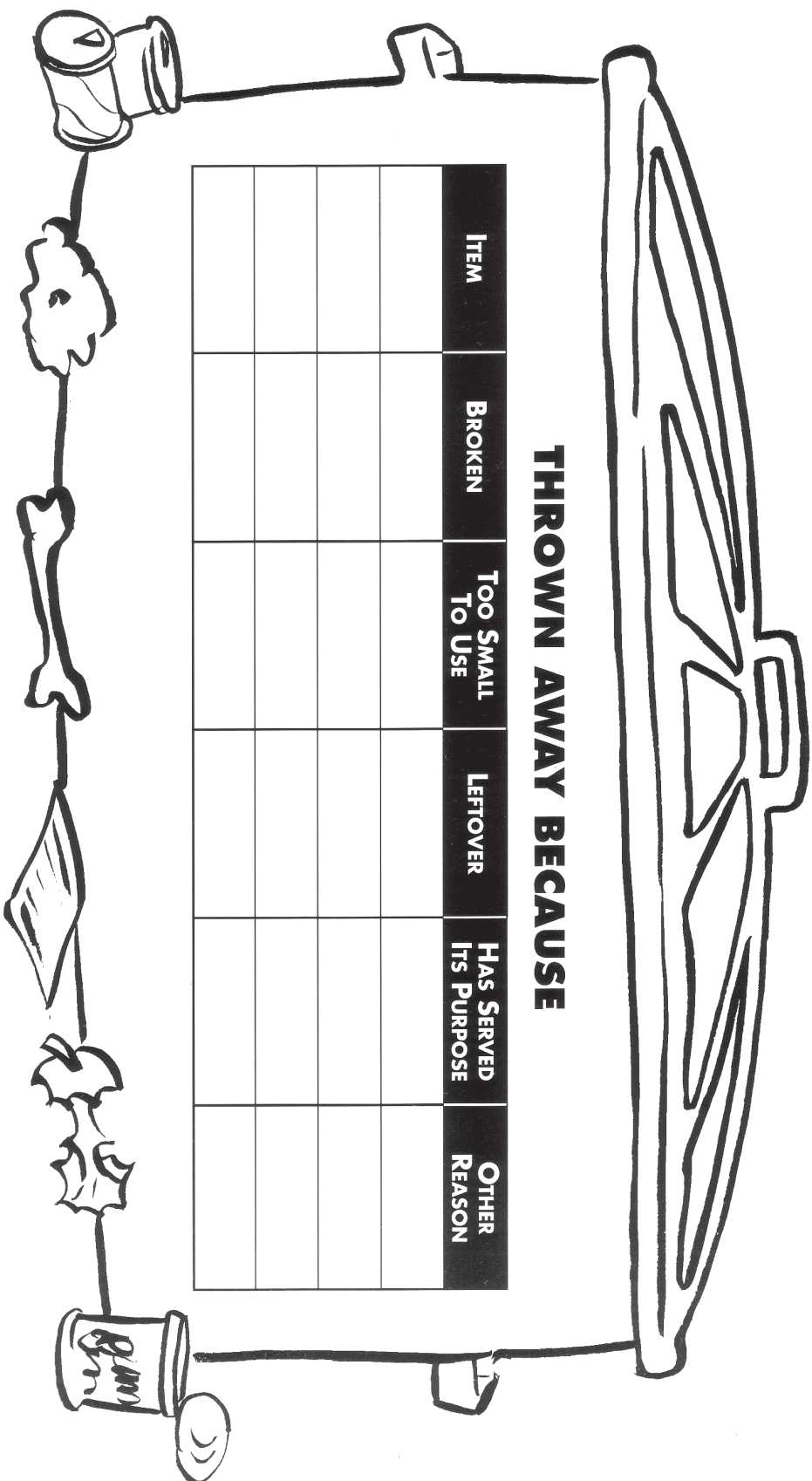




Examine some the items which have been thrown into the bin in your classroom or in the kitchen at home. Why have these things become rubbish? Record your results below.

### THROWN AWAY BECAUSE

ITEM	BROKEN	TOO SMALL TO USE	LEFTOVER	HAS SERVED ITS PURPOSE	OTHER REASON



Some things in the rubbish bin can be used again. List these things and suggest how they can be reused. In your Art & Craft class, make some things from waste material and display them in the classroom.



**How much waste does your class create each day? Display this survey sheet beside the waste bin in your classroom and find out. Each time an item of waste is placed in the bin, a tick must be placed in the appropriate box. At the end of the week, count all the ticks and answer the questions below.**

DAY	METAL	PLASTIC	GLASS	PAPER OR CARD	ORGANIC MATTER	OTHER ITEMS
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						

1. Which category accounts for the most space?
2. On which day was the most material placed in the bin? Why?
3. How many of the items in the bin could be used again?
4. List the items which cannot be used again? Why?
5. Can you think of three reasons why we should try to re-use old material?
6. How could you reduce the amount of waste produced each day?
7. Which items of waste would be easiest to reduce? Which categories would be the most difficult to reduce? Give reasons for your answers.



Try to think of new uses for some of the items which have been dumped.

**Repeat this survey each week. See if you can reduce the amount of waste that you produce!**



Try to guess the types of litter that are dropped by these people.



	TYPE OF WASTE	WHY WAS IT DROPPED?
CHILDREN IN A PLAY- GROUND		
PEOPLE IN A BUS		
CYCLISTS		
MOTORISTS		
PEOPLE ON THE BEACH		
SHOPPERS		



Draw a picture of your school and playground before and after litter louts have visited.

