



Bags, Bags, Bags

A Teacher's resource



Plastic bags are a source of visible litter.

There is an ongoing debate about their importance and their effect on the environment. Governments around the world have been studying the issue and creating laws to deal with the problem.

What would your children decide? Would they ban, tax or educate?



A Jute bag



Plastic bags along the Thames

Activity	Time	Objectives
Hot Seating	10-15 minutes	Creating questions, fact-finding about plastic bags
Specialist groups	30 minutes	Extracting information & using information, analysing situations, discussing, decision-making, role-playing, expressing opinions, creating a consensus
Consultations	20 minutes	Representing, persuading, group dynamics, listening, understanding different perspectives, arguing, group decision-making
Presentations	15-20 minutes	Communicating to the class, summarising, explaining

Introduction

This is an interactive activity that allows your students to do some quick research and play a role in an important ongoing debate. It uses a method of scenario analysis that is simple and will promote group discussion, whilst allowing for quick presentation to the whole class. It reduces a complex task to a manual, physical method encouraging the children to take part.

At the beginning, by working in specialist interest groups to explore two scenarios, your students will support each other in making decisions within their allotted roles. This will then give them the background and confidence to split into the consultative, multi-interest groups who will argue with each other about effects, outcomes and issues.

An intense series of activities in which a plastic bag becomes the focus of a debate about our environment, individual actions and global impacts around the world.

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Students using multiple bottom line.

Introduction activity <i>10-15 minutes</i>	Hot Seating a Plastic Bag	A fun interview activity in which the children interview a plastic bag.	Requirements: A chair, A personal item, A plastic bag, Briefing sheet
Specialist scenarios <i>30 minutes</i>	Using multiple bottom line analysis to review scenarios and train specialists 2 scenarios	Children are placed into specialist groups (eg plastic bag manufacturers, environmentalists etc) and are described changes that they have to analyse	Requirements: Sugar paper with tables, Post-its with arrows, Role-play sheets per child, Scenarios for teacher,
Consultations <i>20 minutes</i>	The specialists contribute to a consultation on what should happen to plastic bags	Should plastic bags be banned or taxed or left as they are with increased education and recycling.	Requirements: Sugar paper with tables, Post-its with arrows, Proposals per group
Presentations <i>15-20 minutes</i>	Each group presents their decisions to the class	After the presentations there could be a class vote on what should be done	

Introduction Activity

A quick way to start the session could be to do 'hot seating'. This is a simple method where you place a chair in front of the class and explain it is the hot seat, and that anything placed on it can be interviewed.

You can introduce the idea with a bit of humour and place a piece of your clothing onto the seat (eg a shoe). Or you could bring in an object from home that links to a personal story (an old toy, a valued present, a family heirloom...)

This is an excellent way of generating interview questions from a group. You answer the questions on behalf of the shoe!

If you don't know the answers make them up with a sense of story and humour. The important point is to elicit questions!

You can then put a plastic shopping bag onto the seat and see what questions the students come up with. Questions can range from 'how old are you?', 'do you like being a plastic bag?' and you can answer with a sense of humour and with information from page 9.

Some example questions and answers:

Question: *'How old are you?'*

'I am very young, I am only six weeks old, and I can last 100 years!'

Question: *'Do you like what you do?'*

'Well I get to meet a lot of people, when they use me again and again. But it is a strain, carrying all that shopping, and people put too much in and my handles stretch and even break, now that's painful!'

Question: *'What happens to you when you get old?'*

'Well most of my friends have been used as rubbish bags and end up in a smelly hole in the ground where they lie for years and years, or some lucky ones get burnt and the heat is used to make electricity for houses – but some make awful gases that can harm humans...'

Question: *'Where do you come from?'*

'I most taken from the Co-op by a lovely family. But before that I was made in a factory, and I was made from oil! The black gooey liquid that comes out of the ground and parts of it can be used for petrol in cars, or planes, or to burn to make electricity, but a lot of it is used to make plastics like me! Infact as oil comes from the dead fossilised bodies of plants, I was once a tree but thousands and thousands of years ago, maybe when the dinoasurs roamed the world!!'

After the interview you can then begin the activity, 'We are going to explore whether plastic bags are a good or a bad thing for our world' and what can be done about it.'

Briefing for Hot Seating a Plastic Bag

In the UK about 8 billion plastic bags are handed out each year, that 's over 300 per household, or about 134 per person every year.

In regards to littering, plastic bags are of significant concern in the marine and aquatic environment, as aquatic life can be threatened through entanglement, suffocation and ingestion.

