Recycling
by Rosemary Border
(Adapted book. Pre-Intermediate level)

Chapter 1. A throw-away world

A lot of people feel that pollution has become one of the biggest problems in the world today. But when we talk about pollution, what do we really mean? Well, when you pollute something, you make it dirty or dangerous for other people or animals. If you put engine oil in water, you will pollute it; nobody will be able to drink it or wash in it. All over the world, there are people polluting the land, the sea and the air.

The main reason for pollution is waste - something which is no longer needed. Waste can be many things. It can be yesterday's newspaper, an old car, your dirty bath water, or smoke from a factory chimney. Some waste is dangerous because it contains poisons. This kind of waste is called toxic waste, and it is the problem of toxic waste which is worrying many people - and governments - today.

All living things, especially people, make waste. There are five billion people in the world. They all need to eat, dress and travel about. Most of them need to heat their homes as well. They buy things, they use them and they throw their old things away. Today, we live in a 'throw-away' world.

Farms and factories produce the things that people need. When they produce these things, they produce waste too. Cars, trains and buses, ships and aeroplanes carry people from place to place. They produce waste too. Everyone adds to the problem of waste, just by being there.

Chapter 2. Dumping or disposal

We often talk about waste disposal, but disposal is really the wrong word, because you cannot really dispose of waste. Suppose that you put your waste on a rubbish dump. You have dumped it, but you have not disposed of it.

If you want to do something better than dumping, you can change waste into something different. For example, you can burn it. This will produce heat, which may be useful, but it may also produce poisonous smoke and gases, which are another kind of waste.

Better still, you can change waste into something useful. This is called recycling. For example, old newspapers can be made into new paper.

Industry - making things for people to use - produces a lot of waste. Some industrial waste is just dirty, but some is actually dangerous. Some factories, for example, produce poisonous gases which go up into the air and then make acid rain which kills trees and pollutes water.

Sometimes toxic chemicals leak into rivers, polluting the water and killing fish and other animals. Toxic chemicals can also pollute the ground. In the USA in the 1930s, a chemical factory dumped a large number of big metal drums of waste chemicals in a hole in the ground. Later a builder covered the place with earth and built a small town called Love Canal there. In the 1970s the drums began to leak into the earth. The trees died. The ground was covered with a horrible, smelly, black slime which burned holes in people’s shoes. Everybody had to leave Love Canal. Later eighty-two different toxic chemicals

were found in the earth.

There are billions of old tyres on dumps all over the world. Some years ago, fourteen million tyres on a dump in Canada caught fire. The fire burned for two weeks. The burning tyres produced a black, oily smoke and toxic gases, and left behind a poisonous black slime.

Power stations produce electricity for homes and shops, schools and factories. Many power stations also produce smoke, toxic gases, mountains of dirty black waste and acid rain. When nuclear power stations were first built, many people were pleased because they did not pollute like the old power stations. But nuclear power stations produce nuclear waste, which produces radiation. You cannot see or smell radiation, but it is very toxic - and it stays like that for thousands of years. You cannot easily dispose of nuclear waste. Until we discover a good way of disposing of nuclear waste we will have to live with this dangerous problem.

Waste from farms is a serious problem too. Farm animals produce a lot of dung. The chemicals from the dung can leak into the earth and poison it. They can also leak into rivers and poison the water.

Aeroplanes and cars, boats and buses produce poisonous gases which pollute the air. They also make a lot of noise, which is another kind of pollution. Perhaps the best answer to this problem is a quiet, clean bicycle!

People at home produce waste too, and rich countries are more wasteful than poor ones. Every day New York produces more than 24,000 tonnes of waste and a lot of it is sent by sea to dumps thousands of miles away.

Waste from toilets is called sewage. Millions of tonnes of

sewage are dumped in the sea every year. The sewage pollutes the water, poisons fish and covers the beaches with brown slime.

Some rich countries dispose of their waste in other countries - they use poor countries as rubbish dumps. That is not really an answer; it is just another problem. Recycling waste is sometimes more expensive than dumping it. But if we do not do something soon, our waste will poison our world.

Recycling facts

- In the East and in South America, many people wear shoes made from old car tyres.

- In Africa many people collect cow dung and dry it in the sun. The dry dung burns almost as well as wood.