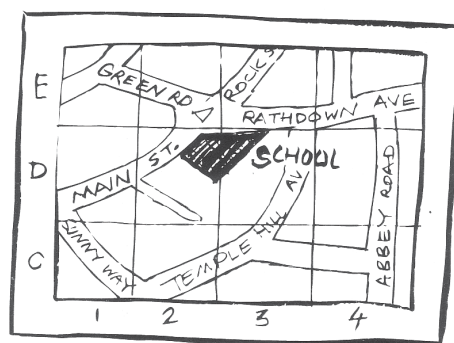


Draw a map of your locality. Choose a small area to survey. Now follow your map to the area you have chosen. On your map, mark in each litter bin in the area with the letter 'A', 'B', 'C', 'D', etc. Now fill in the following chart.

You will need a pencil and a camera.



BIN	LOCATION	EASY TO SEE?	FULL OR EMPTY?	LITTER ON GROUND	TIDY OR UNTIDY?
A	Outside supermarket	Yes	Half Full	Yes	Untidy. Crisp and ice-cream papers on pavement
B					
C					
D					
E					
F					
G					



Draw, or take a photograph, of the bins which you think are tidiest/untidiest. Design a bin that would encourage people to put their waste in it.





**Draw a map of your locality. Choose a small area to survey. Now follow your map to the area you have chosen. With your teacher's permission, interview three of the shopkeepers in the area. Here are some questions that you can ask:**

**You will need a pencil and a camera.**



**Do you think that there are enough bins in this area?**

Shopkeeper A: \_\_\_\_\_

Shopkeeper B: \_\_\_\_\_

Shopkeeper C: \_\_\_\_\_

**How often are they emptied? Is this often enough?**

Shopkeeper A: \_\_\_\_\_

Shopkeeper B: \_\_\_\_\_

Shopkeeper C: \_\_\_\_\_

**Who throws most litter on the street?**

Shopkeeper A: \_\_\_\_\_

Shopkeeper B: \_\_\_\_\_

Shopkeeper C: \_\_\_\_\_

**In what way can school children help improve the litter situation?**



Shopkeeper A: \_\_\_\_\_

\_\_\_\_\_

Shopkeeper B: \_\_\_\_\_

\_\_\_\_\_

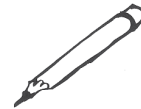
Shopkeeper C: \_\_\_\_\_

\_\_\_\_\_



Draw a map of your locality. Choose an area to survey. This should be a place which attracts a lot of people like a park, a busy street, outside a cinema or shop, etc. Now follow your map to the place you have chosen. Your group will spend half an hour surveying the kinds of people who throw litter. The following chart will help you to record your findings.

You will need a pencil and a watch.



	MAN, WOMAN, CHILD	TYPE OF WASTE	POSSIBLE REASONS	TIME
Person 1	Woman	Sweet Wrapper	In a hurry	11.15am
Person 2				
Person 3				
Person 4				
Person 5				
Person 6				
Person 7				
Person 8				
Person 9				
Person 10				



Draw a bar chart to show who throws the most rubbish on the street.



Look around the school yard or at home and try to find three pieces of litter made from different materials. Bring them back to class. Find out about the things you have collected by thinking about and answering the following questions:

	ITEM A	ITEM B	ITEM C
Name of Item			
Where was it found?			
What was it made from?			
How long would it last on the ground?			
What could harm it? How?			
Were many of these items thrown away? Why?			
Could it have been used again?			
Suggest other uses for this item			