Plastic bags are included in the definition of harmful marine debris. Plastic bags in the marine environment are of particular concern because when animals ingest them and die, as the animal decomposes the plastic bag is then re-released into the environment, available again for another animal to ingest and cause a fatality.

Whilst plastic bag litter on land does not appear to be a major problem for wildlife, it is unsightly and can block gutters and drains creating stormwater problems. Litter studies indicate that plastic bags are generally in the top twenty litter items counted, although not the top ten.

Plastic bags lend themselves to inadvertent litter due to their lightness and easy ability to 'balloon' with the wind. This may occur from disposal routes such as litterbins and landfills and from animal interactions with rubbish bins.

Plastic bags do not readily break down in the environment, so the number of plastic bags in the environment is, in effect, cumulative.

Surveys indicate that 60 per cent of bags taken home are reused as bin liners or waste bags, lunch bags and general carry bags. Bags that are reused as bin liners end up in landfill, and it is likely that bags reused for other purposes also end in landfill. Roughly 0.2 per cent of total solid waste going to landfill each year.

Plastic bags may take between 20 and 1000 years to break down in the environment. The environmental impact of plastic bags in landfill is likely to be low due to their inert nature. The major impact of plastic bags in disposal is not their effect on the actual landfill, but in litter emanating from the site. This is especially associated with unloading operations rather than the compaction and burial of waste.

Plastic bags are manufactured from ethylene, which is a by-product of gas or oil refining, ie a non-renewable resource.

The energy consumed in the manufacturing process for one bag, plus the energy content of the bag (the embodied energy) is calculated as :

- Fuel consumed by driving a car 1 kilometre is equivalent to 8.7 bags; or
- Fuel consumed by driving a 28 tonne articulated truck 1 kilometre is equivalent to 64.6 bags.

In comparison, it is estimated that the making of a plastic bag compared to a paper bag: uses up to 40 per cent less energy; produces up to 80 per cent less solid waste; produces 72 per cent less atmospheric emissions; and creates 90 per cent less waterborne waste. Because plastic bags are lighter than paper bags there is also less fuel used in distributing the plastic bags, resulting in less greenhouse gas emissions.

In regard to the social issues aspect of plastic bag use, the Plastic Bags Working Group noted that plastic bags are popular with consumers and retailers because they are functional, lightweight, strong, cheap and a hygienic way of transporting food and goods. The Working Group noted the irony of the majority of consumers using the equivalent of one new plastic bag a day, whilst complaining that 'someone' should do something about the issue. For instance, a poll for Clean Up Australia in 2001 found that although 92 per cent of those surveyed indicated that the effects of plastic bags on wildlife was a major concern, the majority of respondents indicated that they weren't likely to use an alternative (72 per cent), reuse a bag (63 per cent) or recycle a bag (64 per cent).



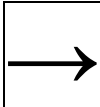


(Information mainly taken from Parliamentary Briefing to New South Wales Government.)

Plastic Bag Workshop - Teacher Sheet

Summary: This is a role-play activity, with five roles, each having an information sheet.

Aims: to extract information; to argue a viewpoint; to work out multiple bottom lines; to analyse consequences; to make decisions as a group; to make presentations.

Multiple Bottom Lines is an interactive method to explore the consequences of different scenarios:

Money	Workers	The Local Community	The Environment	The Customers	
					

Instructions:

1. The students should be put into five groups, each group has a specific role (eg shopkeeper, plastic bag manufacturer, jute manufacturer, environmentalist, government representative).
2. Students in each group should be given an information sheet each and asked to read it silently and highlight important facts (eg 5 facts or more).
3. The teacher displays to the class a multiple bottom line poster (see image above), with the arrows drawn on post-its. Each group will be given one of these posters. Instructions for class:

" I am going to describe to you events and you will have to think about what will happen. For example if plastic bags are banned what will happen to my money, profits, if I am a plastic bag manufacturer?" (student answers) "Yes the profits may go down, so I will put the arrow pointing down. What will happen to the workers?" (student answers) "Yes they may lose their jobs or have to work less, so the arrow will also be down... If nothing happens then the arrow can point sideways."