Chapter 3. Using things sensibly

Conservation means conserving things - saving them, or using them carefully. When you turn off the light in the daytime, you are conserving energy. When you write notes on the back of an old letter, you are conserving materials. You are also conserving your money!

Recycling means conserving materials and energy by using things again instead of throwing them away. When you recycle glass, paper or metal you conserve materials, energy and money. Recycling is important for three reasons. It reduces pollution. It conserves energy and materials. And it saves money, which can then be spent on other things.

Recycling is not new! Many examples of recycling are found in the natural world. Dung may seem like a waste

material to us, hut to a dung beetle it is food. When an animal dies, its body can be used as food by other animals. They, like the dung beetle, are reducing pollution and recycling materials.

Some things which are useless today were once useful and valuable. A hundred years ago, dog dung was used in factories which made animal skins into shoes and bags. Some people collected dog dung in the streets of London and sold it to factories. Modern factories use chemicals...

In Cairo today, 25,000 people make a living from other people's rubbish. Every morning the Zabbaleen go out and search the rubbish dumps. They take the best things they find to sell in the market, but they also collect glass, metal, paper and rags which they sell for recycling. They collect food which they give to their animals. The Zabbaleen help to keep the city clean. All over the world, there are people who collect other people's rubbish and recycle it. They do a good job and conserve money and materials. And they do not cost the government anything.

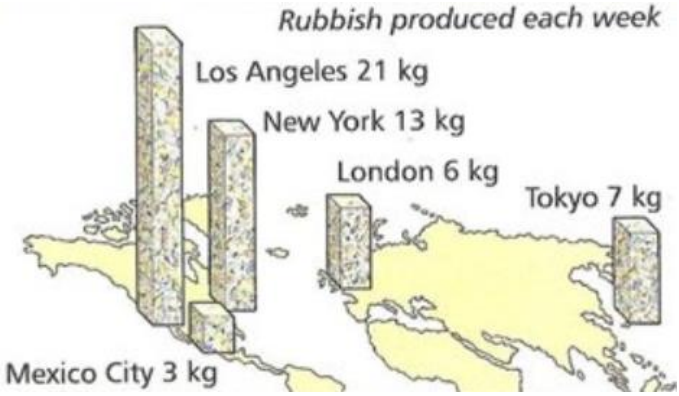
In countries where there are no people like the Zabbaleen, recycling costs the government a lot of money. People or machines are needed to search the dump for recyclable materials. It can seem cheaper to burn waste, or dump it in big holes, but this damages our environment.

Recycling fact

- Many ordinary people go to rubbish dumps to search for something that they need. A new door might cost £50, but it is possible to buy an old one from a dump for £1.

Chapter 4. Dump it - or recycle it?

How much rubbish do you throw out every week? If you live in Los Angeles, you probably throw away about twenty-one kilograms of rubbish every week. livery man, woman and child in London throws away six kilograms of rubbish every week. The figure for Tokyo is seven kilograms. Mexico City throws away only three kilograms for each person. Imagine the mountains of rubbish in a big city like New York, which throws away 170,000 tonnes of rubbish every week (more than thirteen kilograms for each person)! Most of this rubbish is useful, valuable, recyclable material.



In some countries there are laws about pollution and recycling. Their governments punish people who pollute the environment. Their governments also try to teach people about recycling. In other countries, there are no laws against pollution and their governments do not encourage recycling. This is why Europe and the USA send a lot of their waste to some Asian, African and South American countries. Rich countries have laws against polluting the environment. Many poor countries have no laws against pollution - and they welcome the money

which richer countries give them for dumping waste.

Laws against pollution make people and companies think carefully about the way they dispose of their waste. But governments need to encourage recycling too. Oregon in the USA is a good example. Several years ago, their government made a special law which encourages five things:

1. Reducing the amount of waste that is produced.

Sometimes a small change in the way you make things can reduce waste and save you money too. A company which makes birthday and Christmas cards produced a lot of toxic waste every year - until it started to use different chemicals for its colours. The new chemicals did not damage the environment. The company did not have to spend a lot of money on special waste disposal.

2. Reusing materials when this is possible.

Two good examples are recycling paper and reusing scrap metal from old cars.

3. Recycling non-reusable materials.

For example, it is possible to make old car tyres into other things.