## Suirbhé Tráichta

## Walking

## Cycling

## In a car

## In a bus

## In a lorry

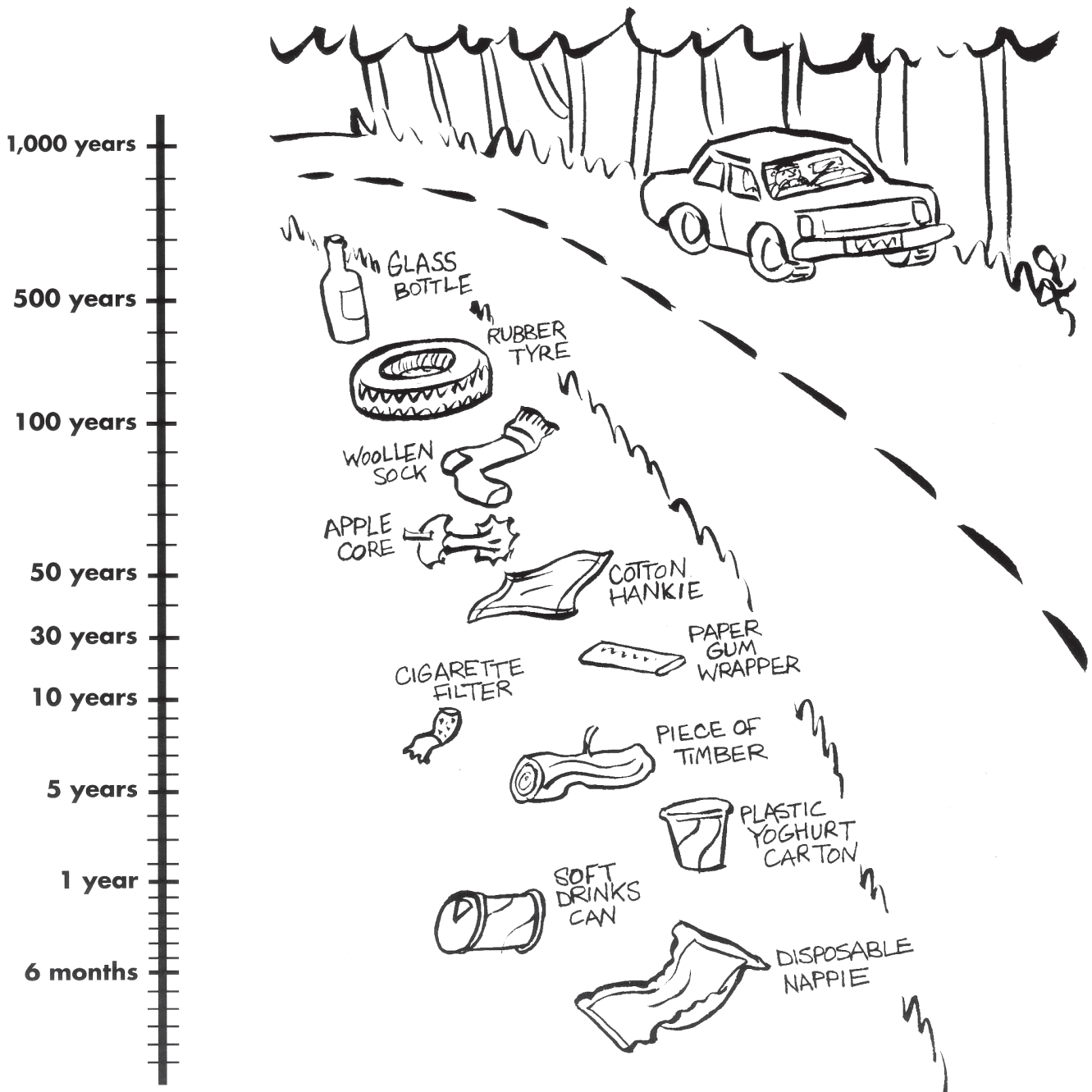
## In a van

- 

22



When you see waste on the side of the road, do you ever wonder how long it has been there, or indeed, how long it will stay? Some forms of waste last a very long time. Can you guess how long these items of waste will last? Link the pictures to what you consider to be the correct point on the scale.



Which materials are likely to live longer than you? Transfer your results onto a large chart. Display it on the wall. Think of a slogan for your will chart.







## Be a Recycler

Recycling means using old material to make new things. When you recycle materials, you are helping the environment in many ways. Here are some:

- You save energy. It takes much more energy to make paper from wood than from waste paper. Using less energy means less pollution.
- You are helping to reduce damage caused to the environment by cutting down trees or by mining for raw materials.
- You reduce pollution. Recycling means less waste.

Can you think of other reasons? Write them in your exercise book.



### How can I become a Recycler?

**Sort** out your rubbish. Separate paper, aluminium cans and glass.

**Find** out where your nearest bottle banks, tin can and paper-recycling schemes are.

**Write** to your local council or councillors to get them to provide recycling facilities if your area does not have them.

**Avoid** plastic whenever you can. Most plastics are difficult to recycle.

**Use** recycled paper.

**Start** a recycling campaign in your school.



**Bin Lorry.** Design a refuse truck which will separate recyclables such as glass, aluminium, plastic, metal and paper.





## GNÍOMHAÍOCHT 10

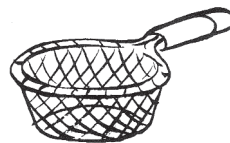
Recycling paper is really easy. Try it in class. You will need:



A large bowl



A saucepan



A flat-bottomed sieve



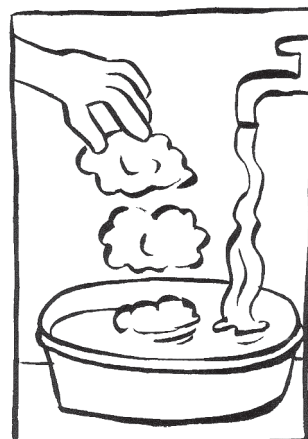
Old newspapers



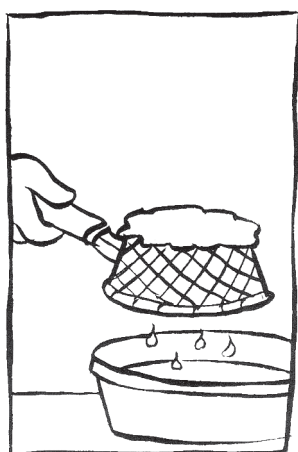
1. Shred the paper into small pieces and put them into a saucepan. Half-fill the saucepan with water. Leave the paper to soak overnight.



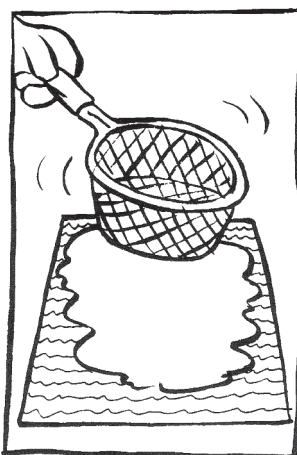
2. If all of the water has been soaked up, add some more. Mash the paper with a fork until it becomes a mushy pulp.



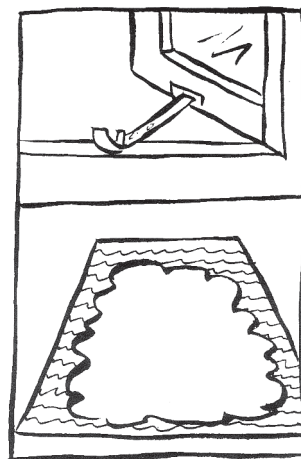
3. Half-fill the bowl with water and add two handfuls of paper pulp. Stir the mixture well. Put a damp cloth beside the bowl.



4. Scoop the flat-part of the sieve under the water and bring it to the surface. Turn the sieve upside down and hold it above the water until most of the water has drained away.



5. Turn the sieve again so as to place the pulp in contact with the damp cloth. Rock the sieve gently back and forth until the paper pulp peels away.



6. Spread the pulp as thinly and evenly as possible over the cloth. Leave it in an airy place to dry.



### Nabil's Story

Hello! My name is Nabil. I am 10 years old and I live in Cairo, the capital city of Egypt. I work in the rubbish dumps with my family collecting waste. My family earns money to buy food and clothes by working on this dump. We spend days on the dumps collecting tin, paper, glass, rags, plastics, and bones. Then we send these materials to the factories and other markets in the city. The paper which we collect is made into tonnes of recycled paper and cardboard. Cotton and wool rags are converted into coverings for furniture and into blankets. Metals are used to make tools and other implements while the bones which are collected are used for making paints and glue. When we find food waste, we put it into separate containers and send it to the pig farms where it is fed to pigs. Our work as waste collectors is very difficult but it is very important. It helps to save energy and raw materials and it also means that less space has to be used for dumping.