4. The first event is going back in time some 40 years when there were no plastic bags. In your groups move your arrows to show if things are good or bad for your money, workers etc.
5. Each group can display their poster to the class and explain their analysis, or one group can do it and the others simply explain where theirs is different.
6. The next scenario is moving forward in time, plastic bags are introduced to the world.
7. These two scenarios allow the students to live their roles, to make decisions and analyse whilst helping each other identify with a plastic bag manufacturer etc.
8. Now the groups are reformed, this time creating them with five people, one from each of the original groups. They will be a consultative group, representing the different interest groups.
9. They must discuss together and come up with a joint decision about the new scenarios given, they can then vote on the issues etc.
10. The Scenarios are **a.** to ban plastic bags **b.** to tax plastic bags **c.** to keep it as it is now but to educate people to bin, re-use and recycle. Each group can be allocated a scenario and then they feed-back their decisions and why at the end to the whole class.

(*Multiple Bottom Lines is an activity designed by Pete Duncan, this adaptation was created by the Humanities Education Centre, English Street, London E3 4TA tel: 020 7364 6405. For assistance/advice on this or similar activities contact the Centre)

Environmentalists

Your role: You fight to save the environment. You feel that plastic bags are a very big problem that is destroying the environment, killing animals and using energy. The information below can be used to argue against the use of plastic bags.

Information: Every year about 500 billion to 1 trillion plastic bags are used around the world. That is over one million every minute! The US uses 12 million barrels of oil to make the plastic bags they use.

In Bangladesh plastic shopping bags get stuck in the drains that take away the rain-water to the rivers. By blocking the flow of water they make the regular monsoon floods worse. In 1998 floods devastated two thirds of the country including Dhaka, killing over 3,000 people. The Buriganga River in Dhaka is reported to have a layer of plastic bags on its bottom which makes it difficult to dredge (make the river deeper by digging-up the bottom) and for ships to use the river.

In our seas there are about 46,000 bits of plastic floating in each square mile of water. This plastic kills up to 1 million sea birds; 100,000 sea mammals and many, many fish. Turtles, dolphins and killer whales mistake floating plastic bags for their food, jellyfish, and die when they eat the bags. When the dead bodies rot away the eaten plastic bags are released again, so that another animal might eat them.

On land plastic bags trap birds and kill farm animals. One farmer in Australia found 8 plastic bags in the stomach of a dead calf (baby cow).

In Ireland a shopper uses about 342 plastic bags a year. These could be replaced by using one cotton or jute bag. The plastic bags create 25.14 kg of carbon dioxide, the cotton bag only 0.62kg. In Ireland all the plastic bags used created some 31,000 tonnes of carbon dioxide. If 50 % of shoppers changed to using cotton bags it would mean that 15,000 tonnes of carbon dioxide would not be produced.

In the UK about 8 billion plastic bags are handed out each year, that 's over 300 per household, or about 134 per person every year. These bags can take hundreds of years to rot and only 1 in 200 is recycled. Most become part of our rubbish. Some plastic bags contain chemicals and chlorine inks that when burnt create very dangerous gases (eg dioxin and heavy metals).

The energy needed to drive a car 1 kilometre is the same needed to make 8.7 plastic bags.

Jute Manufacturers

Your role: You make bags from Jute that can be used by shoppers instead of plastic or paper bags. Jute bags look nice and can be used again and again and again. You want more people and shops to buy your Jute bags.

Information: Jute is a fast growing plant, that takes only 4 to 5 months to grow 1.5 to 4.5 metres. This means that it produces a lot of plant stuff for the land used (5-10 tons of dry stuff per acre of land).

It can grow in a range of different places. When it is farmed it does not need to be grown on land used for farming for food. It needs very little artificial chemicals (eg pesticides, herbicides, fertilisers) for growing. When the plants are cut and collected their leaves and roots are left in the soil helping to make the soil more fertile.

Jute can be used as fuel for fires for homes, as building material, and as a source of fibres (long, thin threads) that can be made into cloth for bags and clothes.

In Bangladesh Jute was grown as the major cash crop, that is grown to sell to other countries to bring money to Bangladesh. Due to competition from manmade fibres it is now the third most important industry for bringing money to Bangladesh.

3-3.5 million farmers are involved in its production. Almost one fifth of the country is involved in jute production, transport, processing and marketing.

Like all plants Jute uses the gas carbon dioxide as a way of making sugars. One hectare of Jute in a growing season uses 15 tons of carbon dioxide (several times higher than trees). Carbon dioxide is one of the main gases that is helping to make the greenhouse effect causing the planet to get warmer. Jute also produces 11 tons of oxygen, the gas all living things need to stay alive.

Environmental problems created by the Jute industry include the early process of soaking the cut Jute plants in clear, slow flowing water, this is called 'retting', and causes the fibres in the plant to separate out. This colours the water, producing smells and gases, that can take 30-45 days to become clear again. But the gases could be collected and burnt for energy, and the coloured water could be used as a fertilizer in growing rice.