4. Using waste which cannot be recycled or reused to make energy.

For example, you can burn waste to produce energy - electricity, gas or heat.

5. Disposing of 'useless' waste carefully and sensibly.

After you have reused reusable waste, recycled everything recyclable and used other waste to produce energy, there is not much 'useless' waste to dispose of!

Chapter 5. Preventing pollution

Some companies try hard to reduce waste and prevent pollution. The American company 3M have a plan called '3P-Pollution Prevention Pays'. They pay extra money to their workers to encourage them to reduce waste and conserve energy and materials. Since they started 3P, the company has saved almost a billion dollars, and reduced its waste by fifty per cent.

Some industries have reused and recycled materials for years. In many industries containers are used again and again. Oil drums are a good example. They are reused until they are too old to use, then the metal is recycled. The steel industry uses acid to clean the steel. The acid becomes polluted with metal. The metal in the acid is collected, and the acid is cleaned and reused.

The photographic industry does a lot of recycling too. Photographic paper is covered with real silver. The silver is collected and reused.

In many factories all over the world, waste is collected and reused. Industry can teach ordinary people a lot about recycling.

The 'waste exchange' is a useful idea. When video cassettes are made, toxic waste is produced. It is poisonous, but it is not useless. Another company needs it to make fertilizers - chemicals which make plants grow better. Both companies reduce pollution and save money.

One person's waste is another person's material. This is what the waste exchange is all about. Britain and the Netherlands have had a waste exchange since the 1970s. They exchange more than 150 different 'waste' materials.

Many industries use solvents - chemicals which dissolve

other materials. Most solvents are very toxic. Waste solvents used to be a big problem. You could not reuse them and they were dangerous and difficult to dispose of. There is now a $200 million a year industry in the USA which cleans and recycles industrial solvents.

In the USA 240 million old car tyres are thrown away every year. But tyres can be recycled to make pipes and floor coverings.

When you produce steel, you also produce a slimy black stone called slag. Slag is useless to the steel industry. Many years ago, there were mountains of slag beside every steel factory. Now slag is recycled for the building industry.

Some waste gases from power stations and factory chimneys are highly toxic. They contain acids which pollute the air and produce acid rain. But it is possible to recycle those gases, collect the acids and sell them to the chemical industry. There is another way of recycling gases from factories and power stations. Before going up the factory chimney, the gases pass through a special kind of stone which collects them. Then the stone is broken up and sold to the building industry.

Recycling fact

- In the 1930s in Trinidad in the West Indies, someone discovered that it was possible to play music on an old steel oil drum. Now the music of West Indian steel bands is famous all over the world.

Chapter 6. From old to new

Recycling materials is often very much cheaper than producing new materials. You can melt metal and use it again and again. Cars are usually recycled for their scrap steel. Have you ever seen a car breaker at work? He takes out all the parts that can be reused. (Customers can buy car windows, wheels, engine parts, carpets, seats and other useful things more cheaply from a breaker than they can in a garage.) Then a big machine flattens the car. It is like flattening an old Coke can. Next, the cars are taken away to the steel factory. There, powerful machines reduce each car into something like a small metal brick. The bricks are melted and made into new steel.

This is a very good way to conserve both materials and energy. But some people are too lazy to recycle their old cars. They drive them to a quiet place and dump them there. In Norway there is a very sensible law which encourages car owners to recycle their old cars. Everyone who buys a new car pays a deposit - some extra money. When they take their old car to the breaker for recycling, this deposit is returned to them. Perhaps every government should have laws like this.

The natural world is full of bacteria which can help to recycle waste. Bacteria can eat some surprising things. Some bacteria eat oil. An oil company in the USA digs its oil waste into the earth. There, billions of oil-eating bacteria change the toxic waste into clean water and air. Bacteria will eat many other chemicals too. They are sometimes used to clean land after industrial accidents.

Most cars are made of steel, but Trabants are different. These small, cheap cars were produced in East Germany until a few years ago. They were made of a kind of wood pulp. Scrap metal is valuable, but nobody wants old Trabants. There are

many thousands of unwanted Trabants on rubbish dumps in Germany. The Germans are still searching for special bacteria to dispose of them!

Chapter 7. Nothing lasts for ever

Pollution is not the only reason for recycling. It is important to reduce pollution, but there is another reason as well - the conservation of energy, materials and money.