### To Do:

1. Find Cairo on the globe or map.
2. Imagine that you are working with Nabil on a waste dump in Cairo. With your group, think of five words to describe each of the following:
  - (a) the things which you can see;
  - (b) the smells which you would experience;
  - (c) how it feels to work on the rubbish dump.
3. Use these words to write a story of a day in your life in Cairo.



### Nazma's Story

Hello! My name is Nazma. I live in a country called Bangladesh which is east of India. Although just over twice the size of Ireland, Bangladesh has a population of almost 112 million people. You can imagine how much waste is created by this number of people in one day! However, because Bangladesh is so poor, Bangladeshi people try to waste as little as possible. Most of the food which we eat does not come packaged from the supermarket. We either grow our own rice and vegetables or else we buy them fresh from the market. This means that there is no expensive wrapping material to throw away. Sometimes people buy tinned milk. The tins are rarely dumped afterwards. They are often flattened out and used to decorate our rick-shaws. Any food which is left over from a meal is usually eaten the following day. Food which cannot be eaten is given to the chickens. Old clothing is mended and any clothes which are too small are passed on to younger members of the family. Some children spend their days on the dumps gathering up waste glass, metals or clothing which they sell in the market.



#### To Do:

1. Find Bangladesh on the globe or map.
2. Draw the table below into your exercise book. Then, with your group, make a list on that table of everything that you ate yesterday. Make a similar list of the foods which you think Nazma would have eaten yesterday. List these also on the table.

IRELAND		BANGLADESH	
Food	Packaging	Food	Packaging

- (a) Compare the packaging used in both countries. (b) Which caused more waste? Why? (c) What lessons can we learn from Nazma's story?



## Peter's Story

Hello! My name is Peter. I live in a country called Papua New Guinea. My country is very poor but we work hard growing food and working in the mines. Some years ago we decided to set up a recycling plant to recycle the aluminium from the old car engines, aeroplanes and aluminium cans which are dumped in and around our capital city.

We asked the people who live near the rubbish dumps to gather the waste aluminium. This waste aluminium is broken into small pieces and separated from any other metals which might be mixed up with it. It is put into very hot fires and it is melted into long bars. These large fires, called furnaces, are fired with waste oil which we get free from the garages around our factory. The garages would be throwing away the oil so we are doing them a favour by taking it from them and putting it to good use.

We are proud of our little recycling project. There are five other people working in this factory along with me. We earn a good living and we also pay hundreds of people who bring the scrap aluminium to our plant. But best of all, we are using waste to make a living and we are cleaning up the environment at the same time. In our country there is very little waste. People are always trying to find different ways of recycling old material. We hope that other people can learn to use their waste properly so that they can turn waste into cash just like we do.



### To Do:

- 1. Find Papua New Guinea on the globe or map.**
- 2. Read the last two sentences of the story again. Look at the pile of rubbish above. Can you find eight items which can be re-used or recycled.**
- 3. Make a list of your recycling suggestions.**



**Contestants:** Paul and Lucu. **Chat Show Host:** Gráinne Green. This is a competition to decide this week's winner of the 'Green Scene' Award. Can you help Grainne Green to find the winner? Read the interview below with your group.

### The Green Scene: Interview (Take 1)



**Gráinne Green:** *What is your name and where do you live?*

**Lucu:** My name is Lucu. I live in the Amazonian rainforest in the heart of Brazil.

**Paul:** My name is Paul. I live in a small town in the middle of Northern Ireland.

**Gráinne Green:** *What do you do first thing in the morning?*



**Lucu:** I wash myself in the stream which is a few minutes walk from my house. The water is fresh and cool at this time of the morning.

**Paul:** I have a shower every morning. I love all the suds and bubbles that come from my shampoo.

**Gráinne Green:** *What do you eat for breakfast?*

**Lucu:** When I get up in the morning I have breakfast with my family. We eat fruit from the banana and mango trees near our house and we also eat any of the maize which is left over since the previous evening.

**Paul:** When I get up in the morning I eat my favourite breakfast cereal from a brightly coloured red, green and blue box. When the box is empty I throw it away and buy another one.



**Gráinne Green:** *How do you travel from place to place?*

**Lucu:** I walk through the forest with my father collecting rubber from the pots which we have left hanging on the rubber trees.

**Paul:** My parents drive me to the school which is just down the road from my house.



**Gráinne Green:** *What do you eat during the day?*

**Lucu:** Sometimes we spend the whole day in the forest. We bring some dried food with us and we can pick fruit also. My mother says that when we throw the banana skin on the ground, it provides food for the smaller creatures of the forest.

**Paul:** I have a packet of crisps, a bar of chocolate, a fizzy drink and sand-







## The Green Scene (Continued)



wiches wrapped in tin foil for my lunch. When I have finished, I throw away the wrappers.

**Gráinne Green:** *What pastimes do you have?*

**Lucu:** In the evening we return to the house for food and rest. We sit around our campfire and sing songs, play the drums, dance and tell stories.

**Paul:** I can't wait to get home from school each day. I turn on the electric heater and the television and watch all of my favourite programmes.



**Gráinne Green:** *What do you do with your waste material?*

**Lucu:** We have very little waste. Any food which is left over is fed to the animals around our house or else it is used as compost in our garden. We never buy anything in plastic bags, tins, or glass bottles so we have none of the kind of waste.

**Paul:** I'm not sure what happens to our waste. All I know is that we put it in the bin and it is collected from front door every Tuesday. I wonder what really happens to it?