The final processing makes pollution from oil, and chemicals and pigments for bleaching, dyeing and printing.

A comparison of plastic production with Jute found that: 1. To make 1 ton of jute takes 7% of the energy to make 1 ton of plastic; 2. To make 1 ton of plastic creates five times more waste than 1 ton of jute, and the jute waste can be used as fertiliser; 3. Jute production requires more water than plastic but plastic production makes waste water with heavy metals; 4. Jute plants take in carbon dioxide from the air but making 1 ton of plastic produces 3.7 tons of carbon dioxide!

Plastic Bag Manufacturers

Your role: You make plastic bags. There is a lot of people who want to stop plastic bags from being used. If people stop using plastic bags you will lose money and many people will lose their jobs in your factories. You need to persuade people that plastic bags are useful and needed.

Information: Plastic bags are the main way that we preserve our food and make sure that we keep food clean (cooked food must not touch uncooked food, and hands should not touch food). Plastic bags have reduced the amount of food that is thrown away (called 'food wastage') from 50% (in the undeveloped world) to only 3%. Research by a University (Columbia) has shown that as use of plastic packaging has increased there has been a reduction in food wastage.

Plastic bags have been produced for the last 40 years. They have been the cheapest and easiest way of collecting, storing and transporting rubbish. They make up less than 1% of the waste at rubbish dumps (holes in the ground called 'landfill sites') and help make sure the rubbish is not blown away.

Plastic bags are used again and again in the house. After using them to carry the shopping home they are used for bin liners, or as a school dinner bag, or to carry books in etc. Four out of five households re-use their bags. More than 250,000 tonnes of plastic is recycled by the plastic industry. Modern plastic bags are much thinner but as strong as they were 20 years ago, using 70% less plastic.

Making a plastic bag uses 40% less energy than a paper bag, producing up to 80% less solid waste. It produces 72% less waste gases and 90% less water waste.

As plastic bags are much lighter than paper bags they need less fuel to transport them, it takes 7 lorries to deliver the same number of paper bags as could be carried by one lorry of plastic bags. In 1999 the US used 10 billion paper grocery bags, that were made by cutting down 14 million trees.

The tax on plastic bags in Ireland is meant to cut down on people using them, as they have to pay more. The British Retail Consortium have said; 1. that it has not seen a change in plastic use; 2. That since 2002 there has been a 1000% increase in bin liner use and a rise in shoplifting. Many shops had switched to paper bags, as these are not taxed.

In Denmark 50% of all waste from houses is burnt to make electricity and to heat buildings. Plastic contains a large amount of energy, and when burnt as part of the rubbish it reduces the need of adding oil to help the burning. If this happened in all European countries it would save some 30 million tonnes of oil every year. When burnt efficiently polyethene bags only produce water and carbon dioxide.

People see plastic bags as a problem because they are easy to see and can be blown into trees etc if not put into bins properly. We need to teach people not to litter, to throw their rubbish into the proper bins, to reduce the amount of rubbish they make, to re-use plastic bags and to recycle them.

Shop keeper

Your role: You run a small shop that sells a range of things, including food, groceries, dairy, meat, a range of sweets, bread. You need cheap containers (bags & boxes) for your customers to use to take away what they have bought. You have to pay for these which takes away from the money you make. You have to ensure that you make money and that your customers are happy!

Information: Your customers want containers to take away their purchases. They want them cheap or free, and readily available.

Your customers are a mix of three types of people:

1. People who live locally and come most days, these spend the most amount of money and buy the largest number of goods;
2. People who come in once and you never see again, these normally buy one or two items that they have forgot from their supermarket shopping.
3. School children, who come to buy sweets and drinks, and stuff for their parents.

At certain times of the day, early morning and late afternoon, you are very busy and there is normally a friendly queue.

The money it costs you to run the shop (rent, rates, wages) and the money you make on each thing you sell are such that you need to sell a lot of things to make a living wage.

Your business will only be successful if you make life easy for you customers.

There is a campaign in your town to protect the environment, to reduce litter and to increase recycling. This is getting a lot of publicity in the local paper and in local schools.

Government Representative

Your role: You are a member of the government, it is your job to tell people about what has happened in different countries, when governments have changed the laws about plastic bags. From what has happened in the different countries what do you think might work?

You need to think about what would be best for your country. Listen to the evidence of the others, some of it may be exaggerated or one-sided.

Information:

In the capital of **Bangladesh**, plastic bags have been banned. Before the ban in Dhaka, 9.3 million bags were thrown away each day causing major problems to water drains and the environment. There has now been an increase in the manufacture of jute bags. There are large fines for breaking the laws.