Nothing lasts for ever. Almost all our energy comes from materials (oil, natural gas, etc.) which have been here since the world began. We are using them up very quickly. For example, unless we conserve our oil, it will only last for another twenty years. What will we do then?

Reusing is the easiest and cheapest kind of recycling. It saves a lot of energy, materials and money. Glass containers are easy to reuse. In Britain, the milkman brings bottles of milk to houses and collects the empty milk bottles. The bottles are cleaned and refilled. Every milk bottle can be reused thirty times.

Thirty years ago, drinks were sold in glass bottles and everyone paid a few pence deposit on the bottles. People took their empty bottles back to the shop and collected the money.

Then the glass industry began to produce No Deposit - No Return bottles which people could just throw away. This was very wasteful. In places where people still pay deposits, glass bottles are reused many times.

In industry, most glass is recycled, but ordinary people are often too lazy to do this. They throw their bottles away, and the bottles are taken to the dump. It is possible for workers on

the dump to separate glass from other waste - but it is much easier if ordinary people do the job for them. That is why there are ‘bottle banks’ to encourage people to recycle glass. The glass is collected and taken to the factory. There it is broken up, melted and made into new bottles. Recycling glass conserves materials. It also conserves energy. Every tonne of recycled glass conserves 135 litres of oil!

People throw away billions of drink cans every year all over the world. Some cans are recycled - but not enough. In Oregon the government made a new law several years ago. They said there must be a deposit on all drink cans. The deposit is returned when people bring the can back for recycling. In Oregon almost all drink cans are recycled now. They are melted down and the metal is used again.

Most cans are made of steel, but some cans are made of aluminium. You can recycle twenty old aluminium cans for the same amount of money and energy that it costs to make a new one.

The most valuable part of any drink can is the aluminium ‘ring pull’ for opening the can. Many people collect these for charity. The people of one village in the cast of England collected enough ring pulls to pay for a special bus for sick children.

Recycling facts

- Old bottles can be made into glass fibre. Fabric made from glass fibre is long-lasting, and it will not burn.

- You can also send thousands of telephone messages at once along one thin glass fibre. But it isn’t made from recycled

glass!

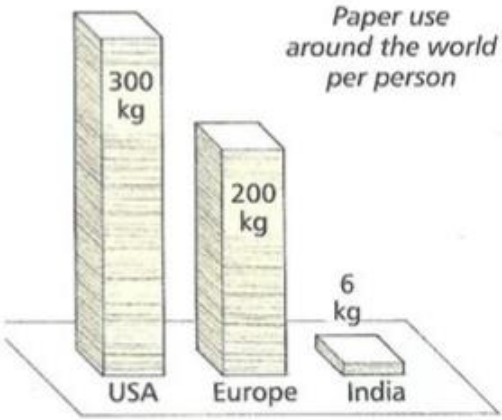
Chapter 8. Recycling paper - and saving trees

The world cuts down more than a million trees every year to make paper and paper products.

In the USA, each person uses about 300 kilograms of paper each year. In Europe, the figure is 200 kilograms. In India, each person uses only six kilograms of paper each year.

It takes two tonnes of wood and 200,000 litres of water to make a tonne of paper. About thirty per cent of our rubbish is paper and paper products. It is stupid and wasteful to dump them. Paper on rubbish dumps does not do anybody any good. It decays and produces poisonous gases. It is better to collect waste paper and other paper products and recycle them. Recycled paper produces;

- 35 per cent less water pollution;
- 74 per cent less air pollution and uses;
- 48 per cent less energy;
- 58 per cent less water than new paper.



Toilet paper, egg boxes, packing materials, writing paper and paper bags are good examples of possible recycled paper products. Every tonne of recycled paper conserves fifteen trees.

Some countries are better at recycling than others. It is important for governments to encourage people to do this. Many towns and villages now have ‘paper banks’ where people dump their paper in a big box. These banks are often in the same places as bottle banks and can banks. In some countries, the money which recycling companies pay for these materials is given to the town or village. In one village in England, recycled glass, cans and paper paid for a new children’s playground.