### To Do.

Draw two tables like the one below into your exercise book – one for Paul and for Lucu. Then, with your group, read back over each question. For each environmentally friendly action, give the contestant a score of 5 points. For each environmentally unfriendly action award a score of -5. Add up the scores to discover the Green Scene Award Winner of the week!

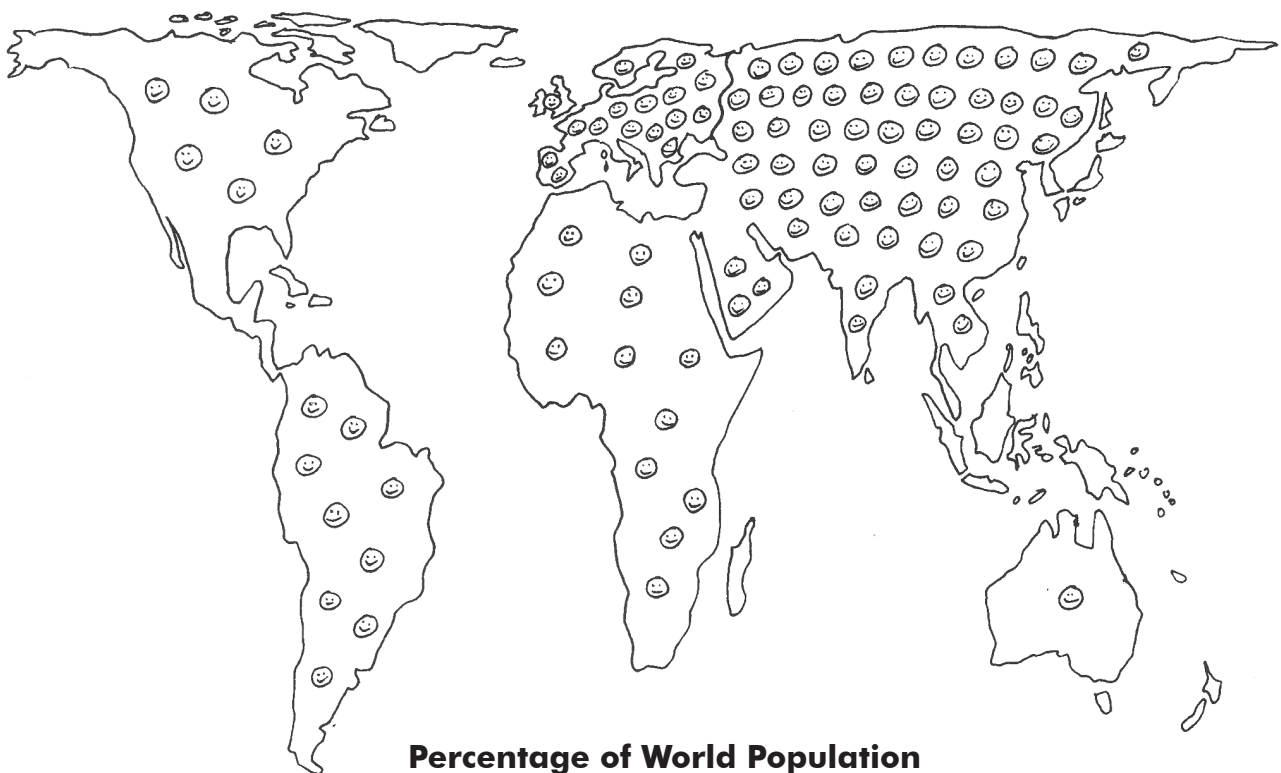
ACTIVITY	ENVIRONMENTALLY FRIENDLY	ENVIRONMENTALLY UNFRIENDLY	SCORE
Throwing away cornflakes box		✓	-5

1. Re-read the interview. What can we learn from Luca's lifestyle?
2. Think of ways in which Paul could become more environmentally friendly.
3. Draw a cartoon strip to illustrate your suggestions.



**Where do most people in the world live?  
Study the map below and find out.**

**Imagine that there are only 100 people in the world. Then each person on the map represents 1% of the world's population. By counting the number of people in each continent, you can find out the percentage of the world's population which lives there.**



**Percentage of World Population**

Africa	_____	Asia	_____
Europe	_____	Australia & New Zealand	_____
North America	_____	South America	_____

What surprises you about these figures?

What continent has the largest percentage of the world's population?

What continent has the smallest percentage of the world's population?





## GNÍOMHAÍOCHT 14

## Equal Shares



Each person in the North uses energy equal to 6 tonnes of coal per year, while each person in the South uses just  $\frac{1}{2}$  a tonne.



A person who lives in America produces 170 times more pollution from burning fuels like oil and coal than a person who lives in Zaire.



Each person in the North (Europe, North America, CIS, Japan, Australia and New Zealand) uses between 30 and 100 gallons of water per day. The average American flushes away more water each day than a person from Madagascar uses in 1 month!



More than  $\frac{3}{4}$  of the world's people live in the continents of the South, such as Asia, Africa and South America. The people in these places use just  $\frac{1}{5}$  of the world's resources such as oil, coal, trees and minerals.



Each person in the North uses more than 14 times as much paper per year as each person in the South.



Each person in the North uses over 10 times as much steel per year as each person in the South.



A person in Canada uses 100 times more trees than a person in India – and recycles less.



Hello there! My name is Borus. I come from the Stone Age. I fell asleep one night in my tent, the same as always, but when I woke up in the morning I found myself here, in a strange new land, thousand and thousands of years on. It must have been something I ate!

Life in the Stone Age was great. We had enough food, plenty of warm clothes and lots of interesting games to play. Of course we did not have many of the things that you have now, but we managed very well without them.

I have seen lots of unusual things since I arrived here but most of all I have noticed that people are always throwing things away. Where I came from people threw very little away. We would never kill more animals at a time than we needed just then to feed our clan. When my father and the other hunters had killed an animal, the women in the tribe would come along and skin it carefully without tearing the animal's hide. This hide would be used for making clothes or sleeping furs. The tougher hide was used for making

shoes, not like your shoes, but still ones which did keep out the snow in the Winter.