Canada recycles plastic bags via their kerbside recycling program.

Thailand has banned the use of plastic bags in national parks and sells a replacement at park gates made of cassava - which lends itself to the belief that you can have your bag and eat it too!

In **Denmark**, there is a packaging tax which is designed to promote the use of reusable bags and textile bags. The tax on shopping bags introduced in 1994 reduced the use of plastic and paper bags by 66%.

In **Hong Kong** in 2001, it was estimated that 27 million plastic shopping bags were used each day – four bags per person per day. Hong Kong has introduced a 'no plastic bag, please' campaign, this simply asks shoppers not to use plastic bags. They have also stopped larger shops from providing bags to customers free of charge.

In **India**, the manufacture and use of plastic shopping bags was banned in Bombay from August 2000.

In **Italy**, a charge was introduced in 1998 on plastic bags. Because it was so small, 0.0051 Euro per bag, shoppers have not changed their use of bags.

In **South Africa**, the plastic bag has now become known as the 'national flower'. A charge for using bags has been created, the money raised will be used to promote re-use and recycling, and putting litter in the bin. The government has banned the really thin plastic bags.

In **Ireland** in 2001, the 'Waste Management Environmental Levy Plastic Bag Regulations' were brought into effect. The 'plastax', as it is called, a charge of 27¢, applies to all single use plastic carry bags, including biodegradable polymer bags. There is no charge for using plastic bags that hold fresh produce and bags designed for reuse and sold for more than \$1.27. The charge has resulted in a dramatic decrease of 90% to 95% in single use plastic bag consumption over the past year, and a substantial increase in reusable bags.

Useful Websites

(pictures and information for this resource have been extracted from these sites)

A report for local government, Warwickshire, on plastic bags:

<http://www.warwickshire.gov.uk/corporate/WDC%20Admin%20R5.nsf/0/cbeff2f193f67e1c80256ea7004c2e43?OpenDocument>

An Australian website campaigning against plastic bags:

<http://home.vicnet.net.au/~when/plastic.htm>

News item from Reuters about Bangladesh plastic bag ban:

<http://www.planetark.org/dailynewsstory.cfm/newsid/13863/newsDate/28-Dec-2001>

Report for New South Wales, Australia, on plastic bags:

<http://www.parliament.nsw.gov.au/prod/web/PHWebContent.nsf/PHPages/ResearchBf052004?OpenDocument>

Speech proposing a plastic bag policy to Northern Territory, Australia:

http://www.aph.gov.au/senate/committee/ecita_ctte/plastic_bags/submissions/sub270.doc

An American site that has been created by the plastic industry, which gives a positive look at plastic bags:

<http://www.plasticbag.com/environmental/issues.html>

How to use plastic bags to weave into a new bag:

<http://www.calderdale.gov.uk/tourism/museums/imadethat/ideas/bag.html>

UK Government policy on plastic use:

<http://www.defra.gov.uk/environment/waste/topics/plastics.htm>

Development Education Project site with an example from Mumbai of children changing the use of plastic bags in their community:

<http://www.dep.org.uk/scities/teachinglearning/howaffectteach.php>

B&Q press release announcing charging for plastics bags, with environmental issues:

http://www.diy.com/diy/jsp/bq/templates/contentlookup.jsp?content=/aboutbandq/2004/press_office/company/2004_October/carrier_bag.jsp

Plastic bag website that tries to counter the 'myths' of environmentalists:

<http://www.plastemart.com/upload/lit/plasticsandenviron/environment1.asp>

An article about Jute manufacture and the environment:

<http://www.chinaconsultinginc.com/unctadpaper.htm>

Study Group on Jute manufacture:

<http://www.jute.org>

For information about waste and recycling the Humanities Education Centre has created a briefing. For details of environmental organisations involved in school projects in East London you can download a list of 25 contacts with names, telephone numbers and addresses at the 'resources' page of:

www.towerhabitats.org/

Humanities Education Centre websites:

Children measure their effect on their community and world

www.globalfootprints.org

Primary school children share their projects

www.eastendtalking.org.uk

A site for teachers about citizenship practice in Tower Hamlets

www.citizenship-pieces.org.uk

Producing Jute



1. The Jute plant



2. Cutting the Jute



3. Soaking the cut Jute, Retting



4. Drying the Jute



5. Transporting the Jute



6. Transporting by boat



7. Jute products

Pictures from the website:
http://www.jute.org/prod_gallery.htm