A lot of recycling goes on in schools. Materials are expensive, and schools never have enough money. Every classroom has a cupboard full of paper, old birthday cards, interesting boxes and old clothes. When my son was nine years old, his school produced *Animal Farm* by George Orwell. The children made animal heads out of waste paper which they made into papier mache - a pulp with water and a kind of glue. I think this is my favourite example of paper recycling.

My worst example? A friend gave us a small machine which made wet newspapers into ‘bricks’. We wet the newspapers, put them in the machine and dried the bricks. We burned the bricks on the fire. It was a wonderful idea, but the bricks made a lot of smoke and smelled terrible. We gave the machine away and took our old newspapers to the paper bank!

Recycling fact

- Some racehorses lie on beds of old newspaper. The paper and dung are then recycled as fertilizer.

Chapter 9. Recycling plastics - problems and possibilities

Most plastics are made from oil and other natural materials which will not last for ever. At the moment, we use plastic wastefully because it is cheap to produce. We pack things in it, then we throw away the packing. In Europe and the USA, about seventy per cent of the plastic that an ordinary family throws away in its rubbish comes from packing materials.

Plastic is a wonderfully strong, long-lasting material which is very difficult to destroy. Most plastic does not decay, like wood or paper, because bacteria will not cat it. It stays the same for hundreds of years. If you throw a plastic bottle in the sea, it will land, undamaged, on a beach hundreds of miles away. If you burn plastic on an ordinary fire it produces slimy smoke and poisonous gases. Although some special plastics have been produced which decay, they are expensive. It is much

better to find a way of reusing or recycling plastic.

Many foods and drinks are sold in plastic bottles, boxes and pots which can be reused. They make useful containers in the kitchen, or plant pots for the garden.

Some shops encourage customers to return their plastic containers. This conserves both energy and materials. It also saves customers' money!

Recycling plastic is more difficult than reusing it, because there are many different kinds of plastic.

Some plastics melt when you heat them. Others do not. You can make these 'unmeltable' plastics into a few products - posts or garden furniture, for example - but these cannot be recycled again.

Some kinds of plastic are recyclable if you can separate them from the other kinds of plastic.

Waste polythene, which is a kind of plastic, is collected from factories and recycled into small balls which are used as packing materials and in the building industry.

In the USA there is a factory which recycles the plastic containers from 'fast food' like hamburgers and hot drinks. The plastic is washed, then melted. It is made into plant pots and other useful things. At the moment, this kind of recycling is expensive. Some people think it is better to burn the plastic to produce energy.

Ordinary people can help to recycle plastics. Some shops have 'plastic banks' where customers can leave their old plastic bags. Some shops give customers a few pence for every plastic bag that they bring back. The bags are sent to a factory, where they are recycled.

The French drink a lot of bottled water. Now someone has

found a way of recycling the plastic bottles to make sweaters. Each sweater uses twenty-seven bottles. These are melted to produce long, thin fibres, which are then made into fabric.

The sweaters will soon be in the shops, but they will not be cheap. This is because it is more expensive to recycle the bottles than to produce new man-made fabrics.

Recycling fact

- The first plastic was made in 1850 by an Englishman called Alexander Parkes. He called the new material Parkesine, but nobody wanted to buy it.

Chapter 10. From rags to riches?

Fabric is very easy to reuse and recycle. Not long ago, rag men went through the streets of every town, buying unwanted clothes and other rags. They separated the different kinds of fabric and sold them to factories for recycling. There are still plenty of rag men all over the world. They may not go from house to house, but they still buy unwanted fabric and send it to factories for recycling. Rags are an important industry.

Some rags are made into new fabrics. Natural fabrics like cotton and wool are easier to recycle than man-made fabrics. You can separate the fibres and make them into new fabric.

A lot of work clothes are made from recycled rags. Some rags are made into a kind of pulp which is used for beds and chair seats. Some become industrial rags for cleaning dirty hands and machinery. Manmade fabrics are made into little balls, which are used for packing. Industry is very good at

recycling fabric. Nothing is wasted.

In some countries, there are ‘fabric banks’ to encourage ordinary people to recycle their waste fabric.

But many things are much too good to put in fabric banks.

Long ago, people did not have many clothes and they wore them for a long time. Today, many people have lots of clothes and they throw them away when they are tired of them. But the clothes are still good and it is wrong to waste them. Many schools in Britain have shops where parents can exchange their children’s school uniform. There are ‘nearly new’ shops for adults which do the same thing. People who shop there are conserving materials, energy and money.