We were careful not to throw anything into the stream near our cave because this stream supplied us with fresh water for cooking and drinking. We only cut down enough trees to supply us with wood and to make room for our tents. Our cooking pots were made from woven grass and if they got broken my mother would repair them again and again. In the Stone Age, we never asked for more than the land, animals, plants and birds could give us, and still everybody had enough. It seems so different here in your world. So much is wasted and thrown away, and yet so many people do not have enough to live on.

### Exploration of the story.

1. Re-read the story with a partner. Pick out your favourite part. Tell it to your partner.
2. List four things in the story which surprised you. Why?
3. How did the Stone Age people take care not to harm their environment?
4. What differences, do you think, would Borus see between life in the Stone Age and life today? What was better then? What is better now?
5. Write a story or poem which highlights the Stone Age person's respect for the environment.



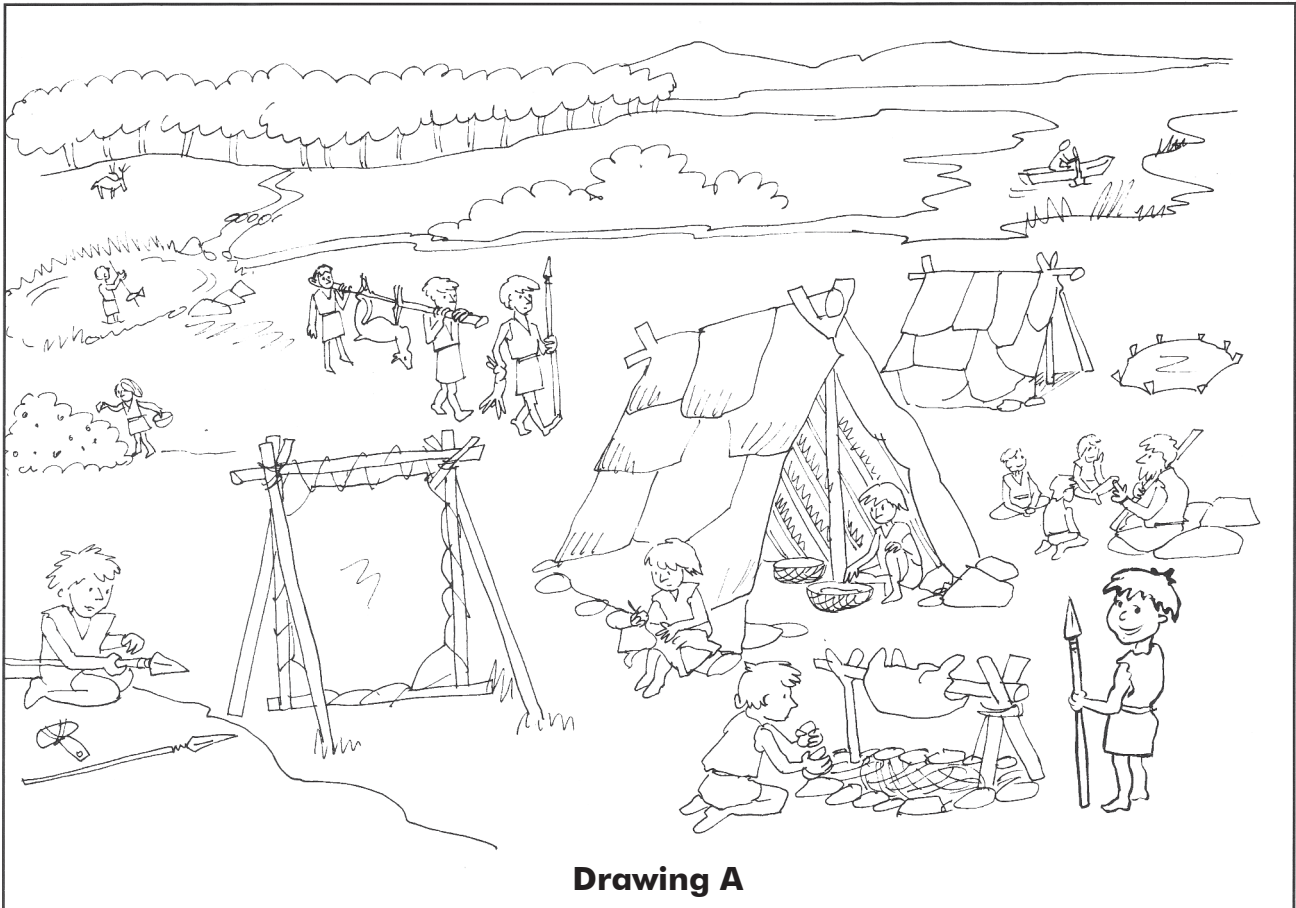
## Out of Place

**Colour the picture. Now look at the picture carefully. There are some things drawn into the picture which should not be there. Circle them with your pencil. Why, do you think, should they not be there?**





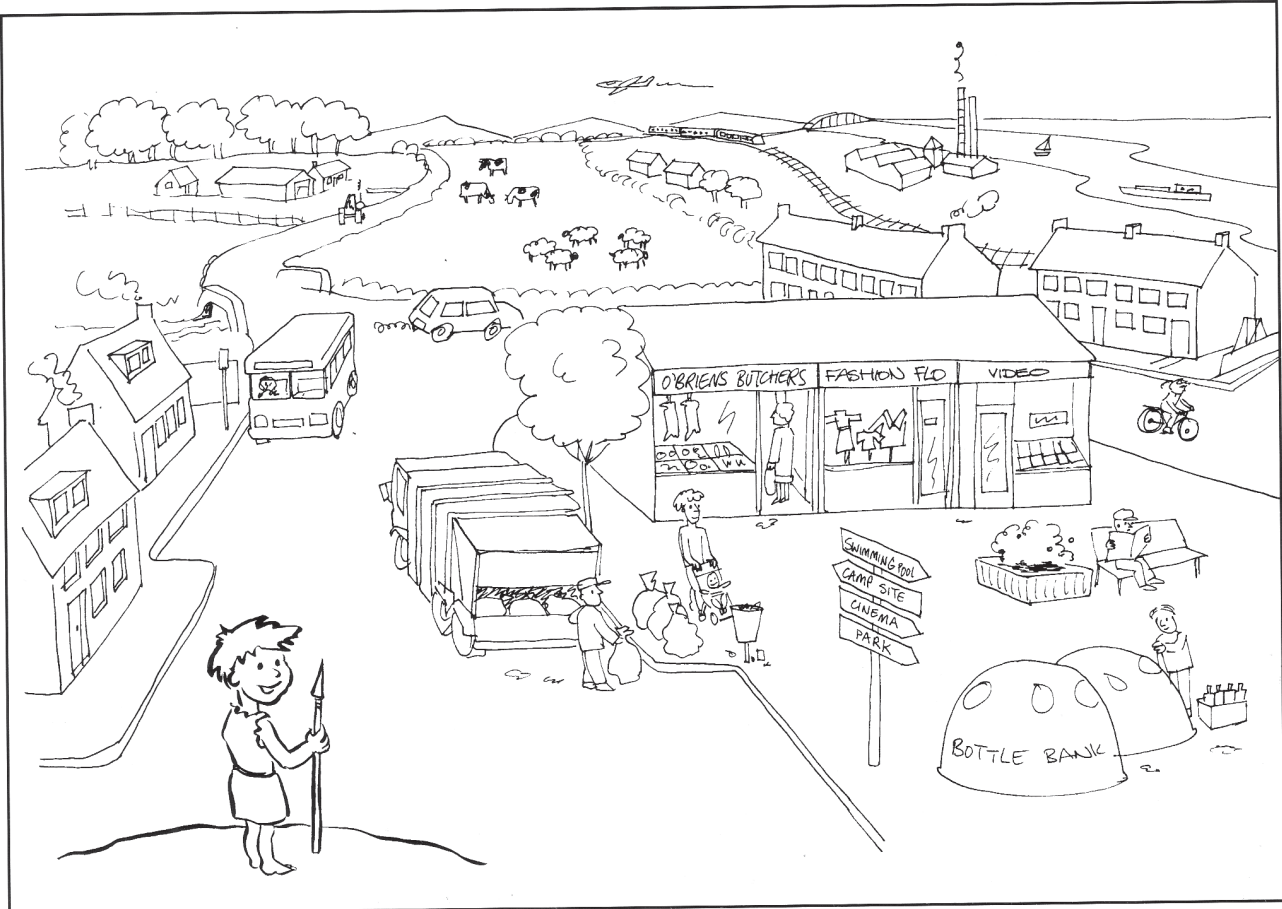
With your group, examine the two drawings which you have been shown.



**Drawing A**

**1. With your group, compare the two drawings which you have been shown. In your exercise books, answer the following questions about them:**

- (a) How are the houses different?**
- (b) How do people get their food?**
- (c) How do people travel?**
- (d) What kind of pastimes do the people have?**
- (e) What happens to waste material?**
- (f) Where do people get their clothes?**
- (g) How are animals used?**



**Drawing B**

**2. Discuss with your group what might have happened one hour earlier in Drawing A. Draw this scene.**

**3. Imagine what might happen one hour later in Drawing B. Draw or write about it.**

**4. Drawing A and Drawing B show the same landscape but at different times. With your group, list the ways in which the landscape has changed in Drawing B. Which changes are for the better? Why?**

**5. Which lifestyle is more environmentally friendly? Give reasons for your choice.**

**6. Each lifestyle has its advantages and disadvantages. Discuss what each way of life has to teach the other.**





## GNÍOMHAÍOCHT 17

### The Rubbish Family and their Wonderful Treasure

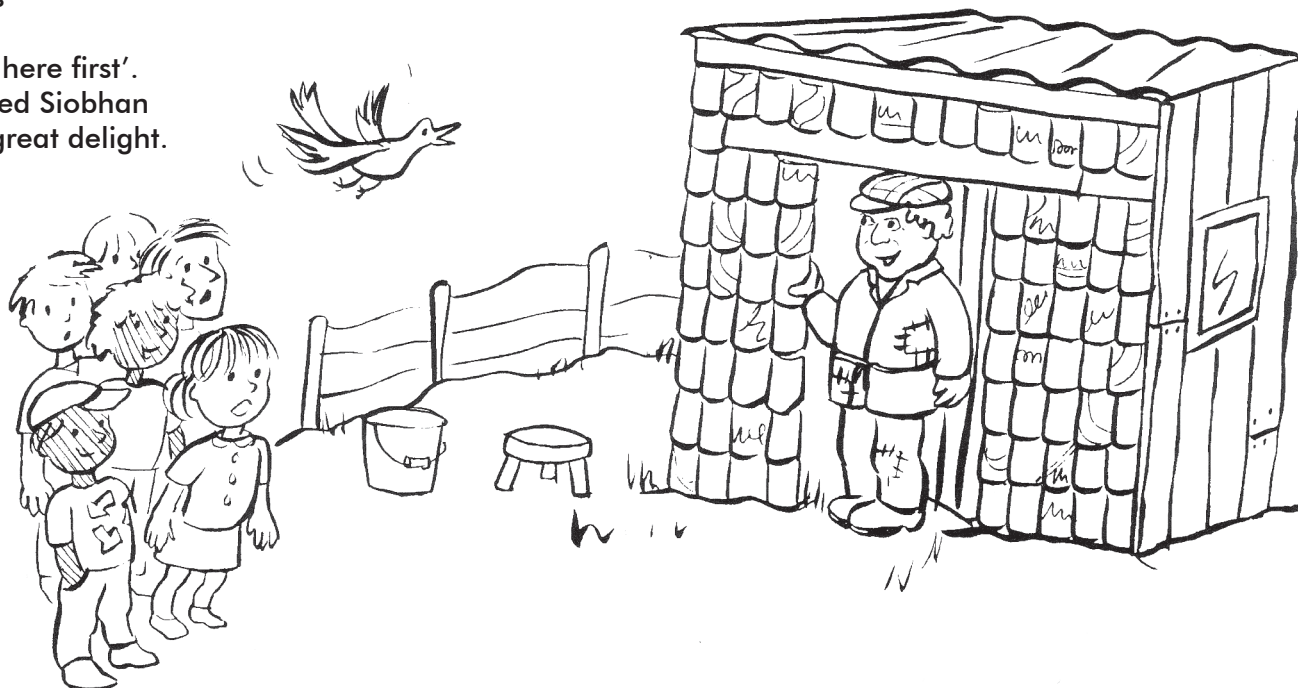
There was once a town called Ballydark. It was called Ballydark because it was a dull, dark place in which to live. All of the houses and the buildings were grey and ugly and all of the people were dull and quiet. They never did anything unusual or exciting. Life was not all colourful in Ballydark, and people went about their daily tasks without noticing their surroundings.