Charities like Save the Children and The Red Cross welcome unwanted clothes. They sell some in their charity shops. They give some to poor people. They sell the worst clothes to the rag men for recycling. Nothing is wasted.

Have you ever been to a car boot or a jumble sale? They are an important way of recycling jumble -unwanted things - in some places. Every Saturday there are thousands of jumble sales all over Britain. There, all kinds of unwanted things - clothes, furniture, washing machines - are sold very cheaply.

The money is often given to charity. Jumble sales are a good place to buy books and clothes. Do people have jumble sales where you live?

Recycling fact

- In 1992, a lot of oil leaked out of a ship near the Shetland Islands and many sea birds were covered with oil. Thousands of people sent rags to clean the oil.

Chapter 11. Energy from rubbish?

After you have reused and recycled your metal, glass, paper, plastics and fabric, there is still a lot of waste to dispose of. Most of it is ordinary household waste.

Household waste is usually dumped in landfill sites. These are places where somebody dug stone or metals out of the ground and left a big hole. You can fill that hole with rubbish.

Powerful machines break up the waste to make it smaller. On many dumps, people and machines separate the rubbish for recycling. Dangerous things like car batteries (which contain acid) and old refrigerators (which contain dangerous gases) are made safe.

Then they are sent for recycling. When the landfill site is full, you can cover it with earth.

There is too much waste, and there are not enough landfill sites. Many towns dump their rubbish on landfill sites a long way away. They have to use valuable energy to take it there. There are problems too. Decaying waste on rubbish dumps produces toxic chemicals which leak into the earth and pollute it. That is what happened at Love Canal. Some governments have made laws saying that all landfill sites must have a lining - a plastic sheet to separate the rubbish from the earth around it, like the plastic lining inside a swimming bath. But many old landfill sites do not have this plastic sheet.

Decaying waste also produces a toxic gas called methane. Methane smells bad, and it can explode too. But methane can be useful if you collect it carefully. A pipe under the rubbish dump collects the methane and takes it to a small power station. There

it is burned to produce electricity.

It is also possible to burn rubbish to produce energy. The smoke can be toxic, so you need to do it carefully. Some countries have ‘Energy from Waste’ plans. In Denmark, Japan and Switzerland, more than half of ordinary household waste is now burned to produce electricity.

Sewage and animal dung also produce methane. If you put this waste in a closed container, it decays and produces methane gas. This can be used to make electricity. Many villages in India and China use methane to provide heat and light for their homes. There is also a wonderful example of recycling in the east of England. A big chicken farm, which produces meat and eggs, also produces tonnes of dung. Dung is a good fertilizer, but the factory produced too much. Nobody wanted it. So the farmer built a small power station which produces electricity from chicken dung.

And now - the last word on household rubbish. A scientist in Belgium has discovered a way of producing oil from household rubbish! If we can recycle waste to produce oil, this will help to conserve energy and reduce pollution.

Recycling fact

- Some farmers burn methane gas in their cars. They say that their cars are no smellier than other cars!

Chapter 12. Recycling at home

What can you do to recycle materials and conserve energy? Well, you can’t melt down your old refrigerator or

make plastic into sweaters! But there are a lot of things you *can* do.

Don’t waste food. Don’t waste water. Don’t waste energy. Don’t waste materials. Use everything sensibly and carefully.

- Write notes on the backs of old letters and Christmas cards.

- Buy recycled products if you can.

- Use bottle banks, can banks and fabric banks.

- Say ‘No’ to plastic bags in shops. Take your own shopping bag.

- Give things away - don’t throw them away.

Farmers have recycled their waste for thousands of years. They grow food for their animals and use the dung for fertilizer for their fields. If you have a garden, you can recycle household and garden waste to make compost. Compost is a wonderful natural fertilizer. It helps plants to grow, it does not smell bad and it does not damage the environment. A bag of compost is expensive to buy, but almost twenty-five per cent of ordinary household waste will decay and produce good compost. Bacteria in the earth eat the waste and make it into compost.

Compost containers are expensive to buy, but you can make one out of waste materials. An old wooden box from a fruit shop makes the best compost container. You also need a piece of old carpet to cover the container.