For the children, Ballydark was an especially dull place, even during the holidays. Every summer the children dreamt that this would be the summer when they would have the adventure they always longed for, but it never happened. One day Siobhan noticed a very colourful bird and decided to follow it. It seemed to stop and start and then wait for her to catch up. Some of her friends saw her trying to catch the bird and they decided to follow it too. 'Come on slow coach', called Siobhan. 'I'll bet I'll be the first one to catch the bird'. Soon a big group of children was following the bird through the dull streets. It was easy to see because it was the only colourful thing in the entire town. At last the bird stopped in a most unusual place, right on top of a tattered and torn old couch that had been dumped with many other things

'I got here first'.  
shouted Siobhan  
with great delight.

The children were laughing and joking so much that they got quite a start when they heard a voice behind them. "I'm Ruby Rubbish". It was a little lady with rosy cheeks and twinkling eyes, and peeping out from behind her skirts six little ragamuffin children. "I see you got our message". "Message?", said some of the children, puzzled. "What message?" Ruby Rubbish explained that it was they who had sent the colourful bird to find the children. "Why did you want all of us to come here?" asked John, who was very puzzled indeed. "Because we wanted to show you our treasure", said one of Ruby's children in a hushed voice. "Treasure!", said all of the children excitedly. "While we were waiting for you to arrive, we tidied up all of the treasure. Would you like to see it?" The children were really excited at this stage and said that of course they would like to see the treasure. Siobhan and her friends looked around, and all they could see were tidy bundles of old newspapers, boxes of empty lemonade and orange bottles and stacks of aluminium cans. "Welcome to our treasure chest", exclaimed Tony, "it looks more like a rubbish exhibition to me". "I suppose it does", said Mrs. Rubbish, "but what you don't understand is that other people's rubbish is our treasure!" "Just as I expected", complained Sarah.

"I knew that there would be no treasure. This







## GNÍOMHAÍOCHT 17 (Continued)

summer is going to be as boring as every other one". "Wait a minute now", said Ruby Rubbish, quite offended. "All of this stuff really is worth saving. It really

is a treasure because it can be turned into lots of wonderful new things, new glass, new metal and new paper. Some of this stuff is not

biodegradable, so either it must be dumped very carefully, or it must be recycled".

"Biodegradable means rubbish that decomposes and becomes part of the soil again. Certain things are not biodegradable so it makes sense to recycle them". The children knew that she was talking sense but they weren't sure what they could do to help. She showed them a huge scrap heap beside the hut. "I know that this isn't much to look at", said Ruby, "but with your help we can turn it into a smashing spot. We need you to help us to sort all of this stuff out. Remember, if something is useful, don't scrap it, save it". The children put on some strong gloves and began sorting. They found some very interesting things and got very dirty too. It took several days before the entire heap had been sorted out.

Mrs. Rubbish was very pleased with the children and she divided them up into groups to deal with the used materials they had sorted. One group took all of the bottles to the bottle bank. Another took the old paper to the mill. A third group took all the cans to the can recycling factory while a fourth group took the grass, leaves and food scraps to the compost heap. A big lorry was organised to come and take the real rubbish to the tip. At last the wasteland was cleared. Ruby asked the children to bring forks and spades with them next day. She went off and bought daffodil bulbs and shrubs and when the children turned up next day, they began planting bulbs and sow-

ing grass seeds. Frogs, snails, butterflies, spiders and birds began to appear now that the area was cleared of rubbish and beginning to look bright

green again.

It was as if the Rubbish-land had been turned into a Dreamland!

As time went on, more and more animals moved into the wild garden.

The children

had a beautiful place in which to play and they made sure that nobody threw any rubbish about. Siobhan came up with the bright idea that they would have separate baskets in their wild garden for glass, paper, tin and other things that people were finished with. When they were full, they would be taken to the recycling factories. One day the children asked the Rubbish family to come to a picnic in their wild garden.

"We'd love to", they said, "but we must be off to rescue more rubbish in other places". "Why don't you take over from us altogether?" The children were delighted to have a job with such responsibility and they promised Mrs. Rubbish and her children that they wouldn't let anything go to waste. Ballydark now has its very own wildlife park and it is no longer the dull, grey town that it used to be. "Remember to be kind to colourful birds", were the last that the children heard Ruby say before she and her six little ragamuffins set off on another waste-saving mission.

### To Do:

1. With your group, decide how you might follow The Rubbish family's example and begin your own recycling campaign in your area.
2. Draw a picture or write a poem which shows the benefits of recycling.