Recycled fabric is not a new idea. For thousands of years, people have cut up their old clothes and reused the fabric. Every small piece of fabric was valuable. Carpets made from wool rags were beautiful as well as useful. When a woman’s dress was too old to wear, she made it into clothes for her child. When those were worn out too, she cut the fabric into small patches

and sewed them together to make patchwork. Nothing was wasted. Friends and neighbours often exchanged patches too.

A hundred years ago, when a girl got married, she took several patchwork quilts - bed covers - to her new home. There were no sewing machines in those days; every centimetre was sewn by hand. Some women sewed ‘crazy quilts’ from pieces of fabric which were too small to cut into ordinary patches. Nothing was wasted.

Some patchwork quilts were really beautiful. Every one had a name. There was ‘Dolly Madison’s Star’ (named after an American President’s wife) and ‘Flower Basket’. There was ‘Nine Squares’ and ‘Wedding Ring’. You needed to plan your patchwork quilt very carefully. Then you cut hundreds of small paper shapes and the same number of fabric shapes, a little bigger than the paper ones. You sewed a paper shape inside each fabric patch. Then you sewed the patches together. The paper shapes were almost always made from reused paper. Sometimes the same papers were used in several different quilts.

Today, you can sometimes find patchwork clothes and quilts in the shops, but modern patchwork is not often as beautiful as those old quilts. Most people today are too busy or too lazy to spend all their winter evenings planning a quilt, cutting patches and papers and sewing them all together.

Recycling fact

- In 1897 a paper maker in the USA made horseshoes from recycled paper!

Chapter 13. The Green family

Can we save our environment before it's too late? Who knows?

Well, let’s do some guessing. We say that a person who cares about the environment is ‘green’. Imagine a ‘green’ family in twenty years’ time. Gary and Gail Green and their children Gavin and Grace live in an ‘energy-saving’ house. Most of their house is under the ground. This makes it easy to conserve heat and keep the house warm in winter and cool in summer.

Light comes in through the roof, which can open and close like a window. Special panels collect the energy from the sun. Pipes bring water to the house for drinking, cooking and washing, but there is also a big container which collects rain water. All water is recycled and used again and again.

Sewage from the toilets goes into another container. The waste water is recycled, and methane gas is produced from the sewage itself. A pipe carries the gas to a power station, which burns it and produces electricity for everyone. A machine checks how much electricity and water each family produces, and how much it uses.

A long line of containers stands outside the Green’s house. One container is for glass, which is collected every month for recycling. A second container holds steel cans. Another container holds aluminium cans and ring pulls. There is a big container for paper. The container for plastic is not very big, because plastic packing is unfashionable. There is another container for rags.

The government encourages recycling. Suppose that last year the Greens collected two tonnes of materials for recycling. Every tonne of materials that the Greens - and other families -

collect for recycling saves energy. So the government gives each family the same amount of electricity and water to use in their home. If they use more energy and water than they conserve, they have to pay extra for them.

The Greens have a garden, where they grow fruit and vegetables. They make most of their household waste into compost. They sometimes buy bags of fertilizer made from recycled sewage and animal dung. Nothing is ever dumped in the sea or rivers.

The Greens exchange clothes, furniture and many other things with their friends and neighbours. But they think carefully before they throw anything away, because they know they need to conserve money, materials and energy.

Recycling is fashionable. Everybody does it. Film and TV stars use recycled products. Many rich people drive old cars with new engines, which burn electricity instead of oil.

Mr Green works mainly at home. This, too, conserves energy and materials. He sends messages to his London office by telephone and by computer. When he needs to go to London, he goes by train. Train tickets are cheap and the trains are clean and quiet.

All the Greens have bicycles, but they also have a family car. It is a big old 1995 Rover with a steel body, comfortable leather seats and a modern electric motor. The Greens recharge its battery at home every night. Mr Green often says, ‘They don’t make cars like this any more.’ Modern cars are made of a special kind of papier mache. When they wear out, the batteries are recycled and bacteria eat the car bodies.

At school last week little Grace Green learned about the dirty, wasteful 1990s. It was a time when people dumped their

sewage in the sea. They filled the earth, the rivers and the air with toxic waste, is it true?' she asked her mother. Gail Green was a child in the 1990s. 'Yes, dear,' she said, it's true.'

- THE END -

Hope you have enjoyed the reading